PENSKE

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By Alameda County Environmental Health 10:33 am, Aug 16, 201

August 11, 2017

Ms. Karel Detterman
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: Revised Scoping Ecological Risk Assessment
Former Penske Truck Leasing Facility
725 Julie Ann Way, Oakland, California
Alameda County Site ID R00000354
Stantec PN: 185703466.300.0001

Dear Ms. Detterman:

Enclosed with this cover letter is the Revised Scoping Ecological Risk Assessment for the former Penske Truck Leasing location at 725 Julie Ann Way in Oakland, California.

As an authorized representative of Penske Truck Leasing Co, LP, I offer the following statement:

> I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Should you have any questions, please contact me at 610-775-6123.

Best Regards,

Chris Hawk
Environmental Engineer

Penske Truck Leasing
Rt. 10 Green Hills, PO Box 7635
Reading, PA 19603-7635

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gopenske.com

Revised Scoping Ecological Risk Assessment for the Penske Site at 725 Julie Ann Way Oakland, California

Prepared for:
Penske Truck Leasing

Prepared by:
Stantec Consulting Services Inc.

August 11, 2017

Revised Scoping Ecological Risk Assessment for the Penske Site at 725 Julie Ann Way Oakland, California

Prepared for: Penske Truck Leasing
Prepared by: Stantec Consulting Services Inc.
PN: 185703466

August 2017

This report was prepared in accordance with the scope of work outlined in Stantec's contract, and with generally accepted professional engineering and environmental consulting practices existing when this report was prepared and applicable to the site location. This report was prepared for the exclusive use of the Penske Truck Leasing Company. Any re-use of this report by others not identified above shall be at the user's sole risk without liability to Stantec. To the extent that this report is based on information provided to Stantec by third parties, Stantec may have made efforts to verify this third party information, but Stantec cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Stantec.

Information, conclusions, and recommendations provided by Stantec in this document have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

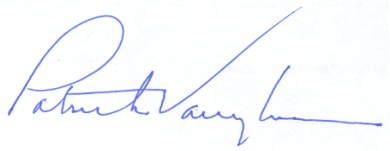
Prepared by:

Linda Mortensen
Senior Scientist

Prepared by:

Kristi Rettmann
Environmental Scientist

Reviewed by:



Patrick H. Vaughan, MS, CEM
Principal, Facility Assessment
Risk Assessment &Toxicology Practice.

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List of Acronyms

ACDEH	Alameda County Department of Environmental Health
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CalEPA	California Environmental Protection Agency
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
COPEC	chemicals of potential ecological concern
CSM	conceptual site model
CWHP	California Wildlife Habitat Relationship
DO	dissolved oxygen
DRO	diesel range organics
DTSC	Department of Toxic Substances Control
EcoRA	ecological risk assessment
ESL	environmental screening level
ft bgs	feet below ground surface
GRO	gasoline range organics
HERD	Human and Ecological Risk Division
HHRA	human health risk assessment
LTCP	Low Threat Closure Policy
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
µg/L	micrograms per liter
NFAR	No Further Action Request
NWI	National Wetland Inventory
ORC	oxygen-releasing compound
PAH	polycyclic aromatic hydrocarbons
ppt	parts per thousand
RWQCB	San Francisco Regional Water Quality Control Board
SGC	silica gel cleanup
SPH	separate-phase hydrocarbons
SVOC	semi-volatile organic compound

TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TPHd	diesel fraction of total petroleum hydrocarbons
TPHg	gasoline fraction of total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	volatile organic compound

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1 Introduction

This report provides a scoping level ecological risk assessment (EcoRA), including a preliminary screening level EcoRA, for the Penske property at 725 Julie Ann Way in Oakland, California (the Site). This assessment was implemented at the request of Alameda County Department of Environmental Health (ACDEH) and prepared in accordance with California's Environmental Protection Agency (CalEPA), Department of Toxic Substances Control (DTSC), Human and Ecological Risk Division (HERD), and Ecological Risk Assessment guidance (DTSC 2015, 1994).

At request of ACDEH, the December 2016 version of this EcorRA was submitted by Penske to AECOM for technical review. AECOM submitted their technical review letter dated July 10, 2017, which has subsequently been submitted to ACDEH. This EcoRA has been revised in accordance with AECOM's technical comments.

These procedures are intended to provide a qualitative assessment of the likelihood of potential risks to non-human receptors posed by contaminants released on the Site. A quantitative screening human health risk assessment (HHRA) was performed for this Site (Stantec 2013). The HHRA determined both cancer and non-cancer risks to people[1] from Site chemicals through indoor air inhalation were below state regulatory thresholds of concern.

1.1 Site Location

The Site is located in a mixed commercial/industrial area of Oakland, California approximately a half-mile east of San Leandro Bay and three miles east of San Francisco Bay (Figure 1). Land use immediately surrounding the Site is industrial and commercial. The Site is bound to the east by industrial properties, beyond which are railroad tracks; to the south by Julie Ann Way; to the west by an engineered drainage channel; and to the north by industrial properties (Figure 2).

The subject property is paved concrete and asphalt and occupying structures include a two-story office building with attached garage structure and a single story storage shed/storage structure along the western property boundary.

An unnamed open surface, earthen-banked drainage ditch is located immediately west of the Site, parallel to Coliseum Way. The ditch drains to a larger engineered water, partially concrete-lined channel located northwest of the Site, Seminary Creek, which eventually drains to San Leandro Bay. The engineered water channel is located approximately 80 feet northwest of the Site (Figure 2).

The Site and surrounding area was a tidal marsh until the area was filled as part of Oakland's industrial redevelopment in the 1950's (U.S. Geological Survey 1979). Aerial images from 1939 and 1946 show the Site and surrounding area as tidal marsh and the next image available, from 1958 shows the area as industrial with large warehouses in the vicinity but no structures on the Site (Appendix A). Alameda County property records indicate that the Site was developed in 1965. A 1965 aerial image shows the structures which match the present structures on the property (Appendix A).

The Site was used by Hertz Truck Leasing prior to 1988 when Hertz was acquired by Penske Truck Leasing. Penske Truck Leasing subsequently vacated the property in 1989. The property was occupied by Right Away Ready Mix as a concrete truck yard and corporate office between 1989 and 2016. The site is currently owned and operated by Oakland Firewood and Landscape Supply as a bulk storage yard for landscape materials.

1.2 Geologic and Hydrologic Setting

The Site is located within an area of regional subsidence within the East Bay Plain Sub-basin of the Santa Clara Valley Groundwater Basin and bordered to the east by the Oakland Hills. The East Bay Plain Sub-basin is a northwest-trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, and on the south by the Niles Cone Groundwater Basin. The East Bay Plain Basin extends beneath San Francisco Bay to the west (CDWR 2004).

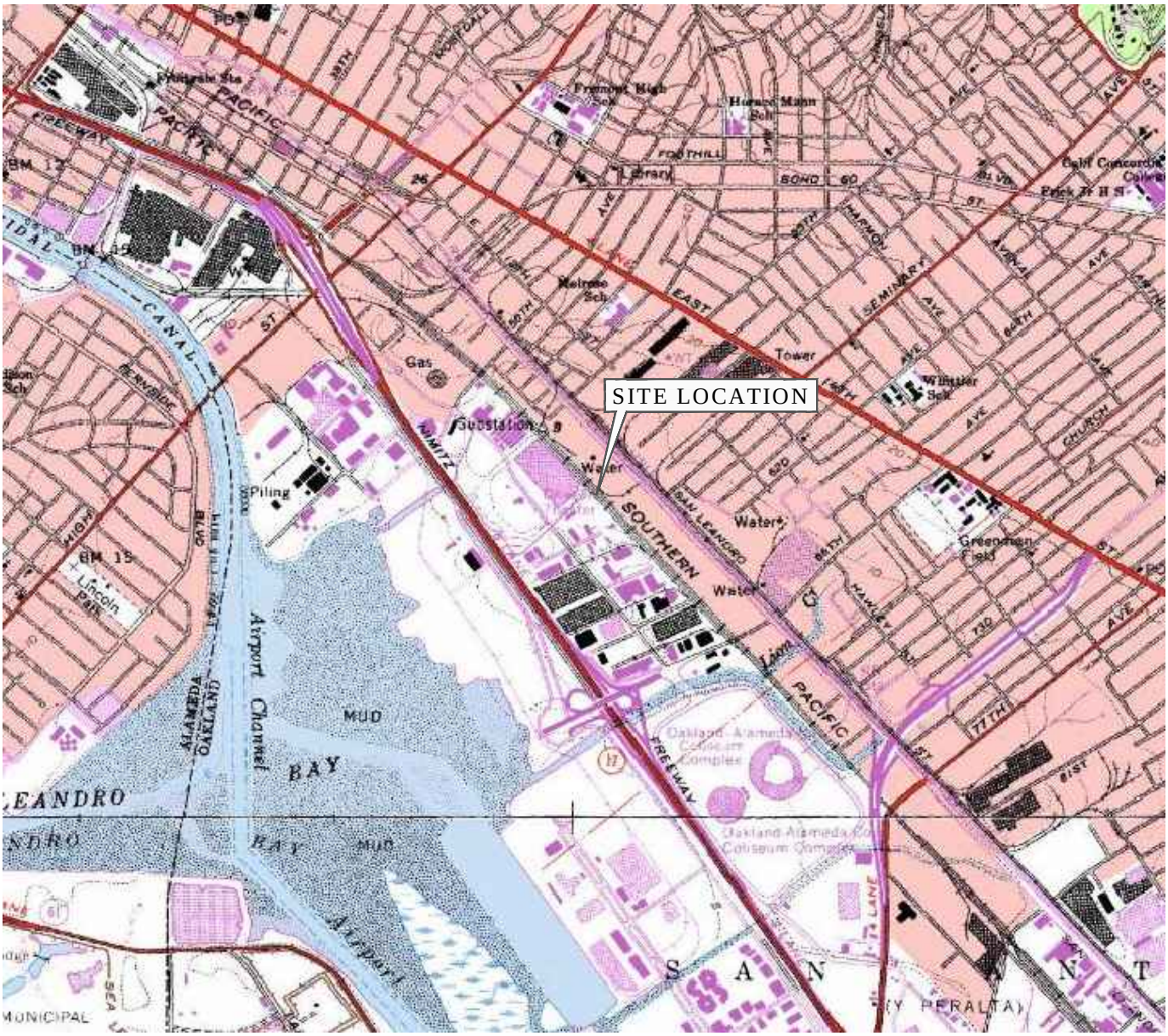
Soils beneath the Site consist primarily of clay, sand, silty sand, clayey sand, and sandy clay to a depth of approximately 31.5 feet below ground surface (ft bgs), the total depth explored. The upper 8 ft of soil is

[1] current and future onsite commercial/industrial workers and hypothetical future onsite residents

intermixed with industrial fill such as bricks, wood, and concrete emplaced as part of the infilling associated with the 1950's industrial redevelopment. Groundwater encountered in this upper fill zone is part of a discontinuous, non-confined perched water bearing zone, dependent upon the type of emplaced fill material at that location. A dark gray or black clay, typical of Bay Mud, is typically encountered at a depth of approximately 8 ft bgs. Saturated sands and silty sands present below 10 ft are semi-confined. The wells installed prior to 2014 are all completed in the lower saturated zone with wells screens varying from 5 to 35 ft bgs to 18 to 29 ft bgs.

Depth-to-groundwater beneath the Site has fluctuated between approximately 4.0 and 7.3 ft bgs since monitoring was initiated in February 1997. Groundwater flow direction beneath the Site has varied from northwest to southwest. A groundwater elevation contour map constructed from measurements collected in March 2013 is included as Figure 3.

Wells installed after 2014 focused on the upper perched groundwater zone along the drainage channel and were screened from 4 to 8 ft bgs.



CALIFORNIA

1 1/2 0 1

SCALE IN MILE

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE IN FEET

Image courtesy of the U.S. Geological Survey and Microsoft TerraService OpenGIS Map Server

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE: (925) 941-1400 FAX: (925) 941-1401

FOR:		SITE LOCATION MAP		FIGURE:
PENSKE 725 JULIE ANN WAY OAKLAND, CALIFORNIA				1
JOB NUMBER: 185702640.200.0001	DRAWN BY: RRR	CHECKED BY: EH	APPROVED BY: EH/GH/AM	DATE: 01/14/13

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LEGEND:

PROPERTY BOUNDARY

0 50 100

APPROXIMATE SCALE IN FEET

REFERENCE:

IMAGE ACQUIRED FROM GOOGLE EARTH PROFESSIONAL; 2014

SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

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FOR:
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OAKLAND, CALIFORNIA

SITE VICINITY MAP

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185702850.200.0001	RRR	EH	EH	03/03/15

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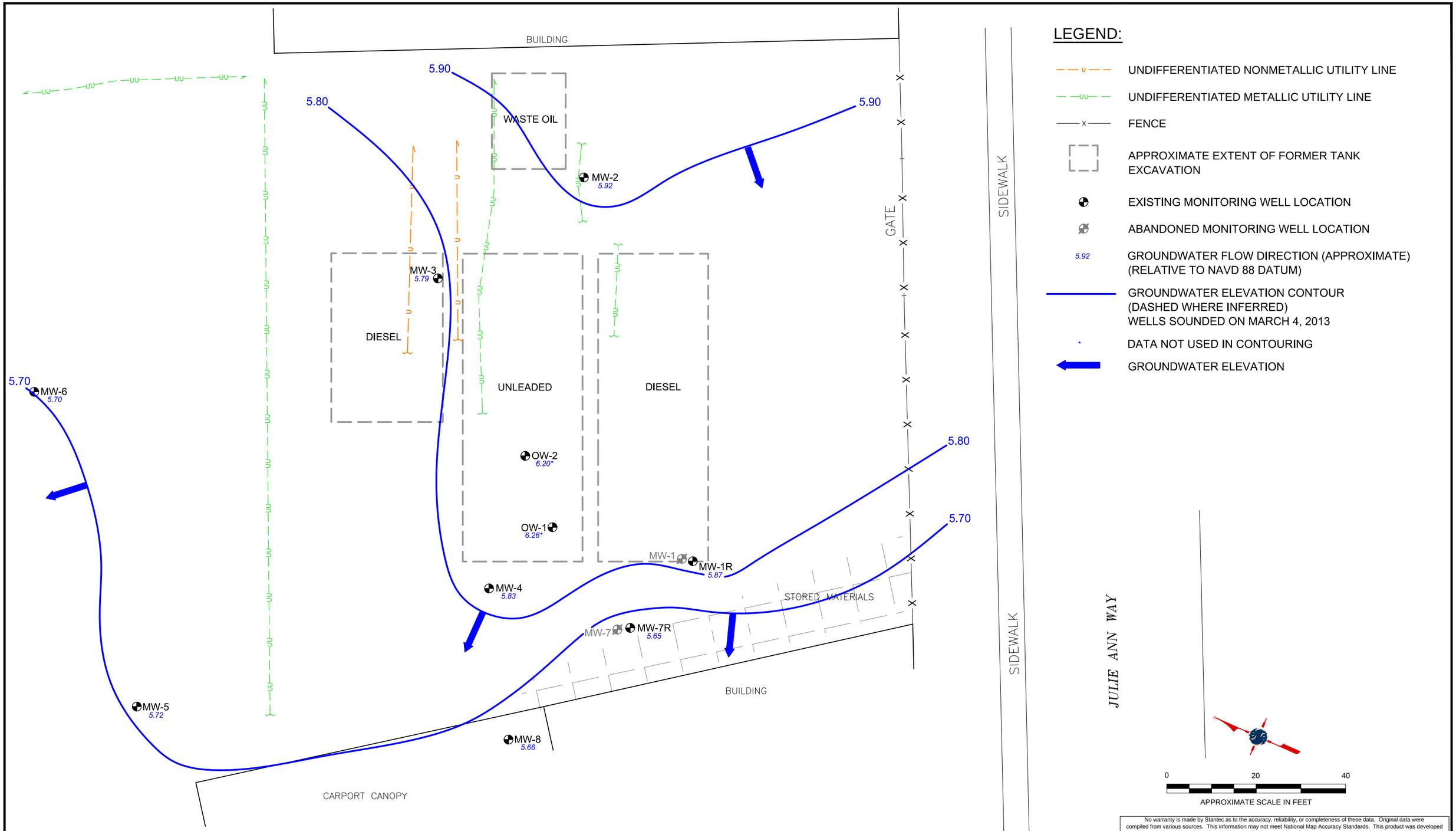

LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- 5.92 GROUNDWATER FLOW DIRECTION (APPROXIMATE) (RELATIVE TO NAVD 88 DATUM)
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED) WELLS SOUNDED ON MARCH 4, 2013
- DATA NOT USED IN CONTOURING
- GROUNDWATER ELEVATION

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC.
PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011;
TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

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PREPARED FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION SURFACE CONTOUR MAP MARCH 2013

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
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1.3 Site Background

The following is a summary of previously performed environmental work at the Site beginning with the earliest work.

Underground Storage Tank (UST) Removal and Monitoring

In October 1989, one 10,000-gallon unleaded gasoline UST, one 10,000-gallon diesel UST, one 1,000-gallon diesel UST, and one 550-gallon waste-oil UST were removed from the Site (Figure 3). Two over-excavations were conducted to remove 235 tons of hydrocarbon impacted soils (SECOR 2002). Following excavation activities, the former UST excavations were backfilled with clean pea gravel and capped with asphalt. During the backfilling operations, a discontinuous sheen of separate-phase hydrocarbons (SPH) was observed on the water in the excavation from which the gasoline and diesel tanks were removed. Approximately 300 gallons of water was purged from the excavation and disposed of off-site.

During September 1990, six soil borings were advanced in and around the former UST excavations to investigate the extent of impacted soil and groundwater (MW-1 through MW-3 and BH-1 through BH-3). Three groundwater monitoring wells were installed (MW-1 through MW-3) in the vicinity of the former USTs. Multiple soil samples were collected from each of the six borings.

Groundwater monitoring wells MW-4 and MW-5 were installed in February 1993 to better define the extent of groundwater impact. A site assessment was conducted in July 1994 to further define the extent of soil and groundwater impacts both downgradient (to the west) and crossgradient (to the north and southwest) of the former USTs. Four additional soil borings were drilled, three of which were converted to groundwater monitoring wells MW-6, MW-7, and MW-8.

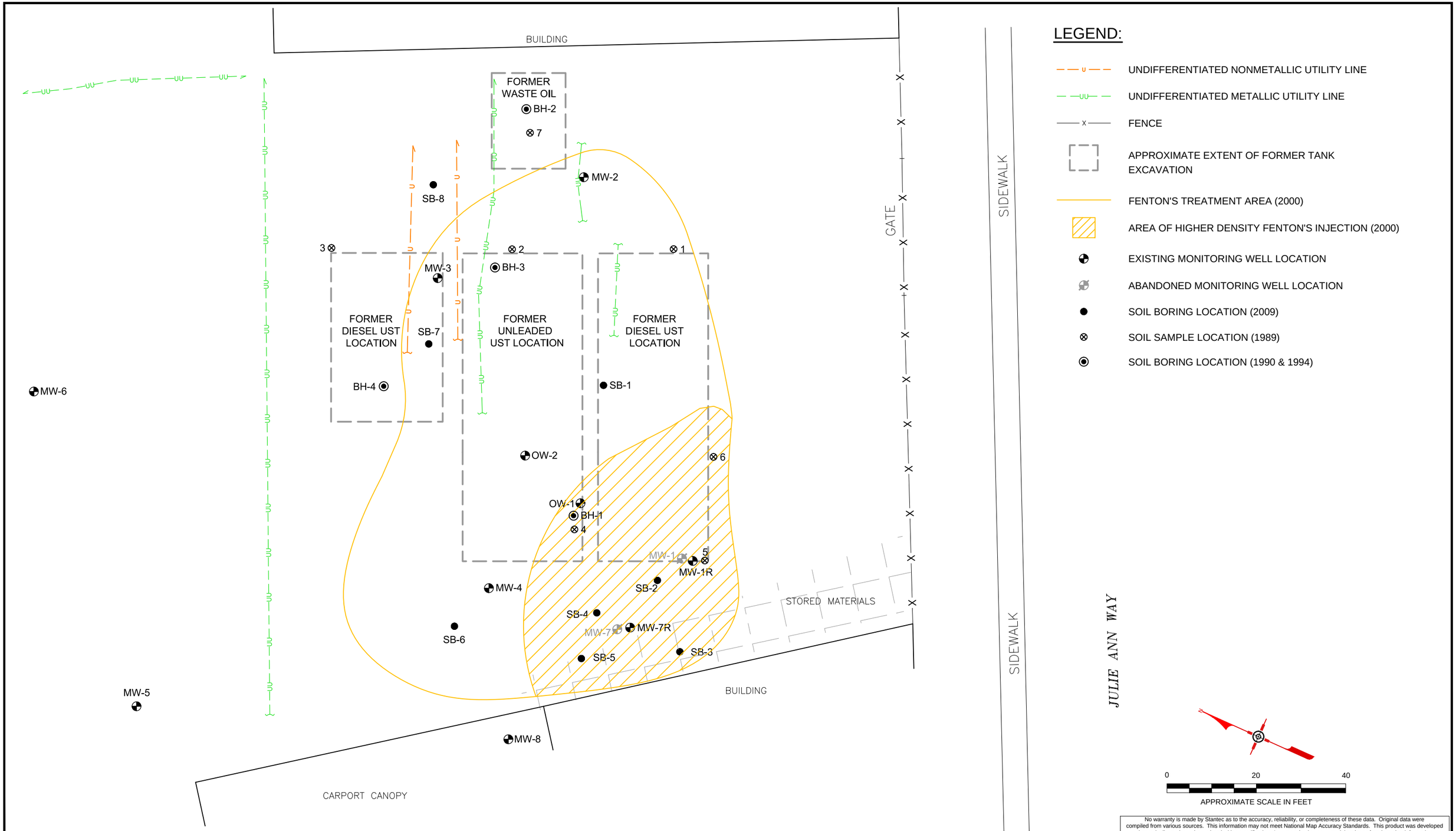
Based on these analytical results of these samples, a non-attainment-type zone was established with the concurrence of the ACDEH (Geraghty & Miller, Inc. 1994).

Implementation of Enhanced Natural Biodegradation

On May 22, 1997, two observation wells (OW-1 and OW-2) were installed within the former gasoline UST excavation and sampled. The two observation wells were drilled to depths of 16 ft bgs and screened between 6 and 16 ft bgs. Based on the results of the groundwater and biodegradation parameter testing data, it appeared that enhancement of the natural biodegradation would be necessary to promote the degradation of petroleum hydrocarbons in groundwater. Oxygen-releasing compound (ORC) socks were placed in observation wells OW-1 and OW-2. A total of ten 12-inch ORC socks were hung end to end in each well to span the 10 ft of well screen in each well. The ORC socks remained in OW-1 and OW-2 for six months. At the end of six months, groundwater analytical results indicated that petroleum hydrocarbon concentrations in downgradient well MW-4 showed a decreasing trend (Arcadis 1998).

Implementation of Fenton's Reagent Treatment

In order to reduce overall hydrocarbon concentrations in the highly impacted zone, Fenton's Reagent treatment was conducted at the Site in October 2000 (Figure 4). The program consisted of injecting Fenton's Reagent into approximately 50 direct-push injection points throughout the contaminated zone, but concentrated in the area of highest observed impacts. Fenton's Reagent is a strong oxidizer consisting of hydrogen peroxide, sulfuric acid, and ferrous iron, which oxidizes hydrocarbons upon contact to carbon dioxide and water (SECOR 2001). Post-treatment monitoring confirmed that chemical oxidation was successful in significantly reducing the amount of free-phase product in wells MW-1 and MW-7, and in reducing concentrations of dissolved-phase petroleum hydrocarbons in groundwater across the Site (SECOR 2002).



LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- FENTON'S TREATMENT AREA (2000)
- AREA OF HIGHER DENSITY FENTON'S INJECTION (2000)
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- SOIL BORING LOCATION (2009)
- SOIL SAMPLE LOCATION (1989)
- SOIL BORING LOCATION (1990 & 1994)

0 20 40

APPROXIMATE SCALE IN FEET

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC.
PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

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FOR:
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725 JULIE ANN WAY
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FENTON'S REAGENT TREATMENT AREA

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185702640.200.0001	RRR/STA	KC	ND	01/14/13

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Request for Site Closure

Stantec, on behalf of Penske, submitted a document entitled, "Request for Conditional Site Closure," dated March 2, 2004. The document requested conditional site closure from the ACDEH based on the results of the chemical oxidation program (SECOR 2004). The ACDEH responded to the document in a letter dated April 8, 2008, denying regulatory case closure based, in part, on the presence of petroleum hydrocarbon sheen in well MW-1 during post-remediation monitoring in December 2002. The ACDEH requested that Penske perform post-remediation source area characterization, evaluate the ability of Site monitoring wells to effectively monitor the presence of free-phase product on groundwater, complete a preferential pathway and receptor survey, gauge Site wells for presence of free product on a semi-annual basis, and upload Site data to the state's GeoTracker® database.

Further Characterization of Soil and Groundwater

Stantec submitted the Work Plan for Additional Soil and Groundwater Investigation (Work Plan), dated February 5, 2009 (Stantec 2009a), which included a proposed plan for evaluation of preferential pathways potentially associated with the former USTs. The preferential pathway study and proposed scope of work were approved in ACDEH correspondence dated March 16, 2009, with additional requests to sample soil and groundwater for naphthalene and lead scavengers.

As part of the ACDEH approved Work Plan investigation, soil borings SB-1 through SB-8 were advanced for the collection of soil and grab groundwater samples in April 2009. The locations of the soil borings are illustrated on Figure 4. Soil borings SB-2, SB-5, and SB-6, were located directly adjacent to monitoring wells MW-1, MW-4, and MW-7, wells that have historically reported the highest concentrations of petroleum hydrocarbons. Soil borings SB-1, SB-3, SB-4, and SB-7 were advanced at representative locations as illustrated on Figure 4, to evaluate soil conditions in the former Fenton's treatment area, evaluate vadose-zone soil conditions for the presence of coarse-grained materials which may influence subsurface migration of contaminants, and evaluate soil conditions in locations near subsurface features that may have been associated with previous underground tank operations. Soil boring SB-8 was advanced in the vicinity of previously unidentified lines that may have been associated with the use of the former USTs. Soil borings were advanced to first-encountered groundwater with the total depth of investigation ranging from 10 to 20 ft bgs. Groundwater was encountered most consistently at depths of 9 to 10.5 ft bgs in soil borings SB-2, SB-3, and SB-4. During advancement of soil borings SB-5, SB-6, and SB-7, water-bearing sediments were not observed during drilling, but static groundwater was measured in the boreholes at depths ranging from 9 to 11 ft bgs. Groundwater was encountered at 5.5 ft bgs in coarse-grained suspected backfill materials in soil boring SB-1, and static water was observed at 19 ft bgs in soil boring SB-8. Based on the observed conditions, depth to first-encountered groundwater at the time of investigation appeared to be approximately 10 ft bgs.

The preferential pathway study presented in the Work Plan identified subsurface conduits extending from the former unleaded UST excavation and western-most diesel UST excavation toward the on-Site building. The depth(s) of the lines could not be determined. Soil boring SB-8 was advanced to a depth of 17 ft near the northern terminus of the two lines (Figure 4) to evaluate the potential for the conduit or related backfill materials to act as preferential pathways for migration of contaminants or impacted groundwater. Soil boring SB-7, advanced to a depth of 16 ft within the former diesel tank pit, was also located in the general vicinity of the abandoned lines. Soil boring SB-7 encountered intervals of sand and gravel between the ground surface and 8.5 ft bgs. Static groundwater was measured at depths of 11 and 19 ft bgs, respectively in soil borings SB-7 and SB-8. The utilities do not intersect groundwater; therefore, preferential flow pathways are not present in this area of the Site.

Stantec's September 1, 2009, Soil and Groundwater Investigation and Groundwater Monitoring Report (Report), concluded that monitoring wells MW-1 and MW-7 were screened below the static groundwater level, rendering them inappropriate for monitoring the potential presence of free-phase fuel product on the groundwater table (Stantec 2009b). Stantec submitted the document entitled, "Monitoring Well Installation Work Plan," dated October 27, 2009, for replacement of MW-1 and MW-7. The Report and October 27, 2009, Work Plan were approved by the ACDEH in a letter dated December 17, 2009.

In January 2010, wells MW-1 and MW-7 were replaced since both were believed to be screened too deep – 10 to 35 ft bgs and 14-29 ft bgs, respectively. The new wells MW-1R and MW-7R (Figure 4; Stantec 2009b) were installed adjacent to the former wells. Both wells were completed at depths of 20 ft bgs with screen intervals of 3.5 ft bgs to 20 ft bgs. The construction of approximately 1.5 ft of unsaturated screen above the static groundwater level, would allow for seasonal fluctuations of groundwater elevation. Soil samples were collected from each borehole at 5 ft bgs. Groundwater monitoring was conducted semi-annually in 2010 and 2012 and annually in 2013 and 2014.

No Further Action Request

A No Further Action Request (NFAR) was submitted to ACDEH on January 14, 2014. The NFAR presented evidence indicating Site conditions meet all the general and media-specific criteria established in the State Water Resources Control Board's (2012) Low Threat Closure Policy (LTCP); they satisfy the case-closure requirements of Health and Safety Code section 25296.10; and they are consistent with Resolution 92-49 that requires that cleanup goals be met within a reasonable timeframe.

An Addendum to the NFAR was submitted on October 8, 2014 and presented detailed information regarding the groundwater sampling conducted in September 2013 and June 2014.

ACDEH provided their review and comments of the NFAR and Addendum in an email dated November 6, 2014. In the November 6, 2014 email ACDEH requested a Data Gap Investigation Work Plan (Work Plan) to characterize shallow groundwater along the western site boundary.

Data Gap Investigation

Stantec's, Work Plan was submitted on November 20, 2014 and approved by the ACDEH in a letter dated December 5, 2014. The ACDEH requested characterization of the shallow groundwater quality along the western site boundary to address their concern that residual fuel hydrocarbons in shallow groundwater may be reaching the drainage channel located immediately west of the Site, via migration through the drainage channel's earthen bank.

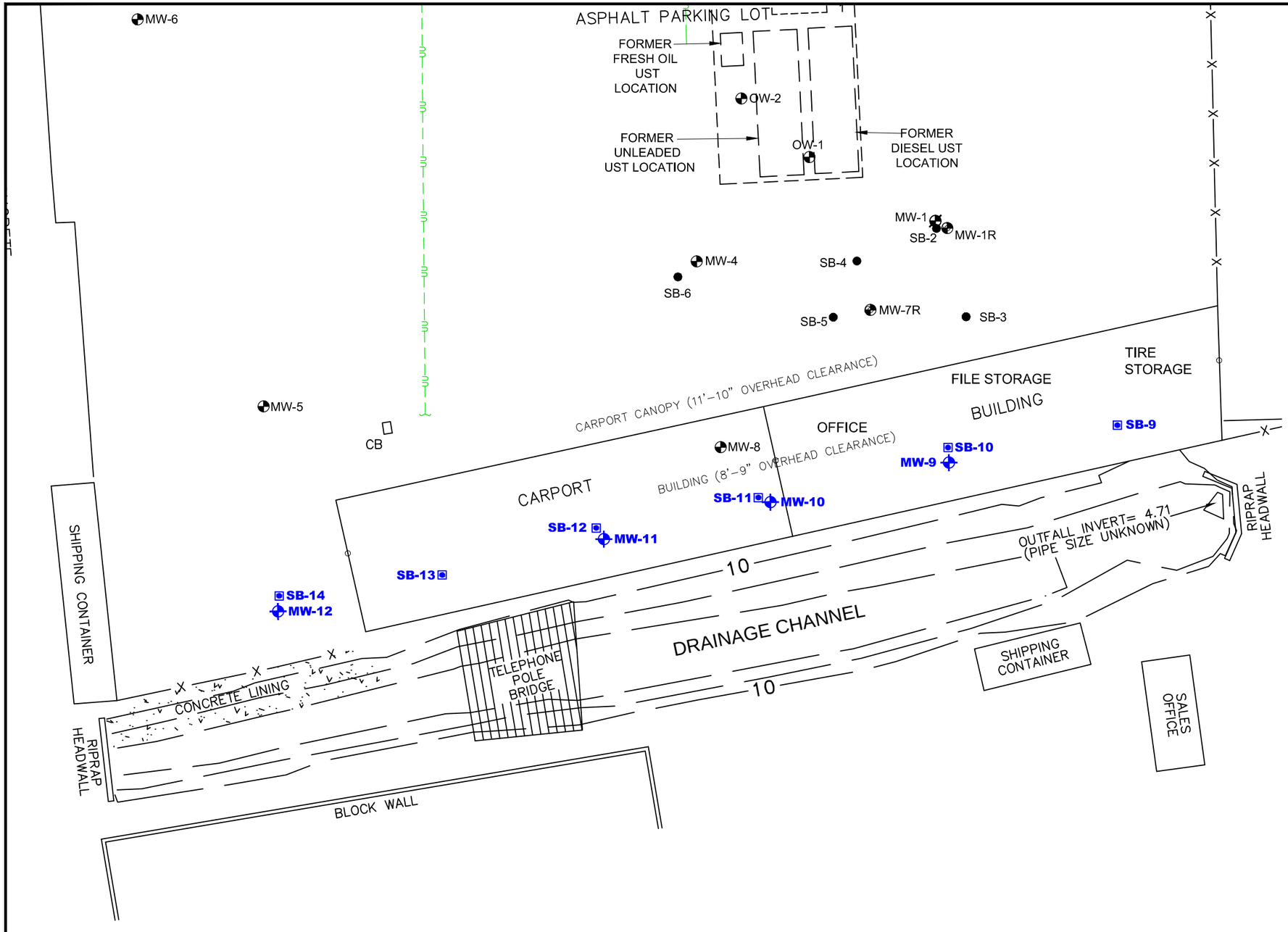
The Work Plan included a survey of the adjacent channel and site to determine the maximum depth of potential groundwater migration into the drainage channel's surface water. The maximum elevation difference of 7.5 ft was calculated between the property (11.53 ft) and bottom of the drainage channel (4.02 ft). Based on the 7.5-foot difference, the maximum depth of the soil borings for the investigation was 8 ft below grade.

Six temporary borings (SB-9 through SB-14) were advanced along the western property boundary and groundwater samples were collected and analyzed (Figure 5). The results were documented in the March 13, 2015 Data Gap Investigation Report (Stantec 2015a).

Installation of Four Shallow Monitoring Wells

In ACDEH's June 5, 2015 electronic correspondence providing review of the Data Gap Investigation Report, re-implementation of the Work Plan was requested with collection of groundwater sample volume adequate to ensure analysis of diesel range organics (DRO) and TDS in addition to gasoline range organics (GRO). In response, Stantec proposed the installation of four shallow monitoring wells for sample collection. The groundwater monitoring well locations were approved by ACDEH in a July 21, 2015 email.

Four monitoring wells (MW-9 through MW-12) were installed on July 23, 2015 to a total depth of 8 ft and screened between 4 and 8 ft below grade (Figure 5). Soil and groundwater samples were collected at each location, and were analyzed using methods described in the Work Plan. While analytical methods prior to the Work Plan included Silica Gel Cleanup (SGC), consistent with San Francisco Regional Water Quality Control Board (RWQCB) 2013 ESL guidance (RWQCB 2013), samples have since then been analyzed without SGC, which is consistent with current Environmental Screening Level (ESL) guidance (RWQCB, 2016). Based on the results, a site-specific EcoRA was proposed in the Shallow Well Installation and Sampling Report (Stantec 2015b) to evaluate the potential threat to aquatic habitat. In the June 10, 2016 ACDEH email Directive Letter (ACDEH 2016), ACDEH agreed with this proposal and requested that this site-specific EcoRA be prepared.



LEGEND:

- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- CB — CATCH BASIN
- SB-9 — SOIL BORING LOCATION (2015)
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- SOIL BORING LOCATION (2009)
- SHALLOW WELL 2015 (TD = 8 ft bgs)

ABBREVIATIONS:

mg/L = milligrams per liter
µg/L = micrograms per liter
ft bgs = feet below ground surface
TPHd = Total Petroleum Hydrocarbons as diesel
TPHg = Total Petroleum Hydrocarbons as gasoline
ND = Not detected at or above the laboratory reporting limit
< = Indicates constituent not detected at or above specified reporting limit
BOLD = Detected above laboratory reporting limit
(a) = SAMPLE EXHIBITS CHROMATOGRAPHIC PATTERN THAT DOES NOT RESEMBLE STANDARD
J = Estimated value
622/624 = Primary/Duplicate

NOTES:

1. GROUNDWATER MONITORING WELL SAMPLES COLLECTED ON JULY 24, 2015.
2. GRAB GROUNDWATER SAMPLES COLLECTED FROM OPEN BORING ON JANUARY 15, 2015.

0 20 40

APPROXIMATE SCALE IN FEET

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC.
PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

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ALL GROUND SPOT ELEVATIONS AND SURFACE CONTOURS BY MID COAST ENGINEERS - FIGURE 1 TITLED "TOPOGRAPHIC MAP FOR PENSKE" JOB#10018TP DATED DECEMBER 4, 2014

SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

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FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

2015
GROUNDWATER SAMPLES

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185702850.200.0001	RRR/STA	EH	EH	01/22/16

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1.4 Report Organization

Contents of this report include:

- Section 2 – Site Characterization
- Section 3 – Biological Characterization
- Section 4 – Pathway Assessment and Preliminary Screening
- Section 5 - References

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2 Site Characterization

The Site studies described in Section 1.3 have built upon the understanding of site-wide concentrations of chemicals and those chemicals that may pose concern for ecological risk. The data relevant to informing the ecological assessment includes all data collected since implementation of the Work Plan for Additional Soil and Groundwater Investigation (Stantec 2009a) which represents studies conducted after removal actions and remedy treatments were completed. Summary statistics for these data are presented in Table 1 for groundwater and Table 2 for soil. For the purposes of this scoping ecological assessment detected chemicals are considered to be chemicals of potential ecological concern (COPECs). Data on which these statistics are based are provided in Appendix B.

Table 1. Chemicals Detected in on-Site Groundwater (2009 to 2015)

Analyte	Detected					Undetected	
	n	DF (%)	Min	Max	Mean	Min	Max
Shallow Groundwater (4.8-5.5 feet below ground surface [ft bgs])							
TPH (micrograms per liter [µg/L])							
Gasoline	72	56%	21.5	4,000	282	20	50
Diesel	72	82%	28.8	26,000	2,875	24	50
VOCs (µg/L)							
Benzene	72	5.6%	0.63	2.6	1.2675	0.2	2
Ethylbenzene	72	2.8%	0.80	2.6	1.7	0.2	1
Toluene	72	0%	--	--	--	0.2	50
Xylenes	72	1.4%	6.9	6.9	6.9	0.46	4.6
Methyl tertiary butyl ether (MTBE)	72	75%	0.4	10	3.4	0.2	0.5
Acetone	10	30%	8.6	15.9	11.1	4.0	40
TCE	10	20%	0.50	1.4	0.95	0.20	2.0
Tert-butyl Alcohol	10	20%	11.3	15	13.15	2.4	24
SVOCs (µg/L)							
Acenaphthene	4	75%	0.60	1	0.78	0.51	
Fluorene	4	75%	2.1	4.2	2.8	0.51	
1-Methyl-naphthalene	4	75%	2	8.2	4.3	0.48	
Naphthalene	72	0%	--	--	--	0.48	50
Phenanthrene	4	75%	0.97	3.0	1.7	0.51	
Pyrene	4	0%	--	--	--	0.48	0.51
Conventionals (milligrams per liter [mg/L])							
Total Dissolved Solids	4	100%	1,430	1,730	1,573	--	--
Deep Groundwater (9-19 ft bgs)							
TPH (µg/L)							
Gasoline	2	100%	59	98	79	--	
Diesel	2	100%	430	860	645	--	
VOCs (µg/L)							
Benzene	2	0%	--	--	--	0.50	
Ethylbenzene	2	0%	--	--	--	0.50	
Toluene	2	0%	--	--	--	0.50	
Xylenes	2	0%	--	--	--	0.50	
MTBE	2	50%	--	2.0	1.5	0.50	
SVOCs (µg/L)							
Naphthalene	2	0%	'--		--	0.50	0.5

Notes:
n = number of samples
DF = detection frequency

Table 2. Chemicals Detected in on-Site Soil (2009 to 2015)

Analyte	Detected					Undetected	
	n	DF (%)	Min	Max	Mean	Min	Max
Soil (4.5-6.5 ft bgs)							
TPH (mg/kg)							
Gasoline	15	80%	0.26	230	95	0.24	0.25
Diesel	11	100%	9.7	12,000	1,501	--	--
VOCs (milligrams per kilogram [mg/kg])							
Acetone	4	50%	0.0391	0.0476	0.0434	0.033	2.1
Benzene	11	9.1%	4.8		--	<0.004	<1.0
Ethylbenzene	11	9.1%	1.0		--	<0.004	<1.0
Toluene	11	0%	--	--	--	<0.004	<1.0
Xylenes	11	0%	--	--	--	<0.009	<2.0
Methyl tertiary butyl ether (MTBE)	11	0%	--	--	--	<0.004	<1.0
SVOCs (mg/kg)							
Benzo(a)anthracene	4	75%	0.0148	0.0471	0.033	0.064	
Benzo(a)pyrene	4	50%	0.020	0.022	0.021	0.033	0.064
Benzo(b)fluoranthene	4	50%	0.025	0.032	0.029	0.033	0.064
Benzo(g,h,i)perylene	4	50%	0.0141	0.0285	0.021	0.033	0.064
Benzo(k)fluoranthene	4	50%	0.0148	0.0231	0.019	0.033	0.064
Chrysene	4	100%	0.0306	0.068	0.053	--	--
Fluoranthene	4	25%	0.0443		--	0.06	0.32
Fluorene	4	75%	0.11	0.516	0.260	0.32	
Indeno(1,2,3- cd)pyrene	4	75%	0.0137	0.0218	0.018	0.033	0.064
1-Methylnaphthalene	4	25%	0.366		--	0.033	0.32
Naphthalene	11	55%	0.052	0.610	0.156	<0.0097	<0.04
Phenanthrene	4	75%	0.144	0.721	0.371	0.32	
Pyrene	4	25%	0.0897		--	0.09	0.32
Soil (7.5-9 ft bgs)							
TPH (mg/kg)							
Gasoline	9	89%	1.9	320	80	<1.2	
Diesel	9	100%	2.5	820	433	--	--
VOCs (mg/kg)							
Benzene	9	11%	2.8		--	<0.004	<0.99
Ethylbenzene	9	0%	--	--	--	<0.004	<0.99
Toluene	9	0%	--	--	--	<0.004	<0.99
Xylenes	9	0%	--	--	--	<0.009	<2.0
MTBE	9	0%	--	--	--	<0.004	<0.99
SVOCs (mg/kg)							
Naphthalene	9	22%	0.055	0.370	0.213	<0.0097	<0.050
Soil (12-17 ft bgs)							
TPH (mg/kg)							
Gasoline	8	88%	1.4	66	17	<0.25	
Diesel	8	100%	2.3	280	146	--	--
VOCs (mg/kg)							
Benzene	8	13%	0.025		--	<0.0047	<0.20
Ethylbenzene	8	0%	--	--	--	<0.0047	<0.20
Toluene	8	0%	--	--	--	<0.0047	<0.20
Xylenes	8	0%	--	--	--	<0.0094	<2.0
MTBE	8	0%	--	--	--	<0.0011	<1.0
SVOCs (mg/kg)							
Naphthalene	8	25%	0.059	0.130	0.095	<0.0098	<0.049

Notes:
n = number of samples
DF = detection frequency

2.1 Distribution of Residual Petroleum Hydrocarbons

TPHd and TPHg are primary COPECs on the Site based on the nature and extent of contamination on Site investigated from the most recent data relevant to the site (2009 to 2015), and their frequency of detection in both groundwater (Table 1) and soil (Table 2). Soil and groundwater data for each year is presented in Appendix B.

2.1.1 EXTENT OF PETROLEUM HYDROCARBONS IN GROUNDWATER

Groundwater is present in two zones: the shallow perched zone between approximately 5 and 9 ft bgs and the deeper confined zone below the bay mud between approximately 18 and 30 ft bgs. The deeper groundwater zone meets the criteria for closure under the LTCP (State Water Board 2012) and is not expected to influence ecological risk since the depth to first encountered deep groundwater is below the depth of the drainage channel. Given these conditions, the deep groundwater zone is not evaluated further.

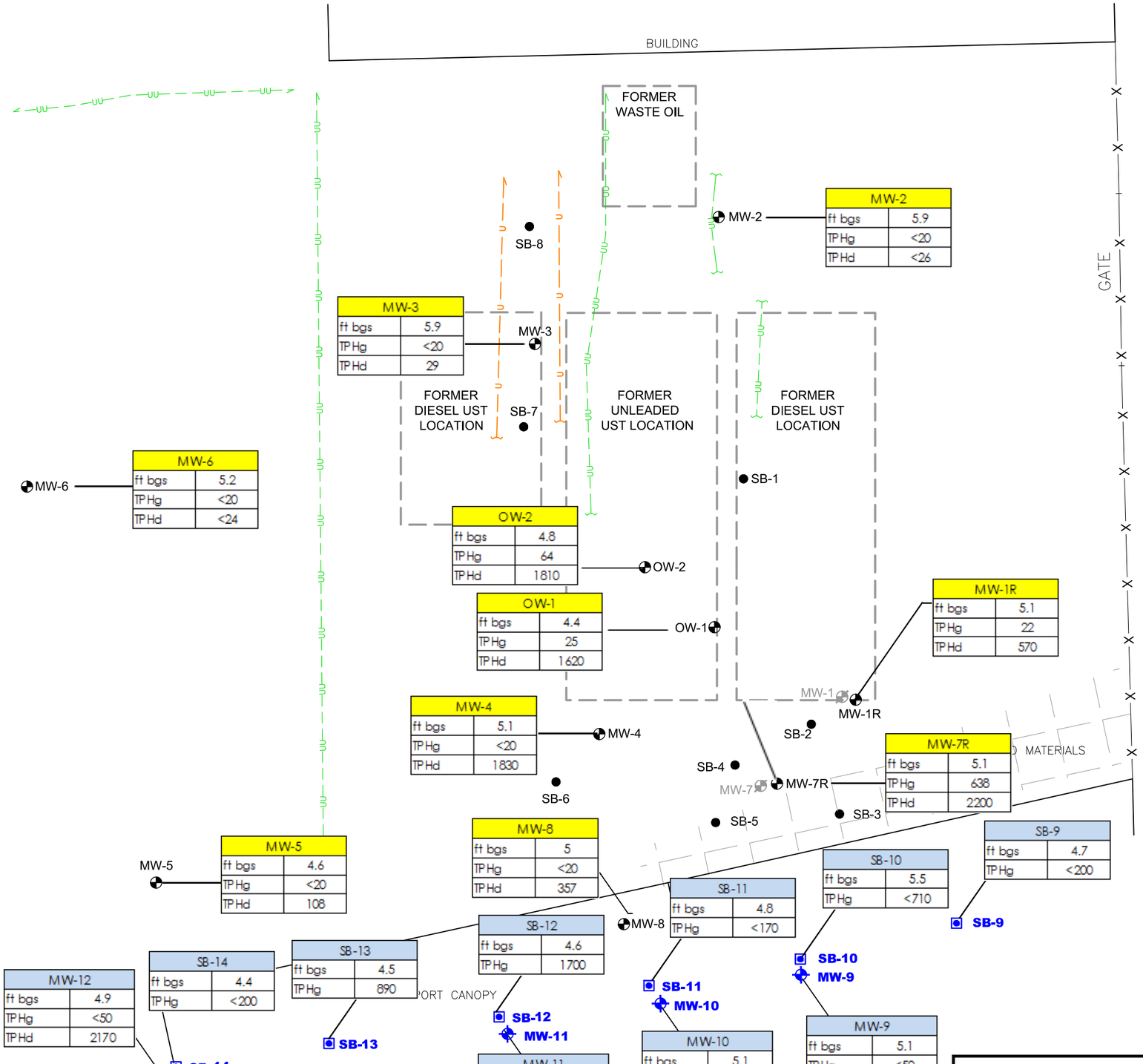
The highest concentrations of TPHg and TPHd in the shallow groundwater zone were found in the area between the former USTs and the western Site boundary at the unnamed drainage channel. Figure 6 shows the most recent results of the groundwater samples collected (2014 and 2015) (Figure 6). The results from borings SB-9 through SB-14 and MW-9 through MW-10 are the only locations representative of the shallow perched zone as the other wells are all screened at deeper depths.

Groundwater from monitoring wells has similar detected TPHd concentrations in 2014 (range of 29 to 2,200 µg/L; two non-detects) and 2015 (range of 382 to 3,600 µg/L; no non-detects) (Appendix B, Table B-1). TPHg also had similar detected concentrations, although more frequent non-detections. In 2015 TPHg was detected in one of four wells (120 µg/L) and in 2014 TPHg was detected in 4 of 10 wells ranging in concentration from 22 to 64 µg/L.

2.1.2 EXTENT OF PETROLEUM HYDROCARBONS IN SOIL

Historical analytical results, as presented in Appendix B, indicate that most of the petroleum hydrocarbon impacts to soil are in the vicinity of and downgradient of the former diesel and gasoline USTs with the greatest concentrations occurring between 5 and 8 ft bgs.

Two soil sampling periods, 2009 and 2015, were evaluated in this assessment. Soil sampling targeted soil depths that showed evidence of chemical impact based on field observations (visual or olfactory evidence, or elevated PID readings). Maximum detected concentrations were used as exposure point concentrations. Figure 7 shows the TPH concentrations measured in these samples. Soil samples from 2009 were collected at depths ranging from 4-17 ft bgs (Appendix B, Table B-5). Maximum TPHg followed no discernable depth pattern across the Site occurring from 4-16 ft bgs and at points in between. Maximum TPHd, however, did follow more of a pattern occurring at approximately 8 ft bgs (7.5-9 ft bgs range) in samples SB-1, SB-2, SB-3, SB-7, and SB-8 and occurring at 5 ft bgs (4.5-5 ft bgs range) in samples SB-4, SB-5, and SB-6. TPHd concentrations in the 2009 soil samples where maximum concentrations occurred at 5 ft bgs (averaging 2,213 mg/kg and ranging 9.7-12,000 mg/kg) were an order of magnitude higher than TPHd concentrations in the samples with maximum concentrations at 8 ft bgs (averaging 376mg/kg and ranging from 2.5-670 mg/kg) (Appendix B, Table B-5). Consistent with the groundwater flow direction (Figure 3) in 2015, TPHg was only detected in SB-12 and SB-13 which are downgradient of SB-4, SB-5, and SB-6 (Appendix B, Table B-2). TPHd was not analyzed in the 2015 soil samples (Figure 7; Appendix B, Table B-4).



LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- SHALLOW WELL 2015 (TD = 8 ft bgs)
- SOIL BORING LOCATION (2009)
- SOIL BORING LOCATION (2015)

ft bgs = feet below ground surface
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC. PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011; TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597
PHONE:(925) 941-1400 FAX:(925) 941-1401

FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

GROUNDWATER TPH CONCENTRATIONS IN 2014 AND 2015 (UG/L)

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
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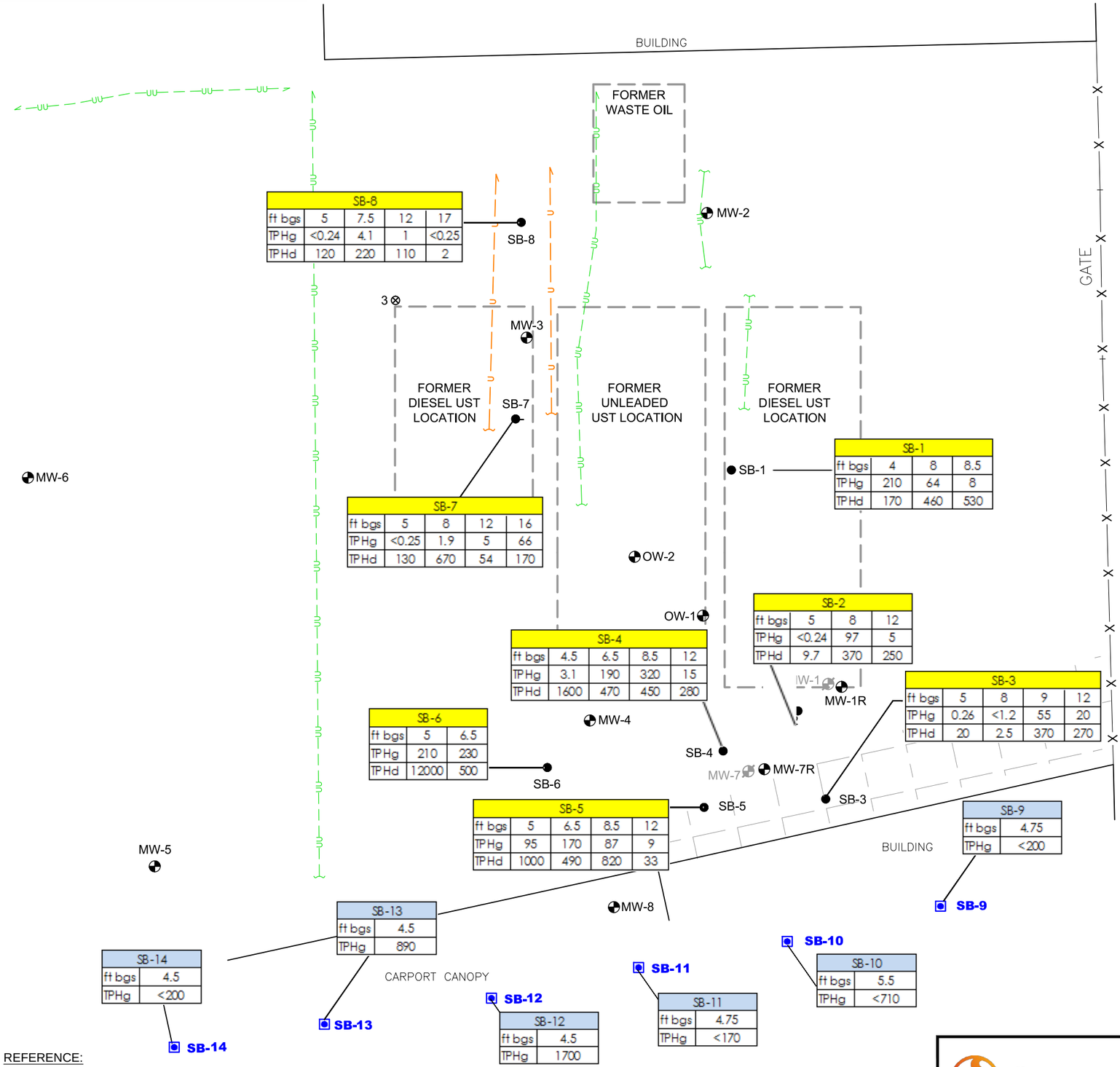
FILEPATH:M:\Penske\OAKLAND\185702640.200.0004\FIG 2_SITE PLAN_09-12-2013-STA.dwg|rroggasch|Jan 14, 2014 at 14:10|Layout: 11X17



LEGEND:

- UNDIFFERENTIATED NONMETALLIC UTILITY LINE
- UNDIFFERENTIATED METALLIC UTILITY LINE
- FENCE
- APPROXIMATE EXTENT OF FORMER TANK EXCAVATION
- EXISTING MONITORING WELL LOCATION
- ABANDONED MONITORING WELL LOCATION
- SOIL BORING LOCATION (2009)
- SOIL BORING LOCATION (2015)

0 20 40

APPROXIMATE SCALE IN FEET

REFERENCE:

UTILITIES BASED ON FIGURE PROVIDED BY NORCAL GEOPHYSICAL CONSULTANTS INC.
PLATE 1; DECEMBER 2008; BY G. RANDALL; JOB # 008-903.05

ALL SITE FEATURES AND WELL LOCATIONS, EXCEPT THE FORMER USTs, SURVEYED BY MID COAST ENGINEERS FEBRUARY AND APRIL 2011 JOB#10018X DATED APRIL 27, 2011;
TITLED "MONITORING WELL LOCATION MAP FOR PENSKE"
SITE COORDINATE SYSTEM: CA STATE PLANE; ZONE III; NAD 83 VERTICLE DATUM; NAVD 88

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FOR:
PENSKE
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

SOIL TPH CONCENTRATIONS IN 2009 AND 2015 (MG/KG)

FIGURE: 7

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
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3 Biological Characterization

A Site survey by a qualified biologist is a primary component of the scoping process and specifically the biological characterization. This section identifies and estimates the extent of coverage of all site-specific habitats and the species and communities that may be present. The following are the key aspects of the biological characterization for the scoping process:

1. Identification of each distinct habitat found on the site, and each off-site habitat which has the potential to be impacted by site-related contaminants.
2. Identification of the species and types of communities present or potentially present. Species are considered to be potentially present if they are known to have been present historically or if they are present or have historically been present in similar habitats in the ecoregion.
3. Identification of species considered to be essential to, or indicative of, the normal functioning of the ecosystem or community.
4. Identification of special status species and their habitats at or near the Site in addition to identification of the more common site-receptors.

3.1 Methods

Prior to the field characterization of site-specific habitats and the species and communities that may be present within and adjacent to the site, Greg Matuzak, Stantec Senior Wildlife Biologist, identified and mapped each distinct habitat occupying the Site and the surrounding area within one mile through the evaluation of high resolution aerial photography. The one-mile buffer is consistent with DTSC guidance (DTSC 1996) and represents the area included in this biological characterization and the potential extent of contaminant transport. The species expected to occupy each habitat were identified using the National Wetland Inventory (NWI) to document potential stream and wetland resources, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) to document the known locations of special status species previously identified, and the CDFW California Wildlife Habitat Relationships (CWHR) System to document habitat types and species associated with each mapped habitat type. The CWHR System is useful in predicting what species may inhabit specific habitat types.

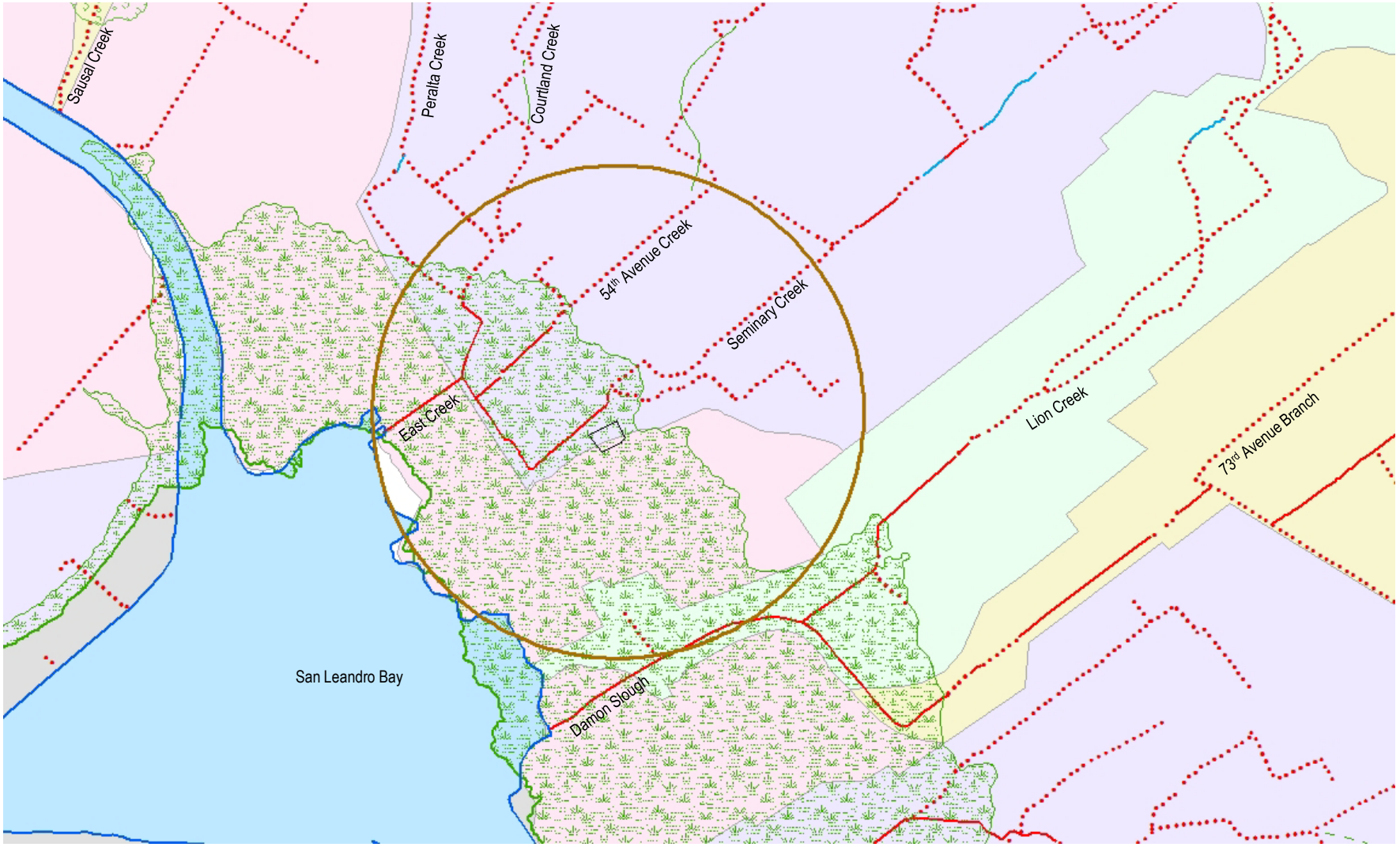
Potentially occurring special status species documented in the (CNDDB) include but are not limited to the following:

1) California species of concern;
2) California Native Plant Society Inventory of Rare and Endangered Plants;
3) State and Federal listed rare, threatened or endangered species; and
4) Species which are proposed or recommended for state or federal listing.

Site area watersheds and historical habitat data were also evaluated for the site to understand the history of the site in terms of its relationship to historical tidal marsh habitats and the historical shoreline of San Leandro Bay. A historical map of the Site area shows that in the 1800s the property was part of a tidal marsh (Figure 8; Fugro Consultants, Inc. and Oakland Museum of California. 2010).

Figure 9 identifies the results of the CNDDB search for special status species within one mile of the site. In addition, the location of wildlife areas, preserves, reserves, sanctuaries, parks, natural areas, conservation areas, and other protected areas within one mile of the site were also identified. The CNDDB occurrence report (Appendix C) for the species documented within one mile of the Site was reviewed to understand when and where specific species have been documented. Most of the special status plant and wildlife species documented within one mile of the Site are associated with San Leandro Bay and associated coastal salt marshes where species such as the California clapper rail (*Rallus longirostris obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), and salt-marsh harvest mouse (*Reithrodontomys raviventris*), among others, are known to occur. However, given that the connection between Seminary Creek, an engineered stream channel adjacent to the site, and San Leandro Bay is greater than 0.5 miles and the Site is located in a highly developed area that does not contain coastal salt marsh habitat, the potential of these species occurring within or directly adjacent to the site was considered nil to very low prior to conducting the field investigation. However, the American peregrine falcon (*Falco peregrinus anatum*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), and two other special status plant species (Loma Prieta hoita [*Hoita strobilina*] and woodland woolythreads [Monolopia gracilens]) have

been documented in the areas outside of coastal salt marsh habitats and San Leandro Bay (generally east of I-880) and, therefore, needed further field evaluation to determine their likelihood to inhabit the site or areas directly adjacent to the site.



Site – 725 Julie Ann Way Oakland, CA

0.5 mile surrounding Site

Current Shoreline

Current Bay

Historical Shoreline

Historical tidal marsh

Engineered channel

Underground culvert or storm drain

Peralta Creek Watershed

San Leandro Bay Watershed

Stantec

N

0 Approximate 1500'

Source: Fugro and Oakland Museum of California 2010. Creek & Watershed Map of Western Alameda County.

Figure 8. Site area watersheds and historical habitat.

Figure No.
9

Title

Known Occurences of Special Status Species within the Project Area (1 mi.)

Client/Project
Penske Truck Leasing
CNDDB Map
Scoping Ecological Risk Assessment

Project Location
Oakland, CA
Alameda County

0 1,200 2,400 Feet
1:15,000 (At original document size of 11x17)

Legend

- Project Area - 5.2 acres
- CNDDB Plant Occurence*
- CNDDB Wildlife Occurence*

** Special Status Species data: California Natural Diversity Database (CNDDB): Downloaded August 2016, from the California Department of Fish and Wildlife (CDFW).*

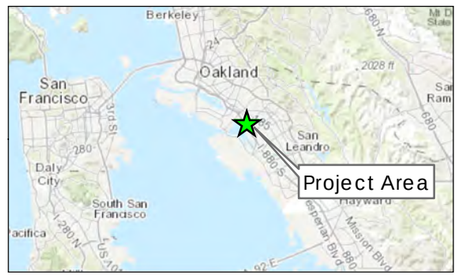
CNDDB OCCURRENCES*

Plant Species

1. Adobe sanicle
2. Alkali milk-vetch
3. Fragrant fritillary
4. Kellogg's horkelia
5. Loma Prieta hoita
6. Marin knotweed
7. Point Reyes salty bird's-beak
8. Robust spineflower
9. Saline clover
10. Woodland woollythreads

Wildlife Species

11. Alameda Island mole
12. Alameda song sparrow
13. Alameda whipsnake
14. American peregrine falcon
15. California black rail
16. California clapper rail
17. California tiger salamander
18. Longfin smelt
19. Northern Coastal Salt Marsh
20. Salt-marsh harvest mouse
21. Salt-marsh wandering shrew
22. Saltmarsh common yellowthroat



Notes

1. Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet

Stantec

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A field habitat map, NWI stream and wetland map, and species map were developed prior to the field investigation based on the results of the database searches and habitat mapping conducted. The field maps were used to identify sensitive habitats, species, streams, and wetlands that would be evaluated in the field as part of the biological characterization. Greg Matuzak, Stantec Senior Biologist, and Mike Vukman, Stantec Senior Environmental Scientist, conducted a site visit and field evaluation on August 25, 2016 to identify the relative extent of site-specific habitats and to identify whether any of the site-specific habitats or areas adjacent to the Site contain suitable habitat for special status species or other sensitive biological receptors. The entire Site was walked on foot and the site-specific habitats mapped on high resolution aerial imagery prior to the site visit were verified in the field. If the site-specific habitats in the field differed from the habitats mapped on high resolution aerial imagery prior to the site visit, the site-specific habitats were adjusted on a field map.

Specific attention was paid to downstream marine or estuarine habitats and whether they could be evaluated in terms of both the water and sediment components. Given that the marine and estuarine habitats within one mile of the Site are associated with the mouth of East Creek (East Creek Slough), Damon Slough, and San Pablo Bay 0.5 miles and greater from the Site, and given the difficulty in evaluating water and sediment components of those areas, it was determined that those areas could not be evaluated specifically in terms of water and sediment components on the day of the field investigation. A review of existing information regarding the water quality associated with East Creek (East Creek Slough), Damon Slough, and San Pablo was conducted instead and is discussed as part of the pathways assessment in Section 4.

Terrestrial and riverine habitats that warrant evaluation and characterization included the Site and Seminary Creek and unnamed drainage ditch directly adjacent to the Site. During the field investigation of the Site, dominant plant species, wildlife species, or signs of wildlife species activity, were noted on a field data collection form (Appendix D). The Site was visited in the AM and PM to see if different wildlife species occur within or adjacent to the Site based on the time of day and to observe tidal influence on the drainage ditch adjacent to the Site, if any. The AM survey occurred from 9:30 AM – 1:00 PM and the afternoon survey occurred from 3:30 – 7:00 PM. The site survey included a total of 5.2 acres as part of this investigation.

Water quality data was taken using a YSI meter to measure the pH, salinity (parts per thousand [ppt]), temperature (°C), and dissolved oxygen (DO; mg/L) at two locations within Seminary Creek near the Site. The water quality measurements were taken at the western and eastern ends of Seminary Creek within the site (see attached Site Wide Habitat Map for locations). Water quality data was taken at low tide (approximately 12:30 PM) and at high tide (approximately 7:00 PM) on the day of the field investigation. The purpose of the water quality measurements was to include baseline water quality measurements into the biological characterization of Seminary Creek and to determine the effect of the tides on water quality measurements and how they relate to the biological characterization of the creek and its connection to San Leandro and San Francisco Bays.

The unnamed drainage ditch along western edge of Site contained a small area of standing water on the day of the Site visit and was heavily lined with larger chunks of concrete and rocks embedded into the banks of the ditch down into the standing water (Appendix E). There is a one-way flow cast iron flap gate within the headwall where the drainage ditch culvert connects with the engineered channel (Seminary Creek). This flap gate is part of the Alameda County Flood Control District's floodplain management and is an engineering tidal control which inhibits water within Seminary Creek from flowing into the drainage ditch culvert. The presence of the flap gate prevents the drainage ditch from being completely tidally influenced. As such, the drainage ditch and Seminary Creek are infrequently in communication; water flowing from the ditch through the flap gate to Seminary Creek occurs only during storm events. Water within the drainage ditch at the time of the Site visit would have most likely come from direct precipitation and impervious surface runoff from the surrounding developed areas.

3.2 Onsite Biological Characterization

A site wide habitat map was developed as part of the ecological screening process based on the results of the field investigation conducted. The major habitats within the Site are displayed on high resolution aerial imagery (equivalent to a USGS quadrangle 1:25000 map) and three major habitat types as defined by the CWHR System were mapped. They include 3.9 acres mapped as Urban (URB) habitat, 0.85 acres mapped as Barren (BAR) habitat, and 0.45 acres mapped as Riverine (RIV) habitat (Figure 10). The Site is located on the border of both the Peralta Creek and San Leandro Bay watersheds and is located within historically mapped tidal marsh and below the historic shoreline (Figure 8). Therefore, the Site has been constructed on

fill material that historically was part of the San Leandro Bay. Seminary Creek downstream to San Leandro Bay is an engineered channel while upstream of the Site, Seminary Creek goes underground within a culvert or storm drain and daylights in at least two locations higher up in the Peralta Creek watershed.

Figure No.
10

Title
Site-wide Habitat Map

Client/Project
Penske Truck Leasing
Habitat Map
Scoping Ecological Risk Assessment

Project Location
Oakland, CA
Alameda County

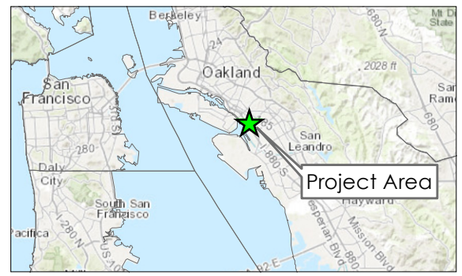
0 80 160 Feet
1:1,050 (At original document size of 11x17)

Legend

Project Area - 5.2 acres

Habitat Type

Barren (BAR) - 0.85 acre
Riverine (RIV) - 0.45 acre
Urban (URB) - 3.90 acres



Notes
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

Stantec

Given the results of the background research prior to the Site visit, the field investigation, and the site-wide habitat mapping, there is very little potential for special status species to occur within the developed area of the Site. The Site is characterized within the CWFR System as Urban habitat, which in this case includes commercial uses as part of an active commercial and recycling business (see attached photos in Appendix E). The area directly adjacent to the north of the Site is characterized as Urban habitat, Seminary Creek is a tidally influenced creek (see attached photos at high and low tides; Appendix E) and it flows west and then east, ultimately connecting with East Creek and San Leandro Bay. Along the western area of the site, an earthen-banked drainage ditch is located in a north and south direction and connects with Seminary Creek. However, flow from Seminary Creek into the drainage ditch culvert is prevented by a one-way balanced cast iron tidal flap gate. Only when the water level in Seminary Creek is below the elevation of the flap gate and there is sufficient water pressure within the drainage ditch to open the flap gate, will it enter into Seminary Creek.

Both Seminary Creek and the drainage ditch are considered Riverine habitat. Barren habitat characterized by soil, gravel, and a lack of vegetation is mapped directly adjacent to both sides of Seminary Creek.

There are no wildlife areas, preserves, reserves, sanctuaries, parks, natural areas, conservation areas, or other protected areas within or directly adjacent to the Site. Common species associated with these types of habitats include those that associate with the San Francisco and San Leandro Bays and the urbanized areas adjacent to such water bodies. In addition, two special status wildlife and two special status plant species have been previously documented within one mile of the site (see the attached CNDDB figure documenting special status species; Appendix C). The American peregrine falcon, Alameda whipsnake, and two special status plant species, the Loma Prieta hoita and woodland woollythreads, have been documented in the areas within one mile of the Site that are located east of Interstate Highway 880. In general, the other special status wildlife and plant species that have been previously documented within one mile of the site are located within or adjacent to San Leandro Bay and are discussed in more detail in Section 3.3 Offsite Biological Characterization below.

The CHWR System provides wildlife considerations for the habitats associated with the Site. Below is a description of each habitat type mapped within the Site and the expected wildlife species to occur in each habitat type. In addition, the dominant plant species and wildlife species documented during the field investigation are noted for each habitat type. Given the habitat types identified within the Site and directly adjacent to the Site, the American peregrine falcon, Alameda whipsnake, and two special status plant species, the Loma Prieta hoita and woodland woolythreads, would not be expected to occur given the lack of suitable habitat for those special status species documented within one mile of the site. Given the lack of nesting sites and low potential prey base for raptors, migratory birds, and Alameda whipsnakes, the foraging opportunities for such species within and directly adjacent to the Site are considered very low. In addition, whipsnakes are typically found in chaparral — northern coastal sage scrub and coastal sage (USFWS 2005), which is not available at or near the Site.

3.2.1 RIVERINE HABITAT

Seminary Creek is a tidally influenced and engineered stream channel directly adjacent to the Site and, therefore, was mapped as Riverine Habitat (RIV) within the CWHR System. The day of the field investigation, low tide was estimated to be 2.3 ft at 12:30 PM and high tide was estimated to be 6.9 ft at 7:02 PM downstream in San Leandro Bay. The change in the tides had a significant influence on Seminary Creek directly adjacent to the Site given that the eastern end of the channel was either dry or contained less than 4 inches of water at low tide and during high tide contained an estimated two ft of water. Along the western end adjacent to the Site, Seminary Creek contained approximately one foot of water at low tide and approximately three ft of water at high tide (based on the elevation change at the concrete box culvert going under Coliseum Way – see attached photos in Appendix E). Water quality data collected within Seminary Creek on the day of the Site visit are provided in Table 3. As stated previously, the purpose of the baseline water quality measurements for Seminary Creek was to determine the effect of the tides on water quality measurements and how they may relate to the biological characterization of the creek. Given the fluctuating and higher salinity levels, the water of Seminary Creek ranges from estuarine to marine.

Table 3. Seminary Creek Field Water Quality Measurements

Analyte	Seminary Creek East		Seminary Creek West	
	Low Tide	High Tide	Low Tide	High Tide
pH	7.71	7.93	7.92	8.07
Salinity (ppt)	4.6	27.9	24.0	29.5
Temperature (°C)	19.6	22.9	24.0	22.5
Dissolved Oxygen (mg/L)	0.76	7.56	11.20	9.31

Based on the CWHR System, riverine habitats provide habitat for gulls, terns, and osprey where open water provides the prey base for such species. The common species that associate with the banks of such habitats include waterfowl, herons, shorebirds, belted kingfishers, and American dipper. However, riverine habitat associated with Seminary Creek and the drainage ditch provides little habitat for such common wildlife species given the restricted size of both the creek and drainage ditch and the lack of vegetation for cover, lack of a prey base within the tidally fluctuating Seminary Creek channel, maintenance of the engineered stream/drainage ditch channels, and overall developed nature of the area. Additionally, Seminary Creek itself provides low quality habitat for aquatic species since:

- The creek goes underground directly east of the site;
- The creek is tidally influenced and as such, at low tide, the channel contains little to no water; and
- At low tide, the creek channel appears to contain large amounts of sediment that may be suitable for some urban-adapted invertebrate species, but is generally lacking for fish and other aquatic species especially given the brackish nature of the stream within the survey area.

Seminary creek is dominated with coastal gumweed (*Grindelia stricta*) along its banks with small areas of pickleweed (*Salicornia* sp.) along the lower banks. The upper bank of Seminary Creek includes Italian rye grass (*Festuca perennis*) and other non-native annual grassland species such as *Avena* sp. and *Bromus* sp. An area of prickly pear cactus (*Opuntia* sp.) was also documented along the northern top bank of the creek. An unidentified matted grass species was also noted at the top of the stream bank.

The presence of a one-way flap gate where the drainage ditch connects with Seminary Creek, prevents tidal flow into the drainage ditch. Only when there is a sufficient change in water pressure/volume within the drainage ditch (i.e. after a significant rain event) will the flap gate open and allow water to enter Seminary Creek. There was a small area of standing water along the southern end of the drainage ditch during the Site visit; however, some wetland associated plants have colonized the drainage ditch, especially along the southern end of the ditch within the Site. The dominant wetland species associated with the drainage ditch include beardgrass (*Polypogon* sp.), rush (*Juncus* sp.), bulrush (*Bolboscheonus* sp.), and bindweed (*Convolvulus* sp.).

There is a very low potential for special status species to occur within the Riverine habitats associated with the Site given the developed nature of the drainage ditch and given that Seminary Creek is a narrow, engineered creek. Upstream from the Site, the creek goes underground under existing railroad tracks (see attached photos). The drainage ditch provides more cover than Seminary Creek given the presence of wetland vegetation within the drainage ditch; however, given its connection to the north and south appear to be managed and at the time of the field investigation closed off in both directions, the drainage ditch would not provide suitable habitat for fish species and other sensitive aquatic species. The drainage ditch could provide some marginal habitat for invertebrate species. It should be noted that during the August 2016 biological survey, no bird or mammal species (or associated tracks) were observed within the drainage ditch.

Though Seminary Creek is tidally influenced and the edges of the creek contain sparse wetland associated vegetation along the lower banks, the channel does not contain suitable habitat for steelhead or other salmonid species. Given that the creek goes underground just east of the site, it would not be conducive to migratory fish and given the lack of cover and brackish nature of Seminary Creek in the survey area, it would not provide suitable habitat for other aquatic organisms and only potentially provide disturbed and substandard habitat for invertebrates. No aquatic-dependent birds or birds associated coastal salt marsh habitat were observed in the water or along the banks of Seminary Creek.

3.2.2 BARREN HABITAT

Based on the CWHR System, areas mapped as Barren Habitat (BAR) generally can provide habitat for swallows, bats, plovers, stilts, avocets, cormorants, several gulls and terns, nighthawks, and poorwills. However, the Barren habitat associated with the adjacent uplands to Seminary Creek provides little habitat for common wildlife species given the lack of vegetation, maintenance of the uplands for access to the engineered stream channel, and overall development within and adjacent to the site. The areas mapped as Barren habitat contain bare soil and gravel and appear to be developed specifically for maintenance access to the engineered Seminary Creek channel and potentially the rail line directly east of the site. The only wildlife species documented within this habitat during the field investigation were the following: American crow, house sparrow, and an unknown rodent species that appeared to be a small mouse under a rock along the upper bank of the creek near the eastern water quality survey location. The upland area contained little to no vegetation except for some very sparse non-native annual grassland species such as *Avena* sp. and *Bromus* sp. The Barren habitat also included a gum tree (*Eucalyptus* sp.) and two unknown non-native tree species.

There is no potential for special status species to occur within the areas mapped as Barren habitat given the sparse, non-native vegetation and the disturbance by human and maintenance activities that occur in this area. Though the Barren habitat is directly adjacent to Seminary Creek, the area mapped as Barren habitat is managed for access to the engineered Seminary Creek channel and potentially the rail line to the east of the site. In addition, the Barren habitat is littered with garbage and appears to be inhabited given the presence of tents and other human debris. As a result, the barren habitat along Seminary Creek, as shown in Figure 10, is highly unlikely to support bird or mammal habitat for the area given the highly disturbed nature of the creek itself as well as the industrial and commercial influence of the overall area.

3.2.3 URBAN HABITAT

Based on the CWHR System, Urban Habitat (URB) that characterizes most of the site itself generally contains common, urbanized species such as rock dove, house sparrow, and starlings. The Urban habitat mapped within the site does not contain any vegetation except for two small coast redwood trees in the southeast area of the site. The site was previously an industrial site and can now best be characterized as an active commercial and recycling facility with cars, trucks, and personnel entering, leaving, and working throughout the developed site. There is no landscaping associated with the site. There were only two wildlife species identified during the surveys within this habitat type and they included the American crow and turkey vulture, both of which were flying over the site during the late afternoon.

There is no potential for special status species to occur within the areas mapped as Urban habitat given the complete lack of vegetation and active commercial activities that occur within the Urban mapped areas. Though some raptor species may perch adjacent to the Urban habitat or fly over there is no prey base within this habitat site for raptors or any other special status species, including migratory birds. Therefore, the Site does not contain suitable habitat for the peregrine falcon, Alameda whipsnake, or other special status wildlife and plant species identified within the CNDDB within one mile of the Site.

3.3 Offsite Biological Characterization

Offsite habitats, and the associated receptors that may be affected by site-related contamination, whether they are coming from upstream of the Site or from the site itself, are also important and warrant evaluation as part of this biological characterization. For example, the marine and coastal salt marsh habitats that occur within San Leandro Bay and its shoreline contain suitable habitat for several special status species, including state and federally listed endangered species. The attached CNDDB figure (Appendix C), which includes special status species previously documented within one mile of the Site, includes a total of 22 plant and wildlife species with 17 of them occurring within and directly adjacent to San Leandro Bay located 0.5 miles or greater from the site. The biological connection and pathway between the site and sensitive offsite biological resources within one mile of the Site, which would include San Leandro Bay and its associated coastal salt marsh habitat as well as East Creek/Slough, would be through an existing waterway given the urbanized and developed nature of the area between the site and those areas. Seminary Creek is the existing waterway and pathway for any contamination coming from upstream (east) of the site or from the site itself given it heads directly west towards the bay and then east until it reaches East Creek, East Creek Slough, and San Leandro Bay. Therefore, biological receptors that associate with San Leandro Bay and associated coastal salt marsh habitats within 1 mile of the site

would be most susceptible to any contamination coming from inland areas through the existing waterways such as Seminary Creek and East Creek.

Based on Figure 9, the California clapper rail, a state and federally listed endangered species, is known to occur within the coastal salt marsh habitat between East Creek/Slough and Lion Creek/Damon Slough and within Arrowhead Marsh. Marin knotweed and Point Reyes salty bird's-beak, both sensitive non-listed plant species, have been identified previously in the coastal salt marsh areas along this same stretch of San Leandro Bay between East Creek/Slough and Lion Creek/Damon Slough. Longfin smelt, a state listed threatened species and candidate for federal listing, is known in the San Francisco Bay and is mapped within San Leandro Bay as a species that inhabits both the bay seawater as well as adjacent estuaries. Other special status species within 1 mile of the site include the California black rail (state listed threatened species) and salt marsh harvest mouse (state and federally listed endangered species), among others, which have been documented just under one mile from the Site associated with Arrowhead Marsh in San Leandro Bay. The coastal salt marsh and San Leandro Bay shoreline is managed by the East Bay Regional Parks District for the conservation of such habitats and the common and special status species that inhabit them and therefore, is considered a conservation area. There are no other wildlife areas, preserves, reserves, sanctuaries, natural areas, conservation areas, or other protected areas within one mile of the Site. Coliseum Gardens, located adjacent to Lion Creek upstream of Damon Slough, and Greenman Field, located upstream of where Lion Creek goes underground, are City of Oakland parks located within one mile of the Site, but are not designated for wildlife or habitat conservation.

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4 Pathway Assessment

This Section evaluates the potential for there to be pathways of exposure of species of communities identified in Section 3 to the COPECs identified in Section 2 and integrates and illustrates this potential through the development of a conceptual site model (CSM).

4.1 Potential Exposure Pathways

The assessment of potential exposure pathways determines whether they may be exposure through the routes of dermal contact with contaminated water or soil, ingestion of contaminated food, water, or soil, and inhalation. Typically, exposure via oral ingestion is the dominant means of exposure for wildlife based on the types of receptors exposed and the types of chemicals present (USEPA 1993). A tabular summary of the exposure pathway analysis for each habitat type is provided in Table 4 and a CSM is provided in Figure 11. Primary uptake routes represent complete exposure pathways, while secondary exposure routes represent potentially complete but insignificant or incomplete exposure pathways. Supporting information for these pathways and the CSM are discussed below.

4.1.1 INCOMPLETE EXPOSURE PATHWAYS

This assessment considers exposure pathways to terrestrial invertebrate and vertebrate receptors to be incomplete because:

- Approximately 99 percent of the Site is covered with pavement or buildings. Therefore:
    - Above ground terrestrial habitats are limited or non-existent
    - The migration pathway to air is blocked because the Site has this impervious cap
- Poor quality habitat
    - Below ground habitat is non-native compacted soil and has considerable amounts of fill debris present that are not suitable to support terrestrial invertebrate communities.
    - The portion of the Site adjacent to the channels may be tidally influenced; thus the Site could be impacted by salt intrusion.
- Invertebrates and wildlife that are in the vicinity of the site are transient. Thus, any potential Site exposure is minimal.

This assessment considers exposure pathways to terrestrial and aquatic-dependent upper trophic level receptors to be incomplete because:

- Poor quality habitat at both the drainage ditch and Seminary Creek
    - The barren habitat along Seminary creek is highly unlikely to adequately support bird or mammal populations for the area given the highly disturbed nature of the creek, overall lack of native vegetation/sufficient vegetation for cover, presence of gravelly soil for regular maintenance access, as well as the industrial (including rail line directly east of the site) and commercial influence of the overall area.
    - The marginal riverine habitat of Seminary Creek is unlikely to support adequate invertebrate prey base for upper trophic level receptors (i.e., birds and mammals) to spend significant time foraging within the tidally fluctuating Seminary Creek channel.
    - The marginal riverine habitat of the drainage ditch is highly unlikely to adequately support bird or mammal populations for the area given the restricted size of drainage ditch, the lack of adequate native vegetation for cover, and overall developed nature of the area.
- The presence of a one-way flap gate where the drainage ditch connects with Seminary Creek, prevents tidal flow into the drainage ditch. Only when there is a sufficient change in water pressure/volume within the drainage ditch (i.e. after a significant rain event) will the flap gate potentially open and allow water to enter Seminary Creek. As a result, off-site migration of transport of COPECs from the drainage ditch to Seminary Creek is potentially complete but insignificant.

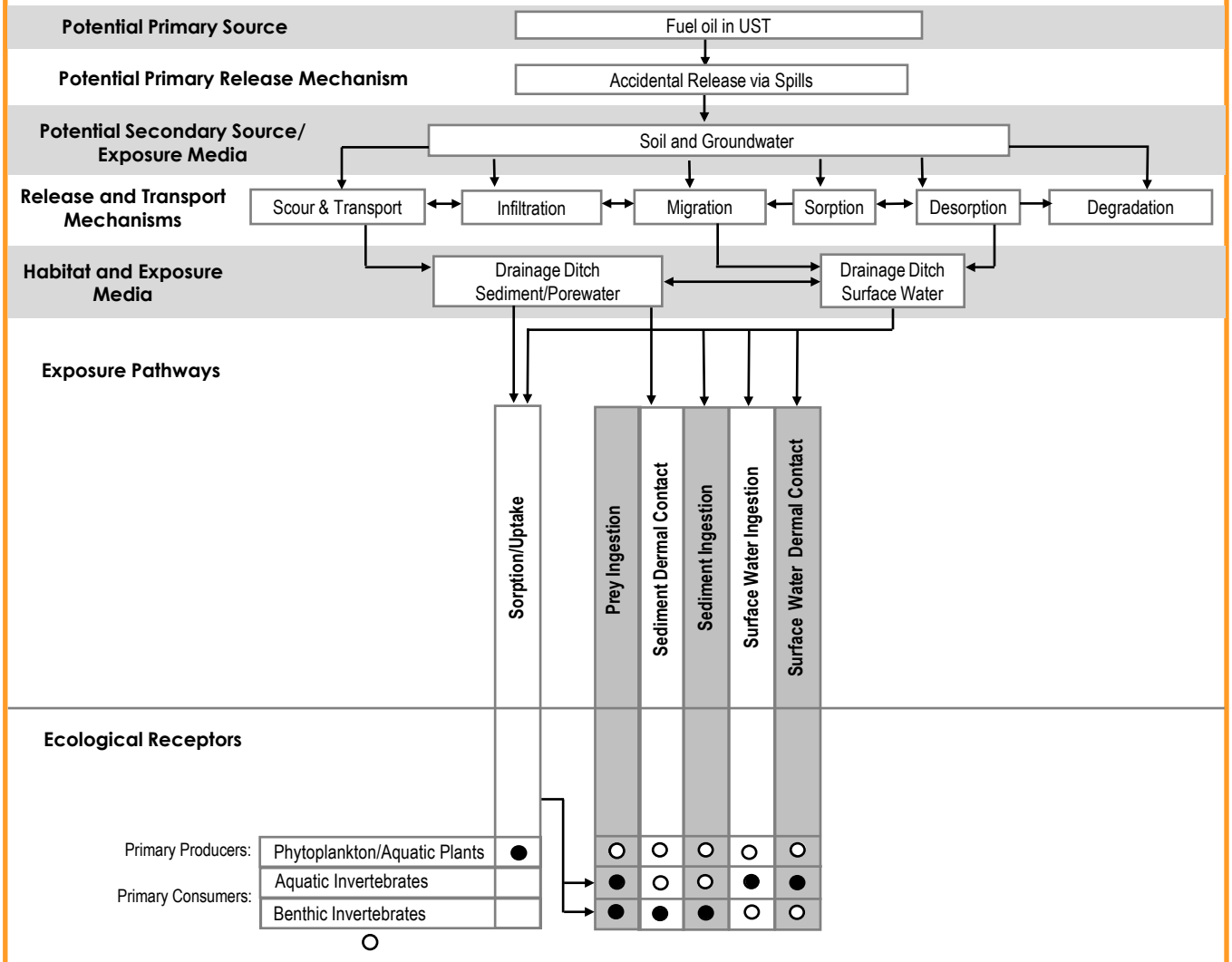
- Based on Figure 3 of this document and Figure 3 of the Soil and Groundwater Investigation and Groundwater Monitoring Report (Stantec 2009b), groundwater flows generally towards the drainage ditch. As a result, it is assumed that any off-site migration of groundwater COPECs is towards the ditch and not towards Seminary Creek.
- Given the main COPECs present at the site are TPH, the bioaccumulation potential for petroleum-related contaminants is of minimal concern given that there will be little to no exposure through food-chain uptake (i.e., ingestion of invertebrates in the ditch or creek) due to the fact that aquatic-dependent birds were not observed during the site visit and they are assumed to be around transiently given the highly disturbed nature of the site and surrounding area.

4.1.2 POTENTIALLY COMPLETE EXPOSURE PATHWAYS

Off-site migration of site soil and groundwater COPECs to drainage ditch surface water via earthen banks is a potentially complete exposure pathway. Thus, aquatic invertebrates, phytoplankton, aquatic plants, and benthic invertebrates potentially inhabiting the drainage channel are potentially exposed communities. Due to the highly disturbed nature of the ditch and restricted size, it is highly unlike that this habitat would adequately support bird or mammal populations beyond a transient nature. Therefore, this aquatic habitat adjacent to the Site likely only supports aquatic primary producers (phyotoplankton and aquatic plants), and aquatic primary consumers (aquatic invertebrates and benthic invertebrates) since at the time of the Site visit it showed little standing water present; had extensive vegetation present; is not a natural water body; and, was blocked at both ends. The presence of vascular plant growth indicates that these species are not adversely affected by potential off-site migration of contaminants.

Table 4. Exposure Pathways Analysis

Habitat	COPEC	Contaminated Media	Food Web Exposure	Potential Exposure Pathway	Complete Exposure Pathway
Drainage Ditch (Riverine)	TPHg	groundwater	Aquatic Invertebrates	Direct Contact and ingestion	No
	TPHd	groundwater	Aquatic Invertebrates	Direct Contact and ingestion	No
	TPHg	surface water	Aquatic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	Yes
	TPHd	surface water	Aquatic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	Yes
	TPHg	surface water	Aquatic Plants	Direct Contact, ingestion	Yes
	TPHd	surface water	Aquatic Plants	Direct Contact, ingestion	Yes
	TPHg	sediment	Benthic Invertebrates	Direct Contact ingestion, and Ingestion of Prey	Yes
	TPHd	sediment	Benthic Invertebrates	Direct Contact ingestion, and Ingestion of Prey	Yes
	TPHg	sediment	Riverine Invertivores	Direct Contact and Ingestion of Prey	No
	TPHd	sediment	Riverine Invertivores	Direct Contact and Ingestion of Prey	No
Seminary Creek (Riverine)	TPHg	groundwater	Aquatic Invertebrates	Direct Contact and ingestion	No
	TPHd	groundwater	Aquatic Invertebrates	Direct Contact and ingestion	No
	TPHg	surface water	Aquatic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	No
	TPHd	surface water	Aquatic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	No
	TPHg	sediment	Benthic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	No
	TPHd	sediment	Benthic Invertebrates	Direct Contact, ingestion, and Ingestion of Prey	No
	TPHg	sediment	Riverine Invertivores	Direct Contact and Ingestion of Prey	No
	TPHd	sediment	Riverine Invertivores	Direct Contact and Ingestion of Prey	No
Developed Upland (Urban)	TPHg	soil	Terrestrial Invertebrates	Direct contact and ingestion	No
	TPHd	soil	Terrestrial Invertebrates	Direct contact and ingestion	No
Barren	TPHg	soil	Terrestrial Invertebrates	Direct contact and ingestion	No
	TPHd	soil	Terrestrial Invertebrates	Direct contact and ingestion	No
	TPHg	Terrestrial Invertebrates	Terrestrial Invertivores	Direct Contact, ingestion and Ingestion of Prey	No
	TPHd	Terrestrial Invertebrates	Terrestrial Invertivores	Direct Contact, ingestion and Ingestion of Prey	No



● Primary Uptake Route ○ Secondary Uptake Route

Figure 11. Conceptual Site Model.

4.1.3 AREA IMPACTS TO WATER QUALITY

Since TPH is the primary COPEC, it is useful to understand the TPH contamination in general in urban environments and specifically around the Site. Hydrocarbons are some of the most ubiquitous chemicals found in urban environments contributing to stream pollution and direct impacts to fish and invertebrates (Paul and Meyer 2001). Seminary Creek sediment, adjacent to the site, when sampled on behalf of Alameda County one mile upstream of the site was found to have oil sheen present (Gunther et al., 2001) and detected concentrations of chemicals of concern including: total polycyclic aromatic hydrocarbons (PAHs), total polychlorinated biphenyls (PCBs), and mercury.

East Creek, the discharge point for Seminary Creek to San Leandro Bay has not been listed by the State of California as an impaired water body (Clean Water Act Section 303(d)). However, San Leandro Bay and the Damon Slough which discharges to it and is adjacent to the site are 303(d) listed (Figure 8). Damon slough was specifically listed for trash because of urban runoff, storm sewers and illegal dumping. San Leandro Bay was listed for the pesticide pollutants (chlordane and dieldrin), metals (lead, mercury, and zinc), and other organics (dioxins, furans and PAHs) as well as invasive species (Gunther et al., 2001). Given the highly developed nature of the entire area, contributing sources to any chemicals of concern that have been detected in Seminary Creek sediment are not solely from the site but almost certainly include several surrounding commercial and industrial facilities including upstream sources, as well as stormwater runoff from roads.

4.2 Preliminary Screening Assessment

Site data reporting and communications with the ACDEH have included a comparison to Environmental Screening Levels (ESLs) established by the RWQCB. Concentrations in excess of one or more screening levels do not mean that a significant risk exists, only that additional evaluation may be needed. This section summarizes a comparison of the soil and groundwater data evaluated to the most current ESLs (RWQCB 2016a), the comparison of which is provided in Appendix B.

There are no soil ESLs developed specifically for ecological receptors. Additionally, no complete exposure pathways exist for the site between soil COPECs and ecological receptors (Table 4) since it is highly unlikely for birds and mammals to spend any significant amount of time at the site or in drainage ditch due to the disturbed nature of the area. Therefore, the most appropriate ESLs to evaluate off-site migration of soil COPECs are those established for soil leaching to groundwater that is not a drinking water source (Table 5). These soil leaching to groundwater ESLs (for groundwater that is not a drinking water source) represent a back-calculated level based on target groundwater screening levels for each groundwater use (RWQCB 2016b). For the non-drinking water soil leaching to groundwater ESL, this would be calculated from the lowest (i.e., the most conservative) of the following: ecological aquatic habitat screening level, gross contamination water screening level, groundwater vapor intrusion screening level, and non-drinking water odor nuisance screening level. Although there is some uncertainty in using these ESLs for an ecological screening assessment for aquatic receptors given that some human health-applicable ESLs are considered, RWQCB notes that these soil leaching to groundwater ESLs are protective of groundwater discharge to an aquatic habitat (RWQCB 2016b) and include a conservative (assuming highly permeable sand layers surrounding any contaminated layer) a dilution-attenuation factor. As a result, use of these soil leaching to groundwater ESLs will likely over-estimate risk to aquatic receptors.

Table 5. ESLs for Soil

Analyte	Soil ESLs Non-drinking water
TPH (mg/kg)	
TPHg	3,400
TPHd	3,600
VOCs (mg/kg)	
Acetone	0.5
Benzene	0.049
Ethylbenzene	1.4
Toluene	9.3
Xylenes	11
Methyl tertiary butyl ether (MTBE)	0.84
SVOCs (mg/kg)	
Benzo(a)anthracene	12
Benzo(a)pyrene	125
Benzo(b)fluoranthene	639
Benzo(g,h,i)perylene	27
Benzo(k)fluoranthene	37
Chrysene	23
Fluoranthene	60
Fluorene	8.9
Indeno(1,2,3- cd)pyrene	70
1-Methylnaphthalene*	0.25
Naphthalene	3.9
Phenanthrene	11
Pyrene	85

Note:
There is no ESL for 1-Methylnaphthalene and the ESL for 2-Methylnaphthalene was used as a substitute.

Of the analytes reported in 2009 soil samples, TPHd exceeded its respective ESL for soil leaching concerns at 5 ft bgs for one location (SB-6) at a concentration of 12,000 mg/kg. Additionally, benzene exceeded its respective ESL for soil leaching concerns at 6.5 ft bgs (4.8 mg/kg) and at 8.5 ft bgs (2.8 mg/kg). While these benzene soil concentrations exceeded the benzene soil ESL by 96 and 56 times, respectively, benzene did not exceed its groundwater ESL in shallow soil for either 2009 or 2015. The volatile nature of benzene suggests that concentrations of benzene in soil will likely dissipate faster than will be or has been found in groundwater; no detected concentrations of benzene exceeded the respective groundwater ESL. It should also be noted that benzene was only detected in 3 out of 28 total soil samples (10% detection frequency regardless of depth or sampling date) indicating that risk to ecological receptors is likely of less concern due to the infrequency of detection. None of the analytes reported in 2015 soil samples exceeded their respective ESLs for soil leaching concerns with the exception of 1-Methylnaphthalene where the 2015 soil sample from MW-10 contained 0.366 mg/kg, thus exceeding the ESL by a factor of 1.5. However, given that this ESL is intended for 2-Methylnaphthalene, the modest level of exceedance in only one of four samples, and the fact that sampling was not interval representative, but rather targeted to areas of discrete contamination, leaching to groundwater is not a significant concern.

RWQCB has developed groundwater ESLs for both freshwater and saltwater environments that are specifically developed for aquatic habitat protection and thus are more relevant for the purposes of this assessment. A summary of these groundwater ESLs is presented in Table 6. Given that TDS and field measures show some degree of salinity, both sets of GW ESLs were considered for comparison to Site groundwater concentrations, yet the lowest of the freshwater and saltwater values were conservatively used in this preliminary screening.

Table 6. ESLs for Groundwater

Analyte	Groundwater ESLs for Aquatic Habitat Goals		
	Fresh Water Ecotox	Saltwater Ecotox	Lowest Groundwater ESL
TPH (µg/L)			
TPHg	440	3,700	440
TPHd	640	640	640
VOCs (µg/L)			
Acetone	1,500	--	1,500
Benzene	46	350	46
Ethylbenzene	290	43	43
Toluene	130	2,500	130
Xylenes	--	100	100
Methyl tertiary butyl ether (MTBE)	66,000	8,000	8,000
Tert-butyl alcohol	18,000	--	18,000
Trichloroethene (TCE)	360	200	200
SVOCs (µg/L)			
Acenaphthene	23	40	23
Fluorene	3.9	30	3.9
1-Methylnaphthalene	2.1	30	2.1
Naphthalene	24	235	24
Phenanthrene	6.3	4.6	4.6
Pyrene	2	--	2

Note:
There is no ESL for 1-Methylnaphthalene, therefore the ESL for 2-Methylnaphthalene was used as a substitute.

For groundwater, there were 6 exceedances of the groundwater ESLs for TPHg over the period evaluated (2009 to 2015). Two of these were the I samples taken in 2015 soil borings SB-12 and SB-13, at 1,700 ug/L and 800 ug/L, respectively. Incidentally, these did not exceed the saltwater GW ESL. TPHd had the most frequent exceedances – 32 over the period evaluated, and included two samples from 2015 monitoring wells MW-10 and MW-12 at 3,600 ug/L and 2,170 ug/L, respectively. These two samples from 2015 on the edge of the drainage ditch suggest that migration of contaminants in groundwater to the ditch could be possible.

The only other groundwater ESL exceedances noted were one occurrence each for fluorene (4.2 ug/L) and two occurrences (2.7 and 8.2 ug/L) of 1-Methylnaphthalene (as compared to the ESL for 2-Methylnaphthalene) both from 2015. The single fluorene concentration in groundwater that only exceeded its respective groundwater ESL was only by a factor of 1.1. The uncertainty surrounding use of a surrogate ESL for 1-Methylnaphthalene leaves this finding highly uncertain. It should also be noted that few exceedances of ESLs for chemical indicators of TPH mixtures (i.e., VOCs and PAHs) supports idea that TPH-related risk may be over-estimated based on TPH ESL exceedances alone.

4.3 Summary of Qualitative Findings

The information collected as part of this assessment indicates the following:

- The historic and current industrial use of this Site precludes on-site ecological exposures both from the lack of adequate habitat and the lack of terrestrial receptors in the vicinity of the Site.
- Ecological exposure could potentially be occurring if TPH contaminants in perched groundwater are migrating into the drainage ditch along the western border of the property. However, there is no visual evidence indicating that such a migration is occurring.
- Benzene in soil was detected at concentrations which exceed the soil ESL, but not at concentrations which exceed its respective groundwater ESL. Also, benzene was only detected in 3 out of 28 total soil samples (10% detection frequency regardless of depth or sampling date) indicating that risk to ecological receptors is likely of less concern due to the infrequency of

detection. VOCs such as benzene are not anticipated to persist in soil, groundwater, or surface water (should benzene reach the drainage ditch through groundwater migration), due to their highly volatile nature, thereby reducing potential ecological exposure and hazard.

- Although in the most recent sampling (2015) concentrations of TPHd at two locations (MW-10 and MWW-12) exceed groundwater ESL, which is intended to be protective of aquatic habitats, use of ESLs are highly conservative in that the screening criterion represents a direct-exposure screening level for aquatic biota and does not consider dilution effects between groundwater and surface water. Thus, the concentration of TPHd in the drainage ditch surface water would be far less due to dilution as the groundwater percolates through to surface water, resulting in a lower potential hazard to any potential lower trophic level receptors (i.e., invertebrates).
- Percolation of GW through soil and sediment of earthen bank of drainage ditch will provide attenuation and reduction of concentrations of COPECs before reaching surface water of the ditch. As a result, any potential TPH or TPH chemical indicators (i.e., VOCs or PAHs) that possibly reach the surface water and sediment of the drainage ditch represent lower concentrations, weathered, broken down fuel product, and are unlikely to remain due to volatilization over time. The fact that minimal concentrations of TPH chemical indicators that exceeded their respective ESLs further supports this.
- The drainage ditch is ecologically limited to only possibly supporting the lowest trophic levels, with aquatic and benthic invertebrates determined to be the most likely aquatic receptors. Due to the presence of the tidal flap gate that only opens with high water pressure/volume within the ditch, this drainage ditch is not a continual source of discharge into Seminary Creek, and thus other water bodies.
- Given the highly developed nature of the entire area, contributing sources to any chemicals of concern that have been detected in Seminary Creek sediment are not solely from the site but almost certainly include several surrounding commercial and industrial facilities including upstream sources, as well as stormwater runoff from roads.
- Given the limited likelihood for ecological resources to be present, the drainage ditch has potential ecological value for only the lowest trophic levels of species adapted to urban aquatic environments, and the footprint of the ditch area is so limited, thus, quantifiable ecological impacts are unlikely.

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Appendices

APPENDIX A – HISTORICAL AERIAL PHOTOGRAPHS

APPENDIX B – SITE ANALYTICAL DATA

APPENDIX C – CNDDB OCCURRENCE REPORT

APPENDIX D – FIELD FORM

APPENDIX E – FIELD SURVEY PHOTOS

APPENDIX A.
HISTORICAL AERIAL PHOTOGRAPHS

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, CA 94621

Inquiry Number: 2401798.5
January 20, 2009

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography January 20, 2009

Target Property:

725 Julie Ann Way

Oakland, CA 94621

Year	***Scale***	***Details***	***Source***
1939	Aerial Photograph. Scale: 1"=555'	Flight Year: 1939	Fairchild
1946	Aerial Photograph. Scale: 1"=655'	Flight Year: 1946	Jack Ammann
1958	Aerial Photograph. Scale: 1"=555'	Flight Year: 1958	Cartwright
1965	Aerial Photograph. Scale: 1"=333'	Flight Year: 1965	Cartwright
1982	Aerial Photograph. Scale: 1"=690'	Flight Year: 1982	USGS
1993	Aerial Photograph. Scale: 1"=666'	Flight Year: 1993	USGS
1998	Aerial Photograph. Scale: 1"=666'	Flight Year: 1998	USGS
2005	Aerial Photograph. Scale: 1"=484'	Flight Year: 2005	EDR


Approximate
Site Location
INQUIRY #: 2401798.5
YEAR: 1939
= 555'
N


Approximate
Site Location
INQUIRY #: 2401798.5
YEAR: 1946
= 655'
N


Approximate
Site Location
INQUIRY #: 2401798.5
YEAR: 1958
= 555'
N


SITE
INQUIRY #: 2401798.5
YEAR: 1965
= 333'
N


SITE
INQUIRY #: 2401798.5
YEAR: 1982
= 690'
N


SITE
INQUIRY #: 2401798.5
YEAR: 1993
= 666'
N

INQUIRY #: 2401798.5

YEAR: 1998

= 666'

N


SITE
INQUIRY #: 2401798.5
YEAR: 2005
= 484'
N

APPENDIX B.
SITE ANALYTICAL DATA

Table B-1. Groundwater Monitoring Well Data 2010-2014

			TPH (µg/L)		VOCs (µg/L)								SVOCs (µg/L)
Sample ID	Sample Date	Sample Depth (ft bgs)	Gasoline	Diesel	Benzene	Ethylbenzene	Toluene	Xylenes	Methyl tertiary butyl ether (MTBE)	Acetone	TCE	Tert-butyl Alcohol	Naphthalene
MW-1R	2/8/2010	4.41	**120**	**5,600**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-2	2/8/2010	5.28	<50	**870**	<0.50	<0.50	<0.50	<1.0	<0.50				<0.50
MW-4	2/8/2010	4.71	**120**	**12,000**	<0.50	<0.50	<0.50	<0.50	**1.6**				<0.50
MW-7R	2/8/2010	4.28	**52**	**560**	**0.63**	<0.50	<0.50	<0.50	**2.4**				<0.50
MW-8	2/8/2010	4.31	<50	**360**	<0.50	<0.50	<0.50	<0.50	**1.7**				<0.50
OW-1	2/8/2010	4.2	<50	**11,000**	<0.50	<0.50	<0.50	<0.50	**5.1**				<0.50
OW-2	2/8/2010	4.41	**140**	**10,000**	<0.50	<0.50	<0.50	<0.50	**4.9**				<0.50
MW-1R	7/16/2010	4.98	**110**	**770**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-2	7/16/2010	5.8	<50	<50	<0.50	<0.50	<0.50	<1.0	**1.5**				<0.50
MW-4	7/16/2010	5.12	**210**	**2,700**	<0.50	<0.50	<0.50	<0.50	**4.2**				<0.50
MW-7R	7/16/2010	4.82	**4,000**	**12,000**	**2.6**	**0.8**	<50	**6.9**	**2.5**				<50
MW-8	7/16/2010	4.8	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.6**				<0.50
OW-1	7/16/2010	4.31	**57**	**85**	<0.50	<0.50	<0.50	<0.50	**4.3**				<0.50
OW-2	7/16/2010	4.47	**210**	**2,000**	<0.50	<0.50	<0.50	<0.50	**5.7**				<0.50
MW-1R	2/3/2011	4.92	**110**	**910**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-1R	2/3/2011	9	**97**	**420**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-1R	2/3/2011	18	**98**	**860**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-2	2/4/2011	5.83	<50	**90**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-4	2/4/2011	5.13	**1,600**	**26,000**	<0.50	<0.50	<0.50	<0.50	**1.4**				<0.50
MW-7R	2/3/2011	4.98	**120**	**1,200**	<0.50	<0.50	<0.50	<0.50	**2.0**				<0.50
MW-8	2/4/2011	5.93	<50	**62**	<0.50	<0.50	<0.50	<0.50	**0.8**				<0.50
OW-1	2/4/2011	4.45	**140**	**17,000**	<0.50	<0.50	<0.50	<0.50	**5.9**				<0.50
OW-2	2/4/2011	4.65	**260**	**2,200**	<0.50	<0.50	<0.50	<0.50	**6.2**				<0.50
MW-1R	7/25/2011	4.84	**83**	**500**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-2	7/25/2011	5.76	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50				<0.50
MW-4	7/25/2011	4.04	<50	**720**	<0.50	<0.50	<0.50	<0.50	**1.7**				<0.50
MW-7R	7/25/2011	4.78	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.9**				<0.50
MW-7R	2/3/2011	9	**60**	**690**	<0.50	<0.50	<0.50	<0.50	**1.9**				<0.50
MW-7R	2/3/2011	18	**59**	**430**	<0.50	<0.50	<0.50	<0.50	**2.0**				<0.50
MW-8	7/25/2011	4.81	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.1**				<0.50
OW-1	7/25/2011	4.21	**70**	**210**	<0.50	<0.50	<0.50	<0.50	**10**				<0.50
OW-2	7/25/2011	4.51	**170**	**250**	<0.50	<0.50	<0.50	<0.50	**9.9**				<0.50
MW-1R	3/22/2012	4.35	**120**	**810**	<0.50	<0.50	<0.50	<0.50	<0.50				<2.0
MW-2	3/22/2012	5.4	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50				<2.0
MW-4	3/22/2012	4.67	<50	**2,500**	<0.50	<0.50	<0.50	<0.50	**0.9**				<2.0
MW-7R	3/22/2012	4.32	**320**	**2,800**	<0.50	<0.50	<0.50	<0.50	<0.50				<2.0
MW-8	3/22/2012	4.46	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.3**				<2.0
OW-1	3/22/2012	4.55	**81**	**710**	<0.50	<0.50	<0.50	<0.50	**4.3**				<2.0
OW-2	3/22/2012	4.58	**56**	**680**	<0.50	<0.50	<0.50	<0.50	**6.0**				<2.0
MW-1R	9/24/2012	5.6	**110**	**590**	<0.50	<0.50	<0.50	<0.50	<0.50				<2.0
MW-2	9/24/2012	6.38	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50				<2.0
MW-4	9/24/2012	5.5	<50	**1,200**	<0.50	<0.50	<0.50	<0.50	**1.3**				<2.0
MW-7R	9/24/2012	5.44	**110**	**1,200**	**1.2**	<0.50	<0.50	<0.50	**1.8**				<2.0
MW-8	9/24/2012	5.55	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.6**				<2.0
OW-1	9/24/2012	4.7	**140**	**1,200**	<0.50	<0.50	<0.50	<0.50	**3.7**				<2.0
OW-2	9/24/2012	5	**380**	**1,900**	<0.50	<0.50	<0.50	<0.50	**10**				<2.0
MW-1R	3/4/2013	5.15	**87**	**1,500**	<0.50	<0.50	<0.50	<0.50	<0.50				<0.5
MW-2	3/4/2013	5.95	<50	<50	<0.50	<0.50	<0.50	<0.50	**1.3**				<2.0
MW-4	3/4/2013	5.05	<50	**550**	<0.50	<0.50	<0.50	<0.50	**1.4**				<2.0
MW-7R	3/4/2013	5.19	**55**	**4,000**	<0.50	<0.50	<0.50	<0.50	**1.9**				<2.0
MW-8	3/4/2013	5.09	<50	<50	<0.50	<0.50	<0.50	<0.50	**0.5**				<2.0
OW-1	3/4/2013	4.49	<50	**350**	<0.50	<0.50	<0.50	<0.50	**4.7**				<2.0
OW-2	3/4/2013	4.83	**110**	**1,300**	<0.50	<0.50	<0.50	<0.50	**8.1**				<2.0
MW-1R	6/4/2014	5.08	**21.5**	**570**	<0.20	<0.20	<0.20	<0.46	<0.20	**8.6**	<0.20	<2.4	<0.50
MW-2	6/4/2014	5.93	<20	<26	<0.20	<0.20	<0.20	<0.46	**0.4**	<4.0	**1.4**	<2.4	<0.50
MW-3	6/4/2014	5.9	<20	**28.8**	<2.0	**2.6 J**	<2.0	<4.6	**0.4**	<40	<2.0	<24	<5.0
MW-4	6/4/2014	5.1	<20	**1,830**	<0.20	<0.20	<0.20	<0.46	**1.2**	<4.0	<0.20	<2.4	<5.0
MW-5	6/4/2014	4.55	<20	**108**	<0.20	<0.20	<0.20	<0.46	**0.8**	**15.9**	<0.20	<2.4	<0.50
MW-6	6/4/2014	5.24	<20	<24	<0.20	<0.20	<0.20	<0.46	**4.3**	<4.0	<0.20	<2.4	<0.50
MW-7R	6/4/2014	5.05	**638**	**2,200**	**0.64 J**	<0.20	<0.20	<0.46	<0.20	<4.0	<0.20	<2.4	<0.50
MW-8	6/4/2014	5.04	<20	**357**	<0.20	<0.20	<0.20	<0.46	**1.3**	<4.0	**0.5**	<2.4	<0.50
OW-1	6/4/2014	4.44	**25.3**	**1,620**	<0.20	<0.20	<0.20	<0.46	**2.3**	<4.0	<0.20	**15**	<0.50
OW-2	6/4/2014	4.75	**63.7**	**1,810**	<0.20	<0.20	<0.20	<0.46	**5.1**	**8.9**	<0.20	**11.3**	<0.50
Groundwater ESLs[a]			440	640	46	43	130	100	8,000	1,500	200	18,000	24

Notes:

J - Detected but estimated value.

< - Indicates constituent not detected at or above specified reporting limit

Bold font indicates compound detected

Indicates exceedance of analyte concentration exceedance of respective groundwater ESL.

APPENDIX C.
CNDDB OCCURRENCE REPORT

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Imported file selection

Map Index Number:	20604	**EO Index:**	45661
Key Quad:	Oakland East (3712272)	**Element Code:**	AAAAA01180
Occurrence Number:	529	**Occurrence Last Updated:**	2001-08-27

Scientific Name: *Ambystoma californiense*

Common Name: California tiger salamander

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3

State: S2S3

General Habitat:

CENTRAL VALLEY DPS FEDERALLY LISTED AS THREATENED. SANTA BARBARA & SONOMA COUNTIES DPS FEDERALLY LISTED AS ENDANGERED.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	1886-01-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1886-01-XX	**Occurrence Rank:**	None
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Extirpated		

Location:

ALAMEDA.

Detailed Location:

Ecological:

Threats:

General:

CAS #42 AND CAS #43 COLLECTED BY I.P. ALLEN. ACCORDING TO JENNINGS (1994) SALAMANDERS ARE EXTIRPATED AT THIS SITE.

PLSS:	T02S, R03W, Sec. 07 (M)	**Accuracy:**	1 mile	**Area (acres):**	0
UTM:	Zone-10 N4179913 E566792	**Latitude/Longitude:**	37.76411 / -122.24168	**Elevation (feet):**	20

County Summary:	**Quad Summary:**
Alameda	San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

CAS01S0003	CALIFORNIA ACADEMY OF SCIENCES - 1800-1900 CAS HERPETOLOGY HOLDINGS (INCLUDES STANFORD UNIVERSITY COLLECTIONS) FOR AMBYSTOMA CALIFORNIENSE 2001-08-17
JEN01U0001	JENNINGS, M. (RANA RESOURCES) - LOCALITY RECORDS FOR AMBYSTOMA CALIFORNIENSE IN CALIFORNIA 1992 JENNINGS & HAYES SPECIAL CONCERN HERP DATABASE WITH LOCATIONS MARKED AS PRESENT OR EXTIRPATED. 2001-11-07
JEN94R0001	JENNINGS, M. & M. HAYES - AMPHIBIAN AND REPTILE SPECIES OF SPECIAL CONCERN IN CALIFORNIA. FINAL REPORT SUBMITTED TO DFG, INLAND FISHERIES DIVISION 1994-11-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A0837
Key Quad: Oakland East (3712272)
Occurrence Number: 54

EO Index: 102397
Element Code: ABNKD06071
Occurrence Last Updated: 2016-06-29

Scientific Name: *Falco peregrinus anatum*
Common Name: American peregrine falcon

Listing Status: **Federal:** Delisted
*** SENSITIVE *** **State:** Delisted
CNDDB Element Ranks: **Global:** G4T4
State: S3S4

Rare Plant Rank:
Other Lists: CDF_S-Sensitive
CDFW_FP-Fully Protected
USFWS_BCC-Birds of Conservation Concern

General Habitat:
NEAR WETLANDS, LAKES, RIVERS, OR OTHER WATER; ON CLIFFS, BANKS, DUNES, MOUNDS; ALSO, HUMAN-MADE STRUCTURES.

Micro Habitat:
NEST CONSISTS OF A SCRAPE OR A DEPRESSION OR LEDGE IN AN OPEN SITE.

Last Date Observed: 2014-05-14
Last Survey Date: 2014-05-14
Owner/Manager:
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:
SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:
PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:
NEST IN URBAN STRUCTURE.

Threats:

General:

PLSS:
Accuracy: 80 meters
Area (acres): 5
UTM:
Latitude/Longitude:
Elevation (feet): 0

County Summary:	Quad Summary:
Alameda	Oakland East (3712272)

Sources:

STE14F0009 STEWART, G. - FIELD SURVEY FORM FOR FALCO PEREGRINUS ANATUM 2014-05-14

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09348
Key Quad: San Leandro (3712262)
Occurrence Number: 100
EO Index: 330
Element Code: ABNME03041
Occurrence Last Updated: 1995-12-05

Scientific Name: *Laterallus jamaicensis coturniculus*
Common Name: California black rail

Listing Status: **Federal:** None
State: Threatened
CNDDB Element Ranks: **Global:** G3G4T1
State: S1
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_FP-Fully Protected
IUCN_NT-Near Threatened
NABCI_RWL-Red Watch List
USFWS_BCC-Birds of Conservation Concern

General Habitat:

INHABITS FRESHWATER MARSHES, WET MEADOWS & SHALLOW MARGINS OF SALTWATER MARSHES BORDERING LARGER BAYS.

Micro Habitat:

NEEDS WATER DEPTHS OF ABOUT 1 INCH THAT DO NOT FLUCTUATE DURING THE YEAR & DENSE VEGETATION FOR NESTING HABITAT.

Last Date Observed: 1995-11-21
Last Survey Date: 1995-11-21
Owner/Manager: EBRPD
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Excellent
Trend: Unknown

Location:

ARROWHEAD (MELROSE) MARSH, JUST NORTH OF OAKLAND AIRPORT, SAN LEANDRO BAY.

Detailed Location:

RAIL FLEW FROM ARROWHEAD MARSH TO A WETLAND ADJACENT TO DOOLITTLE DRIVE.

Ecological:

HABITAT CONSISTS OF SALTMARSH, DOMINATED BY PICKLEWEED AND CORDGRASS. THIS ENTIRE MARSH IS SUBMERGED DURING HIGH-HIGH TIDES, WITH ONLY A FEW ISOLATED AREAS OF CORDGRASS ABOVE WATER.

Threats:

THREATENED BY PREDATION FROM INTRODUCED RED FOXES, AS WELL AS NATIVE HERONS, EGRETS, AND RAPTORS.

General:

1 RAIL OBSERVED ON 21 NOVEMBER 1995.

PLSS: T02S, R03W, Sec. 20 (M)
Accuracy: specific area
Area (acres): 46
UTM: Zone-10 N4177734 E569294
Latitude/Longitude: 37.74428 / -122.21348
Elevation (feet): 1

County Summary:	Quad Summary:
Alameda	San Leandro (3712262)

Sources:

BOB95F0003 BOBZIEN, S. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR LATERALLUS JAMAICENSIS COTURNICULUS 1995-11-21

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67061
Key Quad: San Leandro (3712262)
Occurrence Number: 34
EO Index: 332
Element Code: ABNME05016
Occurrence Last Updated: 2016-04-01

Scientific Name: *Rallus longirostris obsoletus*
Common Name: California clapper rail

Listing Status: **Federal:** Endangered
State: Endangered
CNDDB Element Ranks: **Global:** G5T1
State: S1
Rare Plant Rank:
Other Lists: CDFW_FP-Fully Protected
NABCI_RWL-Red Watch List

General Habitat:

SALT-WATER & BRACKISH MARSHES TRAVERSED BY TIDAL SLOUGHS IN THE VICINITY OF SAN FRANCISCO BAY.

Micro Habitat:

ASSOCIATED WITH ABUNDANT GROWTHS OF PICKLEWEED, BUT FEEDS AWAY FROM COVER ON INVERTEBRATES FROM MUD-BOTTOMED SLOUGHS.

Last Date Observed: 2015-04-01
Last Survey Date: 2015-04-01
Owner/Manager: EBRPD
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Fair
Trend: Stable

Location:

ARROWHEAD MARSH AND VICINITY AT MARTIN LUTHER KING SHORELINE, IN SAN LEANDRO BAY.

Detailed Location:

KNOWN FROM ARROWHEAD MARSH SINCE EARLY 1970S. 2005-2015 SURVEYS BY INVASIVE SPARTINA PROJECT INCLUDED REGIONS 17C (ARROWHEAD MARSH), 17E (SAN LEANDRO CK), 17H (MLK MARSH), 17J (FAN MARSH) & 17K (AIRPORT CHANNEL).

Ecological:

LOW-ELEVATION TIDAL MARSH DOMINATED BY PICKLEWEED AND NATIVE, NON-NATIVE, & HYBRID SPARTINA. ANNUAL COUNTS REPORTED BELOW COME MAINLY FROM WINTER HIGH TIDE SURVEYS & MAY REFLECT # OF DETECTIONS AS OPPOSED TO POPULATION SIZE.

Threats:

PREDATION BY RED FOXES (1995), DOGS & FERAL CATS (2010); POLLUTION & HUMAN ACTIVITIES. LOSS OF HIGH-TIDE REFUGIA (2015).

General:

COUNT/YEAR: 37/1978, 22/'81, 16/'82, 14/'85, 5/'88, 3/'89, 2/'90, 0/'91-92, 18/'93, 16/'94, 13/'95, 26/'96, 21/'97, 27/'98, 37/'99, 30/2000, 93/'05, 128.5/'06, 191/'07, 157/'08, 90+/'09, 74+/'10, 89+/'11, 137/'12, 144/'13, 173/'14, 227/'15.

PLSS: T02S, R03W, Sec. 20 (M)
UTM: Zone-10 N4177681 E569296
Accuracy: nonspecific area
Latitude/Longitude: 37.74380 / -122.21345
Area (acres): 175
Elevation (feet): 0

County Summary:

Alameda

Quad Summary:

San Leandro (3712262)

Sources:

BOB95F0005	BOBZIEN, S. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS & GEOTHLYPIS TRICHAS SINUOSA 1995-12-20
BOB99R0001	BOBZIEN, S. & J. DI DONATO (EAST BAY REGIONAL PARKS DISTRICT) - STATUS OF THE CALIFORNIA CLAPPER RAIL (RALLUS LONGIROSTRIS OBSOLETUS) IN THE EAST BAY REGIONAL PARK DISTRICT, CALIFORNIA. ANNUAL REPORT OF ACTIVITIES FOR TAKE OF CLAPPER RAIL. 1999-XX-XX
DEL15F0002	DE LA CRUZ, S. (U.S. GEOLOGICAL SURVEY) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2015-12-23
GIL79A0001	GILL, JR., R. - STATUS AND DISTRIBUTION OF THE CALIFORNIA CLAPPER RAIL. FISH AND GAME 65(1):36-49. 1979-XX-XX
LIU12D0001	LIU, L. ET AL. (PRBO CONSERVATION SCIENCE) - SHAPEFILES AND TABLE FOR AVIAN SURVEYS CONDUCTED IN SAN FRANCISCO BAY ESTUARY 2010-11 2012-05-XX
MCB08D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - SHAPEFILE OF CALIFORNIA CLAPPER RAIL SURVEYS FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT 2008-04-18
MCB09D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - SHAPEFILE OF CALIFORNIA CLAPPER RAIL DETECTIONS DURING THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT (OLOFSON ENVIR. INC), 2009. 2009-XX-XX
MCB10D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - CALIFORNIA CLAPPER RAIL SURVEYS FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT, 2009-2010. 2010-07-20
MCB11D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - 2011 BREEDING SEASON SURVEYS AND INCIDENTAL DETECTIONS OF CLRA FOR THE S.F. ESTUARY SPARTINA PROJECT (STATE COASTAL CONSERV., CALFED BAY-DELTA PROG., SATE WILDLIFE CONSERV. BOARD). 2011-XX-XX
MCB11R0001	MCBROOM, J ET AL. (OLOFSON ENVIRONMENTAL, INC.) - CALIFORNIA CLAPPER RAIL SURVEYS FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT 2010 2011-02-XX
MCB13D0002	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - SHAPEFILE OF 2013 BREEDING SEASON SURVEYS FOR THE CALIFORNIA CLAPPER RAIL IN SUPPORT OF THE INVASIVE SPARTINA PROJECT. 2013-XX-XX
MCB14D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - CNDDB 2014 DATA SUBMISSION - CALIFORNIA RIDGWAY'S RAIL 2014-10-XX
MCB15D0002	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - SURVEY DATA FOR CALIFORNIA RIDGWAY'S RAIL AND CALIFORNIA BLACK RAIL AT SAN FRANCISCO BAY 2015-XX-XX
OEI12D0001	MCBROOM, J. (OLOFSON ENVIRONMENTAL, INC.) - CALIFORNIA CLAPPER RAIL AND CALIFORNIA BLACK RAIL DETECTIONS DURING SURVEY AND MONITORING EFFORTS OF THE INVASIVE SPARTINA PROJECT 2012-XX-XX
RIE11F0004	RIENSCHE, D. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2011-06-14
RIE11F0005	RIENSCHE, D. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2011-06-14
RIE11F0006	RIENSCHE, D. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2011-06-14
ROH09R0001	ROHMER, T. (UNIVERSITY OF CALIFORNIA, DAVIS) - SCIENTIFIC COLLECTING REPORT OF SPECIMENS CAPTURED OR SALVAGED [SC-008912] 2009-05-04
SPA05R0001	SPAUTZ, H. (OLOFSON ENVIRONMENTAL, INC.) - ALAMEDA COUNTY CALIFORNIA CLAPPER RAIL SURVEYS FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT, 2005. (PREPARED FOR THE STATE COASTAL CONSERVANCY) 2005-05-27
SPA06D0001	SPAUTZ, H. & J. MCBROOM (OLOFSON ENVIRONMENTAL, INC.) - SHAPEFILE FOR CALIFORNIA CLAPPER RAIL SURVEYS DONE FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT BY OLOFSON ENVIRONMENTAL, INC. 2006-XX-XX
TAK10F0002	TAKEKAWA, J. (U.S. GEOLOGICAL SURVEY) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2010-10-08
TAK10R0001	TAKEKAWA, J.Y. (U.S. GEOLOGICAL SURVEY-SAN FRANCISCO BAY ESTUARY FIELD STATION) - MONITORING AND APPLIED RESEARCH OF LISTED SPECIES IN SAN FRANCISCO BAY. 2010 ANNUAL REPORT. 2010-XX-XX
TAK11R0001	TAKEKAWA, J. (U.S. GEOLOGICAL SURVEY-SAN FRANCISCO BAY ESTUARY FIELD STATION) - MONITORING AND APPLIED RESEARCH OF LISTED SPECIES IN SAN FRANCISCO BAY 2011 ANNUAL REPORT 2011-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	47339	**EO Index:**	47339
Key Quad:	Oakland East (3712272)	**Element Code:**	ABNME05016
Occurrence Number:	85	**Occurrence Last Updated:**	2006-11-13

Scientific Name: *Rallus longirostris obsoletus*

Common Name: California clapper rail

Listing Status: **Federal:** Endangered

State: Endangered

Rare Plant Rank:

Other Lists: CDFW_FP-Fully Protected
NABCI_RWL-Red Watch List

CNDDB Element Ranks: **Global:** G5T1

State: S1

General Habitat:

SALT-WATER & BRACKISH MARSHES TRAVERSED BY TIDAL SLOUGHS IN THE VICINITY OF SAN FRANCISCO BAY.

Micro Habitat:

ASSOCIATED WITH ABUNDANT GROWTHS OF PICKLEWEED, BUT FEEDS AWAY FROM COVER ON INVERTEBRATES FROM MUD-BOTTOMED SLOUGHS.

Last Date Observed:	2006-04-03	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2006-04-03	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

MARTIN LUTHER KING REGIONAL SHORELINE, SAN LEANDRO BAY; NW OF OAKLAND COLISEUM COMPLEX, WEST OF INTERSTATE 80.

Detailed Location:

2001 OBSERVATION FROM MOUTH OF DAMON CREEK SLOUGH.

Ecological:

MOSTLY YOUNG, TIDALLY INFLUENCED, URBAN STRIP MARSH. DOMINANT VEGETAION IS SPARTINA HYBRIDS WITH PATCHY SALICORNIA VIRGINICA. SURROUNDING LAND USED FOR INDUSTRIAL & RECREATIONAL PURPOSES.

Threats:

THREATS FROM HUMAN ACTIVITIES & POLLUTION.

General:

7 AUG 2001: 1 ADULT OBSERVED. BETWEEN 24 JAN & 3 APR 2006, 1-2 BIRDS OBSERVED AT EACH OF 27 SITES BY THE INVASIVE SPARTINA PROJECT.

PLSS:	T02S, R03W, Sec. 17 (M)	**Accuracy:**	nonspecific area	**Area (acres):**	37
UTM:	Zone-10 N4178934 E569185	**Latitude/Longitude:**	37.75510 / -122.21459	**Elevation (feet):**	10

County Summary:	**Quad Summary:**
Alameda	Oakland East (3712272)

Sources:

SPA06D0001	SPAUTZ, H. & J. MCBROOM (OLOFSON ENVIRONMENTAL, INC.) - SHAPEFILE FOR CALIFORNIA CLAPPER RAIL SURVEYS DONE FOR THE SAN FRANCISCO ESTUARY INVASIVE SPARTINA PROJECT BY OLOFSON ENVIRONMENTAL, INC. 2006-XX-XX
VIN01F0004	VINNEDGE, B. (JONES AND STOKES ASSOCIATES) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS 2001-08-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09348
Key Quad: San Leandro (3712262)
Occurrence Number: 67
EO Index: 328
Element Code: ABPBX1201A
Occurrence Last Updated: 1996-04-02

Scientific Name: *Geothlypis trichas sinuosa*
Common Name: saltmarsh common yellowthroat

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G5T3
State: S3

Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

RESIDENT OF THE SAN FRANCISCO BAY REGION, IN FRESH AND SALT WATER MARSHES.

Micro Habitat:

REQUIRES THICK, CONTINUOUS COVER DOWN TO WATER SURFACE FOR FORAGING; TALL GRASSES, TULE PATCHES, WILLOWS FOR NESTING.

Last Date Observed: 1995-12-20
Last Survey Date: 1995-12-20
Owner/Manager: EBRPD
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Excellent
Trend: Unknown

Location:

ARROWHEAD MARSH, AT MARTIN LUTHER KING SHORELINE, IN SAN LEANDRO BAY.

Detailed Location:

DURING THE DECEMBER 1995 SURVEY, THE MARSH WAS ALMOST ENTIRELY SUBMERGED BY A 7.0 FT HIGH TIDE.

Ecological:

HABITAT CONSISTS OF SALT WATER EMERGENT WETLANDS DOMINATED BY PICKLEWEED AND TWO SPECIES OF CORDGRASS (ONE NATIVE, ONE NON-NATIVE).

Threats:

NON-NATIVE RED FOXES.

General:

TWO SALTMARSH COMMON YELLOWTHROATS WERE OBSERVED DURING A CLAPPER RAIL SURVEY ON 12/20/95.

PLSS: T02S, R03W, Sec. 20 (M)
Accuracy: specific area
Area (acres): 46
UTM: Zone-10 N4177734 E569294
Latitude/Longitude: 37.74428 / -122.21348
Elevation (feet): 0

County Summary:	Quad Summary:
Alameda	San Leandro (3712262)

Sources:

BOB95F0005 BOBZIEN, S. (EAST BAY REGIONAL PARKS DISTRICT) - FIELD SURVEY FORM FOR RALLUS LONGIROSTRIS OBSOLETUS & GEOTHLYPIS TRICHAS SINUOSA 1995-12-20

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 60908
Key Quad: San Leandro (3712262)
Occurrence Number: 18
EO Index: 60944
Element Code: ABPBXA301S
Occurrence Last Updated: 2005-04-11

Scientific Name: *Melospiza melodia pusillula*
Common Name: Alameda song sparrow

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G5T2?
State: S2S3
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

RESIDENT OF SALT MARSHES BORDERING SOUTH ARM OF SAN FRANCISCO BAY.

Micro Habitat:

INHABITS SALICORNIA MARSHES; NESTS LOW IN GRINDELIA BUSHES (HIGH ENOUGH TO ESCAPE HIGH TIDES) AND IN SALICORNIA.

Last Date Observed: 1946-09-19
Last Survey Date: 1946-09-19
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

BAY FARM ISLAND, SAN LEANDRO BAY, AND MELROSE MARSH, WEST OF OAKLAND.

Detailed Location:

LOCATIONS GIVEN BY MVZ AS "MELROSE MARSH", "SAN LEANDRO BAY" AND "BAY FARM ISLAND, SAN FRANCISCO BAY; BAY FARM ISLAND; SAN FRANCISCO BAY ISLANDS".

Ecological:

Threats:

General:

NUMEROUS RECORDS FROM 1897, 1902, 1904, 1908, 1909, 1911, 1914-1916, 1920, 1921, 1923, 1924, 1925, 1927, 1938, 1940, 1941, AND 1946. 9 COLLECTED (CAS) DURING 1897, 1899, 1918, AND 1919.

PLSS: T02S, R03W, Sec. 29 (M)
Accuracy: nonspecific area
Area (acres): 4,590
UTM: Zone-10 N4175880 E568193
Latitude/Longitude: 37.72765 / -122.22614
Elevation (feet):

County Summary:

Alameda

Quad Summary:

San Leandro (3712262), Hunters Point (3712263)

Sources:

CAS05S0003	CALIFORNIA ACADEMY OF SCIENCES - PRINTOUT OF CAS MUSEUM SPECIMENS FOR MELOSPIZA MELODIA PUSILLULA. 2005-04-04
MVZ05S0010	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - PRINTOUT OF MVZ SPECIMENS FOR MELOSPIZA MELODIA PUSILLULA. 2005-04-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	20604	**EO Index:**	60997
Key Quad:	Oakland East (3712272)	**Element Code:**	ABPBXA301S
Occurrence Number:	33	**Occurrence Last Updated:**	2005-04-14

Scientific Name: *Melospiza melodia pusillula*

Common Name: Alameda song sparrow

Listing Status: **Federal:** None

State: None

Rare Plant Rank:

Other Lists: CDFW_SSC-Species of Special Concern
USFWS_BCC-Birds of Conservation Concern

CNDDB Element Ranks: **Global:** G5T2?

State: S2S3

General Habitat:

RESIDENT OF SALT MARSHES BORDERING SOUTH ARM OF SAN FRANCISCO BAY.

Micro Habitat:

INHABITS SALICORNIA MARSHES; NESTS LOW IN GRINDELIA BUSHES (HIGH ENOUGH TO ESCAPE HIGH TIDES) AND IN SALICORNIA.

Last Date Observed:	1921-04-21	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1921-04-21	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ALAMEDA.

Detailed Location:

LOCATIONS GIVEN AS "ALAMEDA" & "ALAMEDA MARSHES". MVZ LAT/LONG PLACES THE LOCATION ON THE WEST SIDE OF THE CITY OF ALAMEDA.

Ecological:

Threats:

General:

1 FEMALE COLLECTED (MVZ #11323) ON 28 NOV 1889. 14 COLLECTED (MVZ #83189-83191; 106573-106583) DURING APR 1921. 12 COLECTED (CAS) DURING 1898, 1899, 1901, 1906, 1908, 1910, AND 1911.

PLSS:	T02S, R03W, Sec. 07 (M)	**Accuracy:**	1 mile	**Area (acres):**	0
UTM:	Zone-10 N4179913 E566792	**Latitude/Longitude:**	37.76411 / -122.24168	**Elevation (feet):**	20

County Summary:	**Quad Summary:**
Alameda	San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

CAS05S0003	CALIFORNIA ACADEMY OF SCIENCES - PRINTOUT OF CAS MUSEUM SPECIMENS FOR MELOSPIZA MELODIA PUSILLULA. 2005-04-04
MVZ05S0010	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - PRINTOUT OF MVZ SPECIMENS FOR MELOSPIZA MELODIA PUSILLULA. 2005-04-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 89718
EO Index: 90720
Key Quad: Redwood Point (3712252)
Element Code: AFCHB03010
Occurrence Number: 22
Occurrence Last Updated: 2013-07-25

Scientific Name: *Spirinchus thaleichthys*
Common Name: longfin smelt

Listing Status: **Federal:** Candidate
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern

CNDDB Element Ranks: **Global:** G5
State: S1

General Habitat:

EURYHALINE, NEKTONIC & ANADROMOUS. FOUND IN OPEN WATERS OF ESTUARIES, MOSTLY IN MIDDLE OR BOTTOM OF WATER COLUMN.

Micro Habitat:

PREFER SALINITIES OF 15-30 PPT, BUT CAN BE FOUND IN COMPLETELY FRESHWATER TO ALMOST PURE SEAWATER.

Last Date Observed: 1995-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1995-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Decreasing
Presence: Presumed Extant

Location:

SOUTH SAN FRANCISCO BAY (SOUTH OF ALAMEDA).

Detailed Location:

SPECIMENS FROM VICINITY OF DUMBARTON BRIDGE (1980) & HUNTERS PT (1922, ND). MAPPED TO "SOUTH BAY" SAMPLING AREA FROM IEP BAY STUDY INITIATED IN 1980; INCLUDES 9 OPEN WATER (MIDWATER & OTTER TRAWLS, PLANKTON NET) & 8 BEACH SEINE STATIONS.

Ecological:

BAY STUDY DOCUMENTED LOW LEVELS OF SEASONAL DISPERSAL INTO THE SOUTH BAY, BY AGE-1 (SUBADULT) FISH IN WINTER, ESPECIALLY IN YEARS WITH HIGH FRESHWATER OUTFLOW (FROM THE DELTA INTO THE ESTUARY).

Threats:

BAY-DELTA POPULATION IN DECLINE DUE TO DIVERSION, DROUGHT, ENTRAINMENT, FOOD LIMITATION CAUSED BY INVASIVE AMUR CLAM.

General:

COLLECTED IN 1922, 1980. 1980-95: LARVAE COLLECTED FROM SOUTH BAY ONLY IN HIGH-OUTFLOW YEARS. YOY >40 MM PRESENT IN LOW #S MAY-DEC; SUBSTANTIAL YOY USE ONLY IN HIGH-OUTFLOW YEARS. AGE-1 FISH PRESENT JAN-MAR; NONE DETECTED BY JULY.

PLSS: T99X, R99X, Sec. UN (X)
Accuracy: nonspecific area
Area (acres): 110,338
UTM: Zone-10 N4161486 E572476
Latitude/Longitude: 37.59760 / -122.17897
Elevation (feet): 0

County Summary:

Alameda, San Francisco, San Mateo, Santa Clara

Quad Summary:

Milpitas (3712148), Mountain View (3712241), Palo Alto (3712242), Newark (3712251), Redwood Point (3712252), San Mateo (3712253), Montara Mountain (3712254), San Leandro (3712262), Hunters Point (3712263), San Francisco South (3712264), Oakland East (3712272), Oakland West (3712273)

Sources:

FEH80S0001	FEHR, D. - CAS ICH SPECIMEN #45508, COLLECTED FROM THE SAN FRANCISCO BAY, SOUTH BAY NEAR DUMBARTON BRIDGE. 1980-01-18
HUB22S0001	HUBBS, C. - UMMZ FISH SPECIMENS #60920 & 60923, COLLECTED FROM SAN FRANCISCO BAY OFF ALAMEDA. 1922-12-22
ISRNDS0001	ISRAEL, H. - CAS SU (ICH) SPECIMEN #25267, COLLECTED FROM "HUNTER'S POINT, S.F." XXXX-XX-XX
ORS99R0001	ORSI, J. ET AL. (CALIFORNIA DEPARTMENT OF WATER RESOURCES) - REPORT ON THE 1980-1995 FISH, SHRIMP, AND CRAB SAMPLING IN THE SAN FRANCISCO ESTUARY, CALIFORNIA 1999-XX-XX
ROS07A0001	ROSENFIELD, J. & R. BAXTER (UNIVERSITY OF CALIFORNIA, DAVIS) - POPULATION DYNAMICS AND DISTRIBUTION PATTERNS OF LONGFIN SMELT IN THE SAN FRANCISCO ESTUARY. TRANSACTIONS OF THE AMERICAN FISHERIES SOCIETY 136:1577-1592 2007-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09348
Key Quad: San Leandro (3712262)
Occurrence Number: 11
EO Index: 333
Element Code: AMABA01071
Occurrence Last Updated: 1995-12-05

Scientific Name: *Sorex vagrans halicoetes*
Common Name: salt-marsh wandering shrew

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern

CNDDB Element Ranks: **Global:** G5T1
State: S1

General Habitat:

SALT MARSHES OF THE SOUTH ARM OF SAN FRANCISCO BAY.

Micro Habitat:

MEDIUM HIGH MARSH 6-8 FT ABOVE SEA LEVEL WHERE ABUNDANT DRIFTWOOD IS SCATTERED AMONG SALICORNIA.

Last Date Observed: 1938-02-25
Last Survey Date: 1938-02-25
Owner/Manager: EBRPD
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ARROWHEAD (MELROSE) MARSH, JUST NORTH OF OAKLAND AIRPORT, SAN LEANDRO BAY.

Detailed Location:

Ecological:

FORMERLY KNOWN AS MELROSE MARSH; NAME CHANGE REFLECTS CURRENT CONDITION: ONLY ARROWHEAD-SHAPED TIP OF TIDAL SALT MARSH REMAINS. SE PORTION OF ORIGINAL MARSH HAS BEEN FILLED. REMAINING HABITAT EXCELLENT.

Threats:

General:

MVZ SPECIMENS FROM 1910, 1937, & 1938: #12728, 77513, 81286, 87900. NO RECENT SHREW RECORDS.

PLSS: T02S, R03W, Sec. 20 (M)
Accuracy: specific area
Area (acres): 46
UTM: Zone-10 N4177734 E569294
Latitude/Longitude: 37.74428 / -122.21348
Elevation (feet): 1

County Summary:	Quad Summary:
Alameda	San Leandro (3712262)

Sources:

KEL87U0002	KELLY, P.R. - DESCRIPTION BY PAUL KELLY OF CURRENT CONDITION OF ARROWHEAD (MELROSE) MARSH. 1987-07-07
MVZ81S0001	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - LIST OF MUSEUM SPECIMENS (MAMMALS) 1981 1981-XX-XX
WES86R0001	WESTERN ECOLOGICAL SERVICES COMPANY, INC. (WESCO) - A REVIEW OF THE POPULATION STATUS OF THE SALT MARSH WANDERING SHREW. FINAL REPORT PREPARED FOR USFWS, SACRAMENTO. 1986-03-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 60859
Key Quad: Oakland East (3712272)
Element Code: AMABB02031
Occurrence Number: 8
Occurrence Last Updated: 2005-04-04

Scientific Name: *Scapanus latimanus parvus*
Common Name: Alameda Island mole

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern

CNDDB Element Ranks: **Global:** G5T1Q
State: S1

General Habitat:

ONLY KNOWN FROM ALAMEDA ISLAND. FOUND IN A VARIETY OF HABITATS, ESPECIALLY ANNUAL & PERENNIAL GRASSLANDS.

Micro Habitat:

PREFERS MOIST, FRIABLE SOILS. AVOIDS FLOODED SOILS.

Last Date Observed: 1944-09-21
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1944-09-21
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ALAMEDA.

Detailed Location:

EXACT LOCATION NOT KNOWN. MAPPED IN THE GENERAL VICINTY OF ALAMEDA. LAT/LONG COORDINATES PROVIDED BY MANIS FALL ON THE WESTERN SIDE OF THE CITY OF ALAMEDA WITH AN UNCERTAINTY OF 3.5 MILES.

Ecological:

Threats:

General:

ALL COLLECTED AT "ALAMEDA": 1 FEMALE 30 MAR 1916 BY M. ANDERSON (MVZ #30342), 1 MALE 1 JUN 1916 BY M. ANDERSON (MVZ #30343), 1 FEMALE 29 APR 1942 BY W. RUSSELL (MVZ #112250), 1 MALE 21 SEP 1944 BY S. BENSON & J. KELLY (MVZ #101498).

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet): 20

County Summary:

Alameda

Quad Summary:

San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

MAN05S0012 MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF SCAPANUS LATIMANUS PARVUS SPECIMEN RECORDS FROM MANIS. THIS INCLUDES RECORDS FROM MVZ. 2005-01-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09348
Key Quad: San Leandro (3712262)
Occurrence Number: 59

EO Index: 329
Element Code: AMAFF02040
Occurrence Last Updated: 2015-02-27

Scientific Name: *Reithrodontomys raviventris*
Common Name: salt-marsh harvest mouse

Listing Status: **Federal:** Endangered
State: Endangered

CNDDB Element Ranks: **Global:** G1G2
State: S1S2

Rare Plant Rank:

Other Lists: CDFW_FP-Fully Protected
IUCN_EN-Endangered

General Habitat:

ONLY IN THE SALINE EMERGENT WETLANDS OF SAN FRANCISCO BAY AND ITS TRIBUTARIES.

Micro Habitat:

PICKLEWEED IS PRIMARY HABITAT, BUT MAY OCCUR IN OTHER MARSH VEGETATION TYPES AND IN ADJACENT UPLAND AREAS. DOES NOT BURROW, BUILD SLOOSELY ORGANIZED NESTS. REQUIRES HIGHER AREAS FOR FLOOD ESCAPE.

Last Date Observed: 1938-06-29
Last Survey Date: 1938-06-29
Owner/Manager: EBRPD
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ARROWHEAD MARSH, JUST NORTH OF OAKLAND AIRPORT, SAN LEANDRO BAY.

Detailed Location:

.

Ecological:

FORMERLY KNOWN AS MELROSE MARSH; NAME CHANGE REFLECTS CURRENT CONDITION: ONLY ARROWHEAD-SHAPED TIP OF MARSH REMAINS. SE PORTION OF ORIGINAL MARSH HAS BEEN FILLED. REMAINING MARSH IS EXCELLENT HABITAT.

Threats:

General:

MANY HISTORIC COLLECTIONS WERE MADE IN THIS VICINITY BETWEEN 1910 AND 1938. NO RECENT TRAPPING HAS BEEN DONE.

PLSS: T02S, R03W, Sec. 20 (M)
UTM: Zone-10 N4177734 E569294

Accuracy: specific area
Latitude/Longitude: 37.74428 / -122.21348

Area (acres): 46
Elevation (feet): 1

County Summary:	Quad Summary:
Alameda	San Leandro (3712262)

Sources:

ALE10S0004	ALEXANDER, A. - ALEXANDER #1111 MVZ #12706 COLLECTED FROM MELROSE MARSH 1910-12-16
ALE10S0005	ALEXANDER, A. - ALEXANDER #1114 MVZ #12708 COLLECTED FROM MELROSE MARSH 1910-12-16
ALE10S0006	ALEXANDER, A. - ALEXANDER #1115 MVZ #12709 COLLECTED FROM MELROSE MARSH 1910-12-16
BAL37S0001	BALL, R. - BALL #14 MVZ #80832 COLLECTED FROM 1 MI NE OAKLAND AIRPORT 1937-04-17
BAL37S0002	BALL, R. - BALL #15 MVZ #80833 COLLECTED FROM 1/2 MI NE OAKLAND AIRPORT 1937-04-17
ENG36S0001	ENGLER, C. - ENGLER #2 MVZ #70461 COLLECTED FROM MELROSE MARSH 1936-02-02
ENG36S0003	ENGLER, C. - ENGLER #3 MVZ #70462 COLLECTED FROM MELROSE MARSH 1936-02-02
FEA38S0002	FEATHERS, D. - FEATHERS #405 MVZ #109726 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-17
FEA38S0004	FEATHERS, D. - FEATHERS #406 MVZ #109727 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-17
FEA38S0005	FEATHERS, D. - FEATHERS #407 MVZ #109728 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-17
FEA38S0006	FEATHERS, D. - FEATHERS #408 MVZ #109729 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-17
FEA38S0007	FEATHERS, D. - FEATHERS #409 MVZ #109730 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-17
FEA38S0008	FEATHERS, D. - FEATHERS #418 MVZ #109731 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-18
FEA38S0009	FEATHERS, D. - FEATHERS #449 MVZ #109732 COLLECTED FROM 1 MI E MUNICIPAL AIRPORT, OAKLAND 1938-06-29
HOO36S0061	HOOPER, E. & J. VON BLOEKER - HOOPER #10576 MVZ #71148 COLLECTED FROM MELROSE MARSH 1936-02-02
KEL10S0005	KELLOGG, L. - KELLOGG #1229 MVZ #12697 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0006	KELLOGG, L. - KELLOGG #1230 MVZ #12698 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0007	KELLOGG, L. - KELLOGG #1231 MVZ #12699 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0008	KELLOGG, L. - KELLOGG #1232 MVZ #12700 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0009	KELLOGG, L. - KELLOGG #1233 MVZ #12701 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0010	KELLOGG, L. - KELLOGG #1234 MVZ #12702 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0011	KELLOGG, L. - KELLOGG #1235 MVZ #12703 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0012	KELLOGG, L. - KELLOGG #1236 MVZ #12704 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL10S0013	KELLOGG, L. - KELLOGG #1237 MVZ #12705 COLLECTED FROM MELROSE MARSH 1910-12-16
KEL87U0002	KELLY, P.R. - DESCRIPTION BY PAUL KELLY OF CURRENT CONDITION OF ARROWHEAD (MELROSE) MARSH. 1987-07-07
KOF37S0001	KOFORD, C. - KOFORD #4 MVZ #80834 COLLECTED FROM 1 MI NE OAKLAND AIRPORT 1937-03-31
KOF37S0002	KOFORD, C. - KOFORD #15 MVZ #80836 COLLECTED FROM 1/2 MI NE OAKLAND AIRPORT 1937-04-17
KOF37S0003	KOFORD, C. - KOFORD #5 MVZ #80835 COLLECTED FROM 1 MI NE OAKLAND AIRPORT 1937-04-01
NOR37S0013	NORTH, C. - NORTH #16 MVZ #80839 COLLECTED FROM 3/4 MI NE OAKLAND AIRPORT 1937-04-30
NOR37S0016	NORTH, C. - NORTH #24 MVZ #80668 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-06-27
NOR37S0017	NORTH, C. - NORTH #25 MVZ #80669 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-06-27
NOR37S0018	NORTH, C. - NORTH #26 MVZ #80670 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-06-27
NOR37S0019	NORTH, C. - NORTH #30 MVZ #80671 COLLECTED FROM MELROSE MARSH, NE OF OAKLAND AIRPORT, OAKLAND 1937-07-17
NOR37S0020	NORTH, C. - NORTH #31 MVZ #80672 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-07-17
NOR37S0021	NORTH, C. & C. KOFORD - NORTH #9314 MVZ #80673 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-01-21
NOR37S0022	NORTH, C. & C. KOFORD - NORTH #9315 MVZ #80674 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-01-21
NOR37S0023	NORTH, C. - NORTH #47 MVZ #80675 COLLECTED FROM MELROSE MARSH, OAKLAND 1937-01-21
NOR37S0024	NORTH, C. - NORTH #7 MVZ #80837 COLLECTED FROM 3/4 MI NE OAKLAND AIRPORT 1937-04-11
NOR37S0025	NORTH, C. - NORTH #11 MVZ #80838 COLLECTED FROM 3/4 MI NE OAKLAND AIRPORT 1937-04-18
NOR38S0001	NORTH, C. - NORTH #499 MVZ #81303 COLLECTED FROM MELROSE MARSH, 1/4 MI NE OAKLAND AIRPORT 1938-02-25
NOR38S0005	NORTH, C. - NORTH #51 MVZ #81304 COLLECTED FROM MELROSE MARSH, 3/4 MI NE OAKLAND AIRPORT 1938-02-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	72662	**EO Index:**	1306
Key Quad:	Oakland East (3712272)	**Element Code:**	ARADB21031
Occurrence Number:	1	**Occurrence Last Updated:**	2010-06-29

Scientific Name: *Masticophis lateralis euryxanthus* **Common Name:** Alameda whipsnake

Listing Status:	**Federal:**	Threatened	**Rare Plant Rank:**	
*** SENSITIVE ***	**State:**	Threatened	**Other Lists:**	
CNDDB Element Ranks:	**Global:**	G4T2		
	State:	S2		

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed:	1953-01-26	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1953-01-26	**Occurrence Rank:**	Unknown
Owner/Manager:		**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

WHIPSNAKES HAVE LIKELY BEEN EXTERPATED FROM MILLS COLLEGE DUE TO LOSS OF HABITAT. LEONA HEIGHTS PARK MAY PROVIDE SOME REFUGIA FOR WHIPSNAKES SINCE THERE APPEARS TO BE SOME HABITAT COORIDORS (2009 AERIAL IMAGES). CURRENT SURVEYS NEEDED.

Threats:

General:

PLSS:	**Accuracy:**	nonspecific area	**Area (acres):**	1,452
UTM:	**Latitude/Longitude:**		**Elevation (feet):**	500

County Summary:	**Quad Summary:**
Alameda	Oakland East (3712272)

Sources:

CAS04S0012	CALIFORNIA ACADEMY OF SCIENCES - CAS MASTICOPHIS LATERALIS SPECIMEN #5158 COLLECTED BY E. W. GIFFORD ON 30 MAY 1904 AT MILLS COLLEGE. 1904-05-30
JEN94U0002	JENNINGS, M. - LETTER FROM MARK JENNINGS TO CHRIS NAGANO (USFWS) REGARDING LOCALITY INFO FOR M. L. EURYXANTHUS, M. L. LATERALIS, AND INTERCROSSES OF THE TWO IN ALAMEDA & CONTRA COSTA COUNTIES. 1994-03-27
MVZ53S0005	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - MVZ MASTICOPHIS LATERALIS SPECIMEN #64661 COLLECTED BY D. OSMER ON 26 JAN 1953, OAKLAND. 1953-01-26

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09329
EO Index: 27622
Key Quad: Briones Valley (3712282)
Element Code: ARADB21031
Occurrence Number: 14
Occurrence Last Updated: 2010-08-11

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2

Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 2004-06-05
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2004-06-05
Occurrence Rank: Good
Owner/Manager:
Trend: Stable
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

HABITAT CONSISTS OF COASTAL SAGE SCRUB, OAK/BAY WOODLAND, EUCALYPTUS WOODLAND, AND GRASSLAND ALONG THE WEST SIDE OF TELEGRAPH CANYON.

Threats:

General:

PLSS:
Accuracy: nonspecific area
Area (acres): 388
UTM:
Latitude/Longitude:
Elevation (feet): 1,400

County Summary:
Alameda, Contra Costa

Quad Summary:
Oakland East (3712272), Briones Valley (3712282)

Sources:

JEN94U0002	JENNINGS, M. - LETTER FROM MARK JENNINGS TO CHRIS NAGANO (USFWS) REGARDING LOCALITY INFO FOR M. L. EURYXANTHUS, M. L. LATERALIS, AND INTERCROSSES OF THE TWO IN ALAMEDA & CONTRA COSTA COUNTIES. 1994-03-27
MVZ48S0001	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - MVZ HERPETOLOGY SPECIMEN #50390, COLLECTED BY WILLIAM J. RIEMER. 1948-04-26
MVZ50S0004	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - MVZ HERPETOLOGY SPECIMEN #50391, COLLECTED BY ARCHIE MOSSMAN AND CITED AS THE SUBSPECIES HOLOTYPE BY WILLIAM J. RIEMER. 1950-08-15
RIE54A0001	RIEMER, W.J. (MUSEUM OF VERTEBRATE ZOOLOGY) - A NEW SUBSPECIES OF THE SNAKE MASTICOPHIS LATERALIS FROM CALIFORNIA, COPEIA, VOL. 1954, NO. 1, PP 45-48. 1954-02-19
SWA02F0010	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2002-06-12
SWA03F0004	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2003-10-30
SWA03R0001	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - 2003 ANNUAL REPORT OF SPECIMENS 2003-XX-XX
SWA04F0007	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2004-06-05
SWA07U0001	SWAIM BIOLOGICAL, INC. - SUMMARY OF ALAMEDA WHIPSNAKE ENCOUNTERS COMPILED FROM K. SWAIM'S RECORDS. 2007-XX-XX
UMM46S0001	UMMZ (UNIVERSITY OF MICHIGAN MUSEUM OF ZOOLOGY) - UMMZ AMPHIBIAN AND REPTILE CATALOGUE SPECIMEN #118989, COLLECTED BY WADE FOX. 1946-10-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09342
EO Index: 27618
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 15
Occurrence Last Updated: 2010-07-12

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2

Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 1940-11-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1940-11-10
Occurrence Rank: Unknown
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

Threats:

General:

PLSS:
Accuracy: 1/5 mile
Area (acres): 0
UTM:
Latitude/Longitude:
Elevation (feet): 1,340

County Summary:
Alameda, Contra Costa

Quad Summary:
Oakland East (3712272)

Sources:

JEN94U0002	JENNINGS, M. - LETTER FROM MARK JENNINGS TO CHRIS NAGANO (USFWS) REGARDING LOCALITY INFO FOR M. L. EURYXANTHUS, M. L. LATERALIS, AND INTERCROSSES OF THE TWO IN ALAMEDA & CONTRA COSTA COUNTIES. 1994-03-27
MVZ40S0003	MUSEUM OF VERTEBRATE ZOOLOGY (UNIVERSITY OF CALIFORNIA, BERKELEY) - MVZ MASTICOPHIS LATERALIS SPECIMEN #33885 COLLECTED BY ARTHUR ELLIS, 1940 1940-11-10
RIE54A0001	RIEMER, W.J. (MUSEUM OF VERTEBRATE ZOOLOGY) - A NEW SUBSPECIES OF THE SNAKE MASTICOPHIS LATERALIS FROM CALIFORNIA, COPEIA, VOL. 1954, NO. 1, PP 45-48. 1954-02-19
SWA08D0002	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - SHAPEFILE & ATTRIBUTE TABLE OF POINT LOCATIONS (650+) OF VARIOUS ALAMEDA WHIPSNAKE OCCURRENCES COMPILED BY SWAIM BIOLOGICAL INC, 1913-2008 2008-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 17380
EO Index: 11943
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 33
Occurrence Last Updated: 1996-09-24

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2

Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 1990-07-03
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1990-07-03
Occurrence Rank: Excellent
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

HABITAT IS PATCHES OF DIABLAN SAGE SCRUB ON STEEP (40 DEG), SW SLOPES. SCRUB VEGETATION INCLUDES CALIFORNIA SAGE, STICKY MONKEY FLOWER, COYOTE BRUSH, AND POISON OAK. RIPARIAN HABITAT BORDERING SCRUB TENDS TOWARD CALIFORNIA BAY WOODLAND.

Threats:

SITE IS PRESENTLY PROTECTED BY THE OWNER FROM PUBLIC USE AND USED FOR LIGHT GRAZING.

General:

PLSS:
Accuracy: 1/5 mile
Area (acres): 0
UTM:
Latitude/Longitude:
Elevation (feet): 1,080

County Summary:	Quad Summary:
Contra Costa	Oakland East (3712272)

Sources:

EIP90R0001	EIP ASSOCIATES - RESULTS OF THE LIVE-TRAPPING SURVEY FOR THE ALAMEDA WHIPSNAKE (MASTICOPHIS LATERALIS EURYXANTHUS) IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA, MAY 5 - JULY 30 1990. 1990-12-XX
MUL90F0007	MULLEN, D.A. & G.A. BEEMAN - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 1990-07-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 17392
EO Index: 11937
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 34
Occurrence Last Updated: 2016-05-12

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2

Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 2014-06-13
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2014-06-13
Occurrence Rank: Excellent
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

1990: HABITAT WAS PATCHES OF DIABLAN SAGE SCRUB ON STEEP (40 DEG), SW SLOPES. SCRUB VEGETATION INCLUDES CALIFORNIA SAGE, STICKY MONKEY FLOWER, COYOTE BRUSH, & POISON OAK. RIPARIAN HABITAT WHICH BORDERS SCRUB TENDS TOWARD CALIF BAY WOODLAND.

Threats:

General:

PLSS: **Accuracy:** nonspecific area **Area (acres):** 46
UTM: **Latitude/Longitude:** **Elevation (feet):** 1,300

County Summary:	Quad Summary:
Alameda, Contra Costa	Oakland East (3712272), Briones Valley (3712282)

Sources:

EIP90R0001	EIP ASSOCIATES - RESULTS OF THE LIVE-TRAPPING SURVEY FOR THE ALAMEDA WHIPSNAKE (MASTICOPHIS LATERALIS EURYXANTHUS) IN ALAMEDA AND CONTRA COSTA COUNTIES, CALIFORNIA, MAY 5 - JULY 30 1990. 1990-12-XX
MUL90F0006	MULLEN, D.A. & G.A. BEEMAN (EIP ASSOCIATES) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 1990-06-03
NEW09D0001	NEWCOMB, T. (EAST BAY MUNICIPAL UTILITY DISTRICT) - GEODATABASE OF LOCATIONS OF RARE SPECIES WITHIN EBMUD EAST BAY WATERSHED, 2009 VERSION 2009-11-02
PUR13D0001	PURIFICATO, J. (EAST BAY MUNICIPAL UTILITY DISTRICT) - SPECIES OBSERVATION DATA COLLECTED IN 2013 BY EAST BAY MUNICIPAL UTILITY DISTRICT FISHERIES AND WILDLIFE STAFF [SC-001933, SC-010541] 2013-XX-XX
PUR14D0001	PURIFICATO, J. ET AL. (EAST BAY MUNICIPAL UTILITY DISTRICT) - DATA COLLECTED IN 2014 BY EAST BAY MUNICIPAL UTILITY DISTRICT FISHERIES AND WILDLIFE STAFF 2014-12-09
SWA08D0002	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - SHAPEFILE & ATTRIBUTE TABLE OF POINT LOCATIONS (650+) OF VARIOUS ALAMEDA WHIPSNAKE OCCURRENCES COMPILED BY SWAIM BIOLOGICAL INC, 1913-2008 2008-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 48051
EO Index: 48051
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 60
Occurrence Last Updated: 2002-06-05

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2

Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 2002-05-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-05-15
Occurrence Rank: Unknown
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

Threats:

General:

PLSS:
Accuracy: 80 meters
Area (acres): 0
UTM:
Latitude/Longitude:
Elevation (feet): 750

County Summary:	Quad Summary:
Contra Costa	Oakland East (3712272)

Sources:

MIL02U0001 MILLER, J. (CENTER FOR BIOLOGICAL DIVERSITY) - LETTER FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS. 2002-05-31

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 73084
EO Index: 74015
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 95
Occurrence Last Updated: 2008-12-05

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2
Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 2006-05-29
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-05-29
Occurrence Rank: Fair
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

HABITAT DESCRIBED AS CHAPARRAL, OAK-BAY WOODLAND AND GRASSLAND, WITH THE SURROUNDING LAND USE RESIDENTIAL, REGIONAL PARK, AND FREEWAY.

Threats:

General:

PLSS:
Accuracy: 80 meters
Area (acres): 0
UTM:
Latitude/Longitude:
Elevation (feet): 1,111

County Summary:	Quad Summary:
Contra Costa	Oakland East (3712272)

Sources:

SWA06F0005 SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2006-05-29

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	77802	**EO Index:**	78702
Key Quad:	Oakland East (3712272)	**Element Code:**	ARADB21031
Occurrence Number:	100	**Occurrence Last Updated:**	2010-07-06

Scientific Name: *Masticophis lateralis euryxanthus* **Common Name:** Alameda whipsnake

Listing Status:	**Federal:**	Threatened	**Rare Plant Rank:**	
*** SENSITIVE ***	**State:**	Threatened	**Other Lists:**	
CNDDB Element Ranks:	**Global:**	G4T2		
	State:	S2		

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed:	2008-10-12	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2008-10-12	**Occurrence Rank:**	Unknown
Owner/Manager:		**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

Threats:

2008 CAPTURE IN THE IMMEDIATE VICINITY OF THE PROPOSED ACCESS ROAD OF THE HELIOS PROJECT AT LAWRENCE BERKELEY NAT'L LAB.

General:

PLSS:	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	**Latitude/Longitude:**		**Elevation (feet):**	680

County Summary:	**Quad Summary:**
Alameda	Oakland East (3712272)

Sources:

SWA08F0027	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2008-10-12
SWA08U0001	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - EMAIL WITH MAPS REGARDING AN ALAMEDA WHIPSNAKE CAPTURE. 2008-10-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	79298	**EO Index:**	80279
Key Quad:	Oakland East (3712272)	**Element Code:**	ARADB21031
Occurrence Number:	145	**Occurrence Last Updated:**	2010-07-06

Scientific Name: *Masticophis lateralis euryxanthus* **Common Name:** Alameda whipsnake

Listing Status:	**Federal:**	Threatened	**Rare Plant Rank:**	
*** SENSITIVE ***	**State:**	Threatened	**Other Lists:**	
CNDDB Element Ranks:	**Global:**	G4T2		
	State:	S2		

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed:	2008-05-29	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2008-05-29	**Occurrence Rank:**	Good
Owner/Manager:		**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

HABITAT DESCRIBED AS CHAPARRAL, OAK-BAY WOODLAND, AND HILL GRASSLAND.

Threats:

General:

PLSS:	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	**Latitude/Longitude:**		**Elevation (feet):**	1,140

County Summary:	**Quad Summary:**
Alameda	Oakland East (3712272)

Sources:

SWA08D0002	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - SHAPEFILE & ATTRIBUTE TABLE OF POINT LOCATIONS (650+) OF VARIOUS ALAMEDA WHIPSNAKE OCCURRENCES COMPILED BY SWAIM BIOLOGICAL INC, 1913-2008 2008-XX-XX
SWA08F0013	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - FIELD SURVEY FORM FOR MASTICOPHIS LATERALIS EURYXANTHUS 2008-05-29

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 79310
EO Index: 80285
Key Quad: Oakland East (3712272)
Element Code: ARADB21031
Occurrence Number: 146
Occurrence Last Updated: 2010-07-06

Scientific Name: *Masticophis lateralis euryxanthus*
Common Name: Alameda whipsnake

Listing Status: **Federal:** Threatened
*** SENSITIVE *** **State:** Threatened
CNDDB Element Ranks: **Global:** G4T2
State: S2
Rare Plant Rank:
Other Lists:

General Habitat:

TYPICALLY FOUND IN CHAPARRAL AND SCRUB HABITATS BUT WILL ALSO USE ADJACENT GRASSLAND, OAK SAVANNA AND WOODLAND HABITATS.

Micro Habitat:

MOSTLY SOUTH-FACING SLOPES & RAVINES, WITH ROCK OUTCROPS, DEEP CREVICES OR ABUNDANT RODENT BURROWS, WHERE SHRUBS FORM A VEGETATIVE MOSAIC WITH OAK TREES AND GRASSES.

Last Date Observed: 2007-11-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2007-11-15
Occurrence Rank: Unknown
Owner/Manager:
Trend: Unknown
Presence: Presumed Extant

Location:

SENSITIVE LOCATION INFORMATION SUPPRESSED.

Detailed Location:

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

Threats:

General:

PLSS:
Accuracy: 1/10 mile
Area (acres): 0
UTM:
Latitude/Longitude:
Elevation (feet): 945

County Summary:	Quad Summary:
Contra Costa	Oakland East (3712272)

Sources:

SWA08D0002	SWAIM, K. (SWAIM BIOLOGICAL, INC.) - SHAPEFILE & ATTRIBUTE TABLE OF POINT LOCATIONS (650+) OF VARIOUS ALAMEDA WHIPSNAKE OCCURRENCES COMPILED BY SWAIM BIOLOGICAL INC, 1913-2008 2008-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 09348
EO Index: 331
Key Quad: San Leandro (3712262)
Element Code: CTT52110CA
Occurrence Number: 51
Occurrence Last Updated: 1998-07-20

Scientific Name: *Northern Coastal Salt Marsh*
Common Name: Northern Coastal Salt Marsh

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G3
State: S3.2

General Habitat:

Micro Habitat:

Last Date Observed: 1985-11-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-11-XX
Occurrence Rank: Unknown
Owner/Manager: EBRPD
Trend: Unknown
Presence: Presumed Extant

Location:

ARROWHEAD MARSH IN SAN LEANDRO BAY.

Detailed Location:

Ecological:

SALT MARSH; 23% OF COVER IS SALICORNIA VIRGINICA, 10% IS DISTICHLIS SPICATA AND 10% IS JAUMEA CARNOSA. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threats:

General:

SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T02S, R03W, Sec. 20 (M)
Accuracy: specific area
Area (acres): 46
UTM: Zone-10 N4177734 E569294
Latitude/Longitude: 37.74428 / -122.21348
Elevation (feet): 10

County Summary:

Alameda

Quad Summary:

San Leandro (3712262)

Sources:

CUN87R0001 CUNEO, K.C. - A DISSERTATION ON THE SALT MARSH VEGETATION, ECOLOGY, AND ZOOLOGY. 1987-11-23

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 61072
Key Quad: Oakland East (3712272)
Element Code: PDAPI1Z0D0
Occurrence Number: 6
Occurrence Last Updated: 2015-07-14

Scientific Name: *Sanicula maritima*
Common Name: adobe sanicle

Listing Status: **Federal:** None
State: Rare
Rare Plant Rank: 1B.1
Other Lists: USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, VALLEY AND FOOTHILL GRASSLAND, CHAPARRAL, COASTAL PRAIRIE.

Micro Habitat:

MOIST CLAY OR ULTRAMAFIC SOILS. 30-240 M.

Last Date Observed: 1936-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1936-XX-XX
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Extirpated

Location:

AT ALAMEDA.

Detailed Location:

EXACT LOCATION UNKNOWN; MAPPED IN GENERAL VICINITY OF ALAMEDA BY CNDDB.

Ecological:

Threats:

AREA HAS BEEN EXTENSIVELY DEVELOPED SINCE ORIGINALLY OBSERVED HERE.

General:

SITE IS BASED ON AN 1891 GREENE COLLECTION. CNPS REPORT ALSO STATES THAT PLANTS SEEN HERE IN 1936. PRESUMED EXTIRPATED.

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet):

County Summary:	Quad Summary:
Alameda	San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

CNP05U0001	CNPS - EAST BAY CHAPTER - DATABASE SUMMARY OF RARE PLANT LOCATIONS ASSEMBLED BY THE EAST BAY CHAPTER OF CNPS 2005-07-12
GRE91S0001	GREENE, E. - GREENE SN JEPS #980 1891-04-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 79221
EO Index: 80201
Key Quad: Oakland East (3712272)
Element Code: PDAST6G010
Occurrence Number: 45
Occurrence Last Updated: 2010-06-29

Scientific Name: *Monolopia gracilens*
Common Name: woodland woollythreads

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND, BROADLEAFED UPLAND FOREST, NORTH COAST CONIFEROUS FOREST.

Micro Habitat:

GRASSY SITES, IN OPENINGS; SANDY TO ROCKY SOILS. OFTEN SEEN ON SERPENTINE AFTER BURNS BUT MAY HAVE ONLY WEAK AFFINITY TO SERPENTINE. 100-1200 M.

Last Date Observed: 1888-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1888-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

OAKLAND HILLS AREA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN VICINITY OF OAKLAND HILLS.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A SPECIES CHECKLIST FROM EAST BAY CNPS RARE AND UNUSUAL PLANTS. NEEDS FIELDWORK.

PLSS: T02S, R02W, Sec. 07 (M)
Accuracy: 5 miles
Area (acres): 0
UTM: Zone-10 N4181572 E576752
Latitude/Longitude: 37.77827 / -122.12842
Elevation (feet):

County Summary:

Alameda, Contra Costa

Quad Summary:

Hayward (3712261), San Leandro (3712262), Las Trampas Ridge (3712271), Oakland East (3712272)

Sources:

BEH88U0001 BEHR, H. - OBSERVATION RECORD FOR MONOLOPIA GRACILENS, CALFLORA ID #XR3181 1888-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 34619
Key Quad: Oakland East (3712272)
Element Code: PDFAB0F8R1
Occurrence Number: 17
Occurrence Last Updated: 2011-02-16

Scientific Name: *Astragalus tener var. tener*
Common Name: alkali milk-vetch

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2T2
State: S2

General Habitat:
ALKALI PLAYA, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:
LOW GROUND, ALKALI FLATS, AND FLOODED LANDS; IN ANNUAL GRASSLAND OR IN PLAYAS OR VERNAL POOLS. 0-168 M.

Last Date Observed: 1928-03-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-03-08
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:
ALAMEDA.

Detailed Location:
EXACT LOCATION NOT KNOWN; MAPPED IN GENERAL VICINITY OF ALAMEDA. 3 COLLECTIONS AT THIS SITE: TIDESTROM #1898 (UC) IN 1895, E. GREENE SN (UNK. HERB) IN 1891, & GODDARD #4258 (UC) IN 1928.

Ecological:

Threats:

General:
SITE BASED ON HISTORICAL COLLECTIONS FROM "ALAMEDA". IN 2002 WITHAM SURVEYED ROBERT CROWN MEMORIAL SB, GENERAL SOUTH SIDE OF ALAMEDA, AND SHORELINE DRIVE. AREA ALL DEVELOPED, NO HABITAT OR PLANTS PRESENT.

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet): 20

County Summary:
Alameda

Quad Summary:
San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

GOD28S0001	GODDARD, D. - GODDARD #4258 UC #1076188 1928-03-24
GRE91S0003	GREENE, E. - GREENE SN DS #34826 1891-05-XX
LIS88U0001	LISTON, A. - LIST OF ASTRAGALUS TENER VAR. TENER COLLECTIONS. 1988-11-17
TID95S0001	TIDESTROM, I. - TIDESTROM #1898 UC #13469 1895-05-14
WIT02R0001	WITHAM, C. - ALKALINE VERNAL POOL MILK-VETCH STATUS SURVEY REPORT 2002-09-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 84582
Key Quad: Oakland East (3712272)
Element Code: PDFAB400R5
Occurrence Number: 28
Occurrence Last Updated: 2011-09-08

Scientific Name: *Trifolium hydrophilum*
Common Name: saline clover

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
MARSHES AND SWAMPS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:
MESIC, ALKALINE SITES. 0-300 M.

Last Date Observed: 1895-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1895-05-16
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Extirpated

Location:
ALAMEDA.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN GENERAL VICINITY OF ALAMEDA.

Ecological:

Threats:

General:
OCCURRENCE IS BASED ON HISTORIC COLLECTIONS FROM ALAMEDA FROM 1887, 1888, 1891, AND 1895. SITE LIKELY EXTIRPATED BY DEVELOPMENT.

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet):

County Summary:
Alameda

Quad Summary:
San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

GRE87S0014	GREENE, E. - GREENE SN JEPS #65738 1887-05-XX
GRE88S0010	GREENE, E. - GREENE SN UC #188460, JEPS #65745 1888-05-08
JEP91S0027	JEPSON, W. - JEPSON #13736 JEPS #65836 1891-05-10
TID95S0004	TIDESTROM, I. - TIDESTROM SN JEPS #65742 1895-05-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 79221
EO Index: 50139
Key Quad: Oakland East (3712272)
Element Code: PDFAB5Z030
Occurrence Number: 9
Occurrence Last Updated: 2014-07-18

Scientific Name: *Hoita strobilina*
Common Name: Loma Prieta hoita

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHAPARRAL, CISMONTANE WOODLAND, RIPARIAN WOODLAND.

Micro Habitat:
SERPENTINE; MESIC SITES. 60-975 M.

Last Date Observed: 1865-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1865-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
OAKLAND HILLS.

Detailed Location:
LOCATION INFORMATION IS VAGUE. MAPPED AS BEST GUESS AS A LARGE CIRCLE AROUND THE OAKLAND HILLS AREA.

Ecological:

Threats:

General:
ONLY SOURCE OF INFORMATION IS HISTORICAL 1865 COLLECTION BY TORREY. NEEDS FIELDWORK.

PLSS: T02S, R02W, Sec. 07 (M)
Accuracy: 5 miles
Area (acres): 0
UTM: Zone-10 N4181572 E576752
Latitude/Longitude: 37.77827 / -122.12842
Elevation (feet):

County Summary:
Alameda, Contra Costa

Quad Summary:
Hayward (3712261), San Leandro (3712262), Las Trampas Ridge (3712271), Oakland East (3712272)

Sources:

JEP36B0001 JEPSON, W. - A FLORA OF CALIFORNIA - VOLUME 2 1936-XX-XX

TOR65S0002 TORREY - TORREY #113 GH #366453 (CITED IN JEP36B0001, LAK96U0001) 1865-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 30367
Key Quad: Oakland East (3712272)
Element Code: PDPGN040Q2
Occurrence Number: 1
Occurrence Last Updated: 2015-08-28

Scientific Name: *Chorizanthe robusta var. robusta*
Common Name: robust spineflower

Listing Status: **Federal:** Endangered
State: None
Rare Plant Rank: 1B.1
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2T1
State: S1

General Habitat:

CISMONTANE WOODLAND, COASTAL DUNES, COASTAL SCRUB, CHAPARRAL.

Micro Habitat:

SANDY TERRACES AND BLUFFS OR IN LOOSE SAND. 9-245 M.

Last Date Observed: 1894-10-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1894-10-XX
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:

ALAMEDA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN VICINITY OF THE CITY OF ALAMEDA.

Ecological:

Threats:

URBANIZATION.

General:

SITE IS BASED ON HISTORIC COLLECTIONS FROM 1866 THROUGH 1894. THOUGHT TO BE POSSIBLY EXTIRPATED DUE TO EXTENSIVE DEVELOPMENT IN AREA SINCE COLLECTIONS WERE MADE. NEEDS FIELDWORK.

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet): 30

County Summary:

Alameda

Quad Summary:

San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

ANO91U0002	ANONYMOUS - CNPS EAST BAY CHAPTER RECOMMENDATIONS FOR THE FIFTH EDITION OF THE CNPS INVENTORY, RECOMMENDATIONS FOR ALA AND CCA ONLY. 1991-12-20
BOL66S0003	BOLANDER, H. - BOLANDER #1939 UC #52564, GH #369915 1866-07-04
GRE91S0004	GREENE - GREENE SN B, F, K, NDG, US (CITED IN REV89A0001) 1891-05-XX
JEP94S0002	JEPSON, W. - JEPSON SN JEPS #57739 1894-10-XX
KIN93S0001	KING, E. - KING SN UC #72682 1893-XX-XX
PAR87S0017	PARRY, C. - PARRY SN DS #17530 1887-XX-XX
PAR88S0008	PARRY, C. - PARRY 13(2) GH #369912, UC #85204 1888-XX-XX
REV89A0001	REVEAL, J. & C. HARDHAM - REVISION OF ANNUAL CHORIZANTHE. PHYTOLOGIA 66(2):98-198. 1989-05-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 88206
EO Index: 89212
Key Quad: Oakland East (3712272)
Element Code: PDPGN0L1C0
Occurrence Number: 18
Occurrence Last Updated: 2013-02-15

Scientific Name: *Polygonum marinense*
Common Name: Marin knotweed

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 3.1
Other Lists:

CNDDB Element Ranks: **Global:** G2Q
State: S2

General Habitat:
MARSHES AND SWAMPS.

Micro Habitat:
COASTAL SALT MARSHES AND BRACKISH MARSHES. 0-10 M.

Last Date Observed: 1863-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1863-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
OAKLAND.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS THE COASTAL AREAS OF OAKLAND.

Ecological:

Threats:

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A HOLDER COLLECTION, PRESUMABLY FROM 1863. NEEDS FIELDWORK.

PLSS: T01S, R04W, Sec. 36 (M)
Accuracy: 5 miles
Area (acres): 0
UTM: Zone-10 N4183914 E566319
Latitude/Longitude: 37.80019 / -122.24667
Elevation (feet):

County Summary:
Alameda, Contra Costa, San Francisco

Quad Summary:
San Leandro (3712262), Hunters Point (3712263), Oakland East (3712272), Oakland West (3712273)

Sources:
HOL63S0003 HOLDER, W. - HOLDER #2555 UC #6699 1863-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 20604
EO Index: 30366
Key Quad: Oakland East (3712272)
Element Code: PDROS0W043
Occurrence Number: 34
Occurrence Last Updated: 1997-03-03

Scientific Name: *Horkelia cuneata var. sericea*
Common Name: Kellogg's horkelia

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G4T2
State: S2?

General Habitat:

CLOSED-CONE CONIFEROUS FOREST, COASTAL SCRUB, COASTAL DUNES, CHAPARRAL.

Micro Habitat:

OLD DUNES, COASTAL SANDHILLS; OPENINGS. 10-200 M.

Last Date Observed: 1894-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 198X-XX-XX
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:

ALAMEDA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED AT CNDDB IN VICINITY OF THE CITY OF ALAMEDA.

Ecological:

Threats:

General:

SEVERAL COLLECTIONS FROM ALAMEDA AND ALAMEDA PARK BETWEEN 1868 AND 1894. AREA SEARCHED BY ERTTER IN 1980S OR 1990S BUT NO PLANTS FOUND. SPECIES WAS NOTED TO BE DISAPPEARING IN THIS AREA BY 1887 ACCORDING TO GREENE.

PLSS: T02S, R03W, Sec. 07 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4179913 E566792
Latitude/Longitude: 37.76411 / -122.24168
Elevation (feet): 20

County Summary:

Alameda

Quad Summary:

San Leandro (3712262), Oakland East (3712272), Oakland West (3712273)

Sources:

ERT91U0007	ERTTER, B. - PRINTOUT OF HORKELIA CUNEATA SSP. SERICEA COLLECTIONS. 1991-04-25
ERT91U0008	ERTTER, B. - LETTER TO CNDDB REGARDING HORKELIA CUNEATA SSP. SERICEA. 1991-06-24
ERT93U0002	ERTTER, B. - EXCERPTS FROM MANUSCRIPT ON HORKELIA INCLUDING COLLECTION INFORMATION 1993-XX-XX
GRE87S0002	GREENE - GREENE SN HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1887-05-XX
GRE87S0003	GREENE - GREENE SN HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1887-06-03
GRE90S0008	GREENE - GREENE SN HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1890-06-14
GRE92S0003	GREENE, E. - GREENE SN UC #12369 1892-06-16
KEL68S0001	KELLOGG - KELLOGG #212 HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1868-06-02
KEL69S0001	KELLOGG, A. - KELLOGG SN UC #12368 1869-06-14
KIN94S0001	KING, M. - KING SN UC #73068 1894-XX-XX
PAR88S0002	PARRY - PARRY HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1888-XX-XX
VAS76S0001	VASEY - VASEY SN HERBARIUM UNKNOWN (CITED IN ERT91U0007) 1876-05-13
VASNDS0001	VASEY - VASEY SN HERBARIUM UNKNOWN (CITED IN ERT91U0007) XXXX-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	42153	**EO Index:**	42153
Key Quad:	San Leandro (3712262)	**Element Code:**	PDSCR0J0C3
Occurrence Number:	20	**Occurrence Last Updated:**	2014-10-02

Scientific Name: *Chloropyron maritimum ssp. palustre*

Common Name: Point Reyes salty bird's-beak

Listing Status: **Federal:** None

State: None

Rare Plant Rank: 1B.2

Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G4?T2

State: S2

General Habitat:

COASTAL SALT MARSH.

Micro Habitat:

USUALLY IN COASTAL SALT MARSH WITH SALICORNIA, DISTICHLIS, JAUMEA, SPARTINA, ETC. 0-10 M.

Last Date Observed:	1921-08-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1991-08-25	**Occurrence Rank:**	None
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Possibly Extirpated		

Location:

ALAMEDA MARSH NEAR BAY FARM ISLAND.

Detailed Location:

EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS. BASED ON COLLECTIONS FROM "ALAMEDA MARSHES," BAY FARM ISLAND, AND "NEAR BAY FARM ISLAND."

Ecological:

Threats:

HABITAT VERY DEGRADED BY HISTORIC FILLING, RECENT BANK EROSION.

General:

LAST SEEN IN 1921. OLSON (1991) SEARCHED SEVERAL MARSHES IN THIS AREA (DAMON MARSH, DAMON SLOUGH, ELMHURST CREEK, SAN LEANDRO CR, ARROWHEAD MARSH, AIRPORT CHANNEL); FOUND NO CORDYLANTHUS MARITIMUS SSP PALUSTRIS. EXTIRPATED - SMITH (1996).

PLSS:	T02S, R03W, Sec. 17 (M)	**Accuracy:**	1 mile	**Area (acres):**	0
UTM:	Zone-10 N4178296 E568324	**Latitude/Longitude:**	37.74942 / -122.22443	**Elevation (feet):**	

County Summary:	**Quad Summary:**
Alameda	San Leandro (3712262), Oakland East (3712272)

Sources:

BRA17S0002	BRANDEGEE, K. & H. WALKER - BRANDEGEE SN UC #198535 1917-12-10
CAR00S0002	CARRUTH, W. - CARRUTH SN CAS #27931 1900-05-XX
EAS21S0011	EASTWOOD, A. - EASTWOOD #11064 CAS #27928 1921-08-07
JEP14S0002	JEPSON, W. - JEPSON #6152 JEPS #6762 1914-06-13
OLS91F0085	OLSON, B. - FIELD SURVEY FORM FOR CORDYLANTHUS MARITIMUS SSP. PALUSTRIS 1991-08-25
SMI96U0001	SMITH, D. - UPDATE COMMENTS ON SEVERAL PLANT TAXA. 1996-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25046
EO Index: 6238
Key Quad: Oakland East (3712272)
Element Code: PMLIL0V0C0
Occurrence Number: 51
Occurrence Last Updated: 2011-07-26

Scientific Name: *Fritillaria liliacea*
Common Name: fragrant fritillary

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND, COASTAL PRAIRIE, CISMONTANE WOODLAND.

Micro Habitat:

OFTEN ON SERPENTINE; VARIOUS SOILS REPORTED THOUGH USUALLY CLAY, IN GRASSLAND. 3-400 M.

Last Date Observed: 1920-04-11
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1920-04-11
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:

NEAR MILLS COLLEGE, OAKLAND.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN THE VICINITY OF MILLS COLLEGE.

Ecological:

Threats:

DEVELOPMENT.

General:

MOST OF THE LAND NEAR THE COLLEGE HAS BEEN DEVELOPED BUT THERE MAY BE REMNANT HABITAT IN THE HILLS EAST OF CAMPUS. AREA SHOULD BE FIELD CHECKED.

PLSS: T02S, R03W, Sec. 03 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-10 N4181739 E571921
Latitude/Longitude: 37.78017 / -122.18326
Elevation (feet): 200

County Summary:

Alameda

Quad Summary:

Oakland East (3712272)

Sources:

EHL20S0001 EHLERS, A. - EHLERS #545 UC #494240 1920-04-11

APPENDIX D.
FIELD FORM

CWHR HABITAT ELEMENT CHECKLIST

; which elements are present inside (I) and/or nearby but outside (O) of the study area in sufficient quantity and quality to support presence of a particular wildlife
.es. You may exclude elements (E) that are absent from the study area if excluded elements number less than the elements that are present.

	ACORNS - Fruit of an oak	X	LAYER, HERBACEOUS >10% herb. understory		SNAG, LARGE (ROTTEN) >30" dbh
	ALGAE - Any algae other than kelp		LAYER, SHRUB >10% shrub understory		SNAG, LARGE, (SOUND) >30" dbh
	AMPHIBIANS - Frogs, Toads, etc.		LAYER, TREE >10% subcanopy trees		SNAG, MEDIUM (ROTTEN) 15-30" dbh
	AQUATICS, EMERGENT		LICHENS		SNAG, MEDIUM (SOUND) 15-30" dbh
	AQUATICS, SUBMERGED		LITHIC - Rock scatter <10" diam.		SNAG, SMALL (ROTTEN) <15" dbh
X	BANK - Cut, hollow or lake border		LITTER - Residue <1" in diam.		SNAG, SMALL (SOUND) <15" dbh
X	BARREN - Devoid of veg. within veg. area		LOG, LARGE (HOLLOW) >20" diam.		SOIL, AERATED - Well drained
	BERRIES - Small, pulpy fruit		LOG, LARGE (ROTTEN) >20" diam.		SOIL, FRIABLE - Easily crumbled
	BIRDS, LARGE - > 450g (1lb)		LOG, LARGE (SOUND) >20" diam.		SOIL, GRAVELLY - Gravel 8-3" diam.
	BIRDS, MED. - 110-450g (4oz-1lb) lb111111111		LOG, MEDIUM (HOLLOW) 10-20" diam		SOIL, ORGANIC - >20% organic matter (wght.)
	BIRDS, SMALL - < 110g (4oz)		LOG, MEDIUM (ROTTEN) 10-20" diam.		SOIL, SALINE - Alkaline soils/veg.
	BOGS - Low-lying, residue rich areas		LOG, MEDIUM (SOUND) 10-20" diam.		SOIL, SANDY - Sand .05-2mm diam.
	BRUSH PILE - >1m high, >=15m^2 basal area		MAMMALS, LARGE - > 2270g (5lb.)		SPRINGS-Freshwater springs, seeps
X	BUILDINGS - Houses, sheds, etc.		MAMMALS, MED. - 110-2270g (4oz-5lb)		SPRINGS, HOT
	BURROW - Excavation made by animal		MAMMALS, SMALL - < 110g (4oz)		SPRINGS, MINERAL
	CAMPGROUND		MOSS - Bryophytes		STEEP SLOPE-Slopes > 50%
	CARRION - Any dead animal matter		MUD FLATS- contiguous with water body	X	STREAMS, INTERMITTENT
	CAVE - Natural chamber open to surface		NECTAR		STREAMS, PERMANENT
	CLIFF - Steep, vertical overhanging face		NEST BOX - Construc ted nesting cavity		STUMP (ROTTEN)-snag<3m (10') high
	CONES - From gymnosperm trees		NEST PLATFORM - Const. large platform		STUMP (SOUND)-snag<3m (10') high
	DUFF - Non-structured decaying matter		NEST ISLAND - Man-made nesting island		TALUS-Slope from rock accumulation
	DUMP - Sanitary landfill		NUTS - Hard-shelled, dry fruit.		TIDEPOOLS
	EGGS - Any bird or reptile eggs		PACK STATION - with assoc. human use		TRANSMISSION LINES
X	FENCES - Any type		PONDS - Permanent, <2ha (5 acres) surf. area	X	TREE LEAVES
	FERN - Spore-forming plants with fronds		REPTILES		TREE, BROKEN LIVE TOP >11" dbh
X	FISH		RIPARIAN INCLUSION - Riparian veg. (small)		TREE, W/ CAVITIES
	FLOWERS		RIVERS - Perm., >6m (20') wide in dry season		TREE, W/ LOOSE BARK
X	FORBS - Herbaceous dicotyledons		ROCK - Outcrop >10" diam.		TREE/AGRICULTURE - Interface
	FRUITS - Pulpy fruit		ROOTS		TREE/GRASS - Interface
	FUNGI - Mushrooms, molds, etc.		SALT PONDS - Saline ponds		TREE/SHRUB - Interface
	GRAIN - A single, hard cereal seed		SAND DUNE	X	TREE/WATER - Interface
	GRAMINOIDS - Grass-like plants		SAP		TREES, FIR - *Abies sp.* >11" dbh
	GRASS/AGRICULTURE - Interface		SEEDS - Other than listed above		TREES, HARDWOOD - >11" dbh
	GRASS/WATER - Interface		SHRUB/AGRICULTURE- Interface		TREES, PINE - *Pinus sp.* > 11" dbh
	INSECTS, FLYING - Insect eaten in air		SHRUB/GRASS - Interface		VERNAL POOLS
X	INSECTS, TERRESTRIAL		SHRUB/WATER - Interface	X	WATER - Any source of free water
	INVERTEBRATES		SHRUBS - Woody plants, not trees		WATER, FAST - Unsilted; >2ft/sec. flows
X	INVERTEBRATES, AQUATIC		SLASH, LARGE (ROTTEN) Residue 3-10" diam.		WATER, CREATED BODY - Guzzler, well, etc.
	JETTY - Rock/concrete extending into water		SLASH, LARGE (HOLLOW) Residue 3-10" diam.	X	WATER, SLOW - Some silt.; flows < .5ft/sec.
	KELP - Large, coarse, brown algae		SLASH, LARGE (SOUND) Residue 3-10" diam.		WATER/AGRICULTURE- Interface
	LAKES - Permanent > 2ha (5 acres)		SLASH, SMALL Residue 1-3" diameter		WHARF

	MINE - excavated for minerals

This is for the Penske project site, including Seminary Creek

August 25, 2016

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM
NON-WOODED HABITAT SAMPLING DATASHEET

Date: 8/25/16 Sample Crew: GM MV Plot Number: 1 Location: Pensk property adjacent Creek

Visual estimate before sampling; CWHR habitat type: Riverine (RIV) bank veg transect (north bank)

Standards For Size Classes						Standards For Canopy Closure		
CWHR Class	WHR Size Classes	Shrub Habitats (% Crown Decadence)	Herb. Habitats (Plant Ht. @ Maturity)	Palm Oasis & Joshua Tree (base diam. above bulge)	Desert Habitats (Plant Ht.)	CWHR Class	WHR Closure Class	Ground Cover (Canopy Closure)
1	Seedling shrub/tree Short herb Seedling tree	Seedlings or sprouts < 3 yrs old	≤ 12.0"	< 1.5"	< 2.0'	S	Sparse cover	10.0-24.9% Shrub; 2.0-9.9% Herb, Palm Oasis, Joshua Tree, & Desert types
2	Young shrub Tall herb Small shrub/tree	< 1.0% (None)	≥ 12.1"	1.5-19.9"(PO) 1.5-5.9" (JT)	2.0'-9.9'	P	Open cover	25.0-39.9% Shrub; 10.0-39.9% Herb, Palm Oasis, Joshua Tree, & Desert types
3	Mature shrub Large shrub/tree	1.0-24.9%		≥ 20.0" (PO) ≥ 6.0" (JT)	10.0'-19.9'	M	Mod. cover	40.0-59.9% all types
4	Decadent shrub	≥ 25.0%			≥ 20.0'	D	Dense cover	≥ 60.0% all types

Species, age, % decadence, height, and/or veg. canopy hits (+) or misses (-) from plots, grids or lines.

Stem or Pt. #	Species	Age	% Decadent	Ht. (in/ft)	hit or miss (+/-)	Stem or Pt. #	Species	Age	% Decadent	Ht. (in/ft)	hit or miss
1	saltgrass			8 inches	+	26	Salicornia			6in	+
2	gumplant			2 ft	+	27	none				
3	Salicornia			4 inches	+	28	gumplant			18in	+
4	greensucculent		- sample	1 foot	+	29	none				
5	"	"	"	18 in.	+	30					
6	distichlis			8 inches	+	31					
7	yellow flower		plant	4 ft.	+	32					
8	Hillman verene			2 ft.	+	33					
9	distichlis			6 in	+	34					
10	Salicornia			6 in	+	35					
11	greenbrown		sample	14 in	+	36					
12	none				-	37					
13	Avena sp.			3 ft.	+	38					
14	Salicornia			6 in	+	39					
15	none				-	40					
16	gumplant			2 ft	+	41					
17	gumplant			2 ft	+	42					
18	green-brown		- sample	16 in	+	43					
19	none				-	44					
20	distichlis			4 in	+	45					
21	none				-	46					
22	bromus sp.			8 in	+	47					
23	distichlis			6 in	+	48					
24	gumplant			2 ft	+	49					
25	none					50					

VEGETATION COVER MEASUREMENT

South side locust & 10% native trees

Vegetation cover measured along line transect or point intercept with 25-30 readings
Percent vegetation cover = 22 (# veg. hits/25 or 30) * 100 = 76% cover

22/29 x 100 = 76% cover along northern bank of creek

* two large eucalyptus trees along bank

south side of creek - no vegetation. - locust & other non-native trees only.

APPENDIX E.
FIELD SURVEY PHOTOS

Photos of August 25th 2016 Biological Resources Risk Assessment Survey

Photo 1: Eastern water quality survey spot (looking east) at mid-day low tide.

Photo 2: Eastern water quality survey spot (looking east) at evening high tide.

Photo 3: Western water quality survey area (looking west) at mid-day low tide.

Photo 4: Western water quality survey spot at evening high tide.

Photo 5: Western water quality survey spot (looking east) at evening high tide.

Photo 6: Eastern water quality survey spot at mid-day low tide with YSI water quality meter.

Photo 7: Storm water drain outlet within Seminary Creek coming south of the creek.

Photo 8: Storm water drain outlet within Seminary Creek coming from drainage canal south of the creek along the western edge of the site.

Photo 9: Drainage canal along western edge of site containing little to no water and wetland vegetation along the southern end of the canal within the site.

Photo 10: Commercial and recycling site characterized as Urban habitat with no vegetation.

Photo 11: Commercial and recycling site characterized as Urban habitat with no vegetation (trees are located along Seminary Creek within the Barren habitat.

Photo 12: Commercial and recycling site characterized as Urban habitat with no vegetation along the northern end of the site.