Remediation Management Services Company

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charles.carmel @bp.com

Date: May 24, 2016

To: Ms. Karel Detterman, Alameda County Environmental Health

Re: Conceptual Site Model, Sensitive Receptor Survey, and Case Closure Request
Former Atlantic Richfield Company Station #596A
1900 Webster Street, Oakland, California
ACEH Case RO0003100

Dear Ms. Detterman:

I am writing you on behalf of Atlantic Richfield Company related to Former Atlantic Richfield Company Station #596A. "I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Sincerely,

Chuck Carmel
Operations Project Manager
Remediation Management Services Company
An affiliate of Atlantic Richfield Company

CONCEPTUAL SITE MODEL, SENSITIVE RECEPTOR SURVEY, AND CASE CLOSURE REQUEST

Former Atlantic Richfield Company Station #596-A
1900 Webster Street
Oakland, Alameda County, California

Prepared for:

Mr. Chuck Carmel
Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583

Prepared by:

Broadbent & Associates, Inc.
1370 Ridgewood Dr., Suite 5
Chico, California 95973
(530) 566-1400

May 24, 2016

No. 14-90-103

BROADBENT
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broadbentinc.com

CREATING SOLUTIONS, BUILDING TRUST.

May 24, 2016

Project No. 14-90-103

Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: Conceptual Site Model, Sensitive Receptor Survey, and Case Closure Request, Former Atlantic Richfield Company Station No. 596-A, 1900 Webster Street, Oakland, Alameda County, California; ACEH Case No. RO0003100; Geo Tracker Global ID # T10000004348

Dear Mr. Carmel:

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Conceptual Site Model, Sensitive Receptor Survey, and Case Closure Request* (CSM, SRS, and CCR) for Former Atlantic Richfield Company Station No. 596-A located at 1900 Webster Street, Oakland, Alameda County (Site). This document was prepared in order to evaluate this Site for case closure under the *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). After completion of the CSM and SRS and comparing the current Site conditions to the LTCP, case closure is recommended.

Should you have questions or require additional information, please do not hesitate to contact us at (530) 566-1400.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Jason Duda
Senior Scientist

Matt Herrick, P.G., C.HG.
Associate Hydrogeologist

PROFESSIONAL GEOLOGIST
MATTHEW G. HERRICK
No. 8010
STATE OF CALIFORNIA

Enclosures

cc: Ms. Karel Detterman, P.G., Alameda County Environmental Health (Submitted via GeoTracker)
Electronic copy uploaded to GeoTracker

CONCEPTUAL SITE MODEL, SENSITIVE RECEPTOR SURVEY, AND CASE CLOSURE REQUEST

Former Atlantic Richfield Company Station No. 596-A
1900 Webster St. Oakland, CA 94583
ACEH Case No. RO0003100

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CONCEPTUAL SITE MODEL, SENSITIVE RECEPTOR SURVEY, AND CASE CLOSURE REQUEST
Former Atlantic Richfield Company Station No. 596-A
1900 Webster St. Oakland, CA 94583
ACEH Case No. RO0003100

1.0 INTRODUCTION

On behalf of the Former Atlantic Richfield Company– (ARC, a BP affiliated company) Broadbent & Associates, Inc. (Broadbent) has prepared this *Conceptual Site Model, Sensitive Receptor Survey and Case Closure Request* (CSM, SRS, and CCR) for Former Atlantic Richfield Company (ARC) Station No. 596-A (herein referred to as Station No. 596-A), located at 1900 Webster Street, Oakland, Alameda County (Site). The CSM, SRS, and CCR was prepared in order to evaluate the Site's eligibility to be closed under the California State Water Resources Control Board's (CSWRCB) *Low Threat Underground Storage Tank Case Closure Policy* (LTCP; CSWRCB, 2012). This CSM, SRS, and CCR includes discussions on the Site background, previous environmental activities, regional and Site geology and hydrogeology, potential sensitive receptors, and justification for case closure.

1.1 Site Setting

The Site was a former ARC-branded service station located at the northeastern corner of Webster Street and 19th Street in Oakland, California. A commercial building currently resides onsite and is occupied by Lake Merritt Dental. The location of the Site is presented in Drawing 1. A Site Plan that shows current and former well locations and borings is provided as Drawing 2.

The Site is located in a commercial area along Webster Street in central Oakland. The Site is bounded by the four-lane Webster Street to the west and two-lane 19th Street to the south. Commercial buildings are situated to both the north and east of the Site. The nearest body of water, Lake Merritt, is located approximately 960 feet to the east of the Site.

1.2 Site Background

On May 2, 2011 AEI Consultants (AEI) conducted a Phase I Environmental Site Assessment and according to their review the Site was historically occupied by a gasoline service station from approximately 1940 to 1966. The former gasoline service station was demolished and cleared in 1966, but no records were on file with the Oakland Building Department, Alameda County Environmental Health Services Department or Oakland Fire Department regarding removal of the underground storage tanks (USTs). Additionally, no documentation was found whether soil samples were collected and analyzed for the presence of petroleum hydrocarbon contamination following demolition of the station (AEI, 2011).

On July 20, 2011, AEI advanced three soil borings (SB-1 through SB-3) and collected five soil and three groundwater samples from the three locations, which are depicted on Drawing 2. Total Petroleum Hydrocarbons as Gasoline (TPH-g) in soil were reported in samples SB-3-16 and SB-3-20 at concentrations of 8.3 milligrams per kilograms (mg/kg) and 42 mg/kg, respectively. Total Petroleum Hydrocarbons as Diesel (TPH-d) in soil were reported in samples SB-2-16, SB-3-16, SB-3-20 at concentrations of 7.7 mg/kg, 6.5 mg/kg and 8.7 mg/kg, respectively. Total Petroleum Hydrocarbons as Motor Oil (TPH-mo) in soil were reported above the laboratory reporting limit in sample SB-2-16 at a concentration of 25 mg/kg. TPH-g and TPH-d in groundwater samples were reported at 59,000 micrograms per liter (µg/L) and 200,000 µg/L, respectively, in SB-3. Historic soil and groundwater laboratory analytical results from this investigation are included in Appendix A (AEI, 2011).

On August 22, 2012, SCHUTZE & Associates, Inc. (SCHUTZE) performed a Limited Phase II Subsurface Investigation by advancing two soil borings (B-1 and B-2) to 16.5 and 18 ft bgs in the interior of the south tenant space. TPH-g was detected in groundwater samples B1-18-W and B2-16.5-W at concentrations of 400 µg/L and 6,000 µg/L, respectively. TPH-d was detected in groundwater samples B1-18-W and B-2-16.5-W at concentrations of 1,100 µg/L and 3,800 µg/L, respectively. Ethylbenzene and Xylenes were detected in the groundwater sample from B2-16.5-W at concentrations of 210 µg/L and 680 µg/L, respectively. Benzene, toluene and MTBE were not detected in soil and groundwater samples. The results from this Limited Phase II Subsurface Investigation can be found in Appendix A (SCHUTZE, 2012).

In 2013, P&D Environmental, Inc. (P&D) conducted a subsurface investigation onsite which included the advancement of eight borings (B-4 through B-8, B-11, B-13, and B-14) to facilitate the collection of soil and groundwater samples. However, groundwater samples were only collected from borings B-5, B-6, and B-8 due to refusal or the absence of groundwater. Slightly elevated concentrations of TPH-G and TPH-D were observed in the groundwater sample collected from boring B-5. Minor petroleum hydrocarbon impacts to soil were observed in soil samples collected from several of the borings. Based on known hydrocarbon impacts to an upgradient property located at 1750 Webster Street and the lack of evidence of a historical release at the subject Site, P&D recommended no further investigation of the Site. Results from this investigation are provided in Appendix A (P&D, 2014).

In 2015, Broadbent conducted additional Site assessment activities in order to further evaluate potential impacts to soil, groundwater, and soil vapor at the Site. Results of the investigation suggested that residual impacts reside primarily in the groundwater within the north-northeastern portion of the Site. The highest GRO concentrations were observed within the vicinity of boring SB-6 (11,000 µg/L) and further downgradient boring SB-7 (3,100 µg/L). Upgradient borings SB-4, SB-5, and SB-8 were non-detect for each constituent analyzed. Benzene was only detected in offsite, upgradient boring SB-10 at a concentration of 140 µg/L. GRO was also observed in offsite, upgradient borings SB-9 and SB-10. However, these concentrations are believed to be from offsite sources upgradient of the Site and based on the absence of hydrocarbon impacts in samples collected from borings SB-4, SB-5, and SB-8, these impacts do not appear to be affecting the Site. Soil and soil vapor analytical results indicated that concentrations were below ESLs or applicable LTCP criteria. These data indicate minimal to no risk for the onsite building occupants from potential petroleum vapor intrusion to indoor air, outdoor air exposure or potential direct contact with soil. A summary of this data is provided in Tables 2-4 and Drawings 3 and 4.

Historic soil and groundwater data are presented in Appendix A. Copies of available soil boring and monitoring well construction logs are provided in Appendix B. Sensitive receptor survey data is included in Appendix C. Drawings 3 and 4 present isoconcentration maps for GRO and Benzene, respecively. Drawings 5, 6 and 7 depict geologic cross-sections of the Site.

1.3 Document Purpose and Organization

The purpose of this document is to summarize and present current Site conditions in the form of a CSM and SRS and evaluate these conditions and data gathered for Site closure based on the LTCP. The following section presents the results of the SRS and Section 3.0 provides justification for closure based on the CSM. The CSM is presented as Table 1. Tables 2, 3, and 4 present recent soil, groundwater, and soil vapor analytical results.

In order to evaluate Site conditions against the LTCP, each category in the policy has been individually evaluated using the data presented in the CSM (Table 1). These evaluations are presented in the

following sections.

2.0 SENSITIVE RECEPTOR SURVEY

This SRS was conducted in February and March 2016 and the results are presented as follows.

This SRS was conducted within a 2,000-foot radius of the Site. The initial stage of the survey consisted of a well search implemented through the Department of Water Resources - Northern Region (DWR) and the Alameda County Public Works Agency (ACPWA).

An underground utilities survey was not conducted as part of this SRS. Depth to water observed at the Site has ranged from approximately 16 to 25 ft bgs. Since underground utilities are typically encountered at a maximum depth of 10 feet bgs, it is not anticipated that underground conduits and/or trenches may act as preferential contaminant migration pathways.

2.1 Water Supply Well Search

Broadbent requested a well search through the DWR and Alameda County Public Works Agency ACPWA databases to determine the locations and quantity of wells located within a 2,000 foot radius of the Site. DWR and ACPWA provided an extensive list of well completion reports including water supply, groundwater monitoring, extraction, and cathodic wells.

Well Driller's Reports obtained from the DWR and ACPWA were reviewed and efforts were made to identify all water supply wells, and those of unknown use, located within the 2,000 foot search radius. A variety of wells were identified in this search but many were disregarded as they are not considered sensitive receptors; well types which were disregarded included monitoring wells, cathodic wells, extraction wells, and wells abandoned by permit. A total of eight wells were identified as sensitive receptors within the search radius. The breakdown by use of these wells is as follows: two irrigation wells, one domestic well, and five wells of unknown use. The location of wells identified in the DWR and ACPWA well database searches are depicted on Drawing C-1, and a basic summary of the well reports are provided in Appendix C (Table C-1). Copies of Well Driller's Reports are confidential and are not provided in this report.

2.2 Surface Water Bodies

Surface water bodies were located using satellite images available on Google Maps and USGS topographic maps. The closest potential surface water body within the 2,000 foot search radius is a large tidal lagoon called Lake Merritt. Lake Merritt is located approximately 960 feet to the east of the Site, in a general cross-gradient direction of estimated groundwater flow.

2.3 Ecological Receptors

The Site is located within the City of Oakland, in an area zoned for business use. Accordingly, areas surrounding the Site are developed, paved, and/or occupied by structures with a limited area of landscaping. The nearest riparian habitat is Lake Merritt located approximately 960 east of the Site.

Burrowing mammals typically burrow at depths up to 6.5 feet bgs and may have the potential to encounter localized contaminated media; however, based on the current use of the property and surrounding area, the presence of burrowing animals is expected to be minimal to non-existent. No protected species of flora or fauna are known or expected to be present in the developed or disturbed

areas within the City of Oakland. Areas not paved or occupied by Site structures in the immediate area are typically landscaped or remain undeveloped and cleared of vegetation.

Broadbent performed a search for protected animal and plant species within the Oakland West quadrangle on the Department of Fish and Game's California Natural Diversity Database. The database search results were generated using the Quick Viewer application on the website and are presented in Appendix C (Table C-2). The results of the database search indicated nine different species that have endangered or threatened status within the state; however, impacts associated with Station #596-A are not expected to affect these protected species.

2.4 Schools and Hospitals

Five schools or daycares were identified within the 2,000 foot search radius of the Site:

- Little Star Preschool, located approximately 2,000 feet to the South-Southeast of the Site.
- Smalltrans Depot, located approximately 1,500 feet to the North-Northeast of the Site
- New Day Preschool and Learning Center, located approximately 1,900 feet to the North-Northwest of the Site.
- Starlite Child Development Center, located approximately 1,600 feet to the South of the Site.
- Oakland School for the Arts, located approximately 1,300 feet to the West-Northwest of the Site.

Four hospitals or medical centers were identified within the 2,000 foot search radius of the Site:

- Fresenius Medical Care at Kaiser, located approximately 350 feet to the Northwest of the Site.
- MD at Bedside, located approximately 510 feet to the West-Southwest of the Site.
- Order of Malta Oakland, located approximately 1600 feet to the Northeast of the Site.
- Pacific Health Clinic, located approximately 180 feet to the North of the Site.

The locations of the schools and hospitals within the search radius are provided in Appendix C (Drawing C-1).

2.5 Sensitive Receptor Survey Conclusions

The following conclusions are based on the data available at the time that this survey was performed and Broadbent's general knowledge of existing conditions at the Site.

- Groundwater contamination at the Site has previously been identified at concentrations above water quality objectives.

- One domestic well, two irrigation wells and five wells of unknown use were identified within the 2,000 foot search radius.

- Five schools and daycares were identified within the search area.

- Four hospitals and medical centers were identified within the search area.

The potential impact to water supply wells within the search radius is possible; however, the likelihood of contamination is minimal. The predominant lateral hydraulic gradient at the Site is in the north to northeast direction, which has been inferred based on topography and investigation reports completed

on other nearby open cases. In this general direction there are two wells (Drawing C-1, ID's 2 and 3), both located over 1,500 feet from the Site. The closest well to the Site is an irrigation well located approximately 900 feet east-southeast of the Site, in a general cross-gradient direction. The remaining wells are either in an up gradient or cross-gradient direction from the Site and near the 2,000 feet boundary. Considering the size and isolated nature of the contaminant plume onsite, there appears to be little to no potential of impact from the Site.

The schools identified in this survey are not expected to be impacted from Site contaminates. Four schools are located in the up gradient or cross-gradient direction from the Site and an average of 1,700 feet from the Site. One school is located down gradient, but is more than 1,500 feet from the Site. Four hospitals or medical centers were identified within the 2,000 foot radius, the closest located approximately 200 feet north of the Site. However, due to the length of the plume associated with the Site and the fact that the area is connected to municipal water through East Bay Municipal Utilities District, there appears to be little to no potential of contaminant impact from the Site.

Data collected from the SRS and Site groundwater and soil investigations indicates a minimal threat to receptors.

3.0 JUSTIFICATION FOR SITE CLOSURE

As indicated in Section 1.3 above, the Site was evaluated for Closure based on comparing data presented in the CSM (Table 1) against the LTCP (CSWRCB, 2012). Closure criteria in the LTCP are organized into the following categories:

- General Criteria
- Media Specific Criteria - Groundwater
- Media Specific Criteria - Petroleum Vapor Intrusion to Indoor Air
- Media Specific Criteria - Direct Contact and Outdoor Air Exposure

The following sections present the details of the evaluation.

3.1 General Criteria

The general criteria relate to the Site use, presence of free product, sources, and completeness of the Site understanding. As evidenced in the data presented in the CSM, a good understanding of Site conditions, on- and offsite receptors, and Site history has been established. These general criteria and a discussion on how the Site is consistent with these criteria are presented below.

The unauthorized release is located within the service area of a public water system
The Site is located within the East Bay Municipal Utilities District Service Area***.***

The unauthorized release consists only of petroleum
The release at the Site occurred presumably from the former USTs. The Site was a gasoline service station from approximately 1940 until 1966. According to the SCHUTZE investigation report, there is no indication of any other contaminant releases other than petroleum (SCHUTZE, 2012).

The unauthorized release has been stopped
According to AEI Phase I Environmental Site Assessment, there were no records on file at the Oakland Building Department, Alameda county Environmental Health Services Department, or Oakland Fire

Department relating to the removal of USTs associated with the Site (AEI, 2011). According to the P&D investigation report, Mr. Buttner suggested that if the USTs had not been removed at the time of service station demolition, then they would have been removed at the time of foundation system construction for the existing building onsite. No USTs have been encountered during any of the investigations conducted for the Site (P&D, 2013).

Free product has been removed to the maximum extent practicable
No free product has been encountered at the Site during any of the investigations that were conducted.

A conceptual site model (CSM) that assesses the nature, extent, and mobility of the release has been developed
A CSM has been prepared for this Site and is presented as Table 1.

Secondary source has been removed to the extent practical

According to Mr. Buttner, the site has been excavated to several feet on the south side of the parcel adjacent to 19th Street following demolition of the gasoline station and in preparation for construction of the new building onsite. He also did not recall contaminated soil being encountered during Site grading for building construction.

Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code 25296.15

Soil and groundwater samples collected have been analyzed for methyl tert-butyl ether (MTBE). However, it should be noted that observed impacts of MTBE in soil or groundwater samples collected during Site investigations are not associated with previous ARC operations at the Site, as MTBE was not utilized as a gasoline additive while the gasoline station Table 2 and 3 contains the soil and groundwater results from the recent investigation. Historical MTBE analytical data are included in Appendix A.

Nuisance as defined by the Water Code section 13050 does not exist at this Site

A nuisance as defined by the water code does not exist at this Site.

3.2 Media-Specific Criteria - Groundwater

The Low Threat UST Closure Policy lists five scenarios for groundwater. According to the plume size indicated in Drawing 3, the onsite plume for GRO appears to be less than 100 feet in length, as measured from the presumed source area (vicinity of historic boring SB-3). However, due to the degradation observed between the concentration detected in SB-6 (11,000 µg/L) when compared to the concentration observed in SB-7 (3,100 µg/L), it can be inferred that the GRO plume does not extend much further offsite past SB-7, as depicted in Drawing 3. Additionally, investigations to the northeast of the Site are not possible due to the presence of multiple large commercial buildings and the potential presence of additional offsite sources. The plume appears to be defined to the extent practicable in the down gradient direction (further northeast of boring SB-7).Therefore, the Site appears to qualify for low-threat closure under Scenario 1, as the Benzene plume is also far less than 100 feet in length. The GRO and Benzene concentrations observed in offsite borings SB-9 and SB-10 have been attributed to known, upgradient offsite sources, due to the absence of hydrocarbon impacts observed in onsite borings SB-4, SB-5, and SB-8. No free product has been encountered during investigations associated with the Site. The closest well to the Site is an irrigation well located approximately 900 feet east-southeast of the

Site. Additionally, the closest surface water body, Lake Merritt, is located 960 ft to the northeast of the Site. Based on these criteria, the Site is eligible for closure under the LTCP groundwater category 1.

3.3 Media Specific Criteria – Petroleum Vapor Intrusion to Indoor Air

The soil vapor sampling results from February 25, 2015 indicate that petroleum compounds that were detected were well below Tier 1 risked-based screening levels and soil gas criteria presented in the LTCP Scenario 4 for direct measurement of soil gas concentrations . In addition, Benzene concentrations in groundwater onsite are well below the LTCP criteria of 100 µg/L and a bioattenuation zone of soil not impacted by hydrocarbons greater than five feet in length exists at the Site. Therefore, it is believed that vapor intrusion is unlikely to pose a potential risk at the subject property.

3.4 Media Specific Criteria – Direct Contact and Outdoor Air Exposure

For the direct contact and outdoor air exposure, only relatively current soil data was considered. Benzene concentrations historically have not been detected in the soil borings associated with the Site. In the recent investigation, benzene was detected in SB-10 at a depth of 19 feet but as mentioned earlier, SB-10 is located offsite and is suspected to originate from an upgradient source; thus unlikely impacting the Site. In addition, this sample was likely collected below the groundwater table and could have been impacted by concentrations present in the groundwater. Ethylbenzene and Napthalene have been detected in four (4) of the soil borings but at depths greater than 13 feet, therefore meeting LTCP requirements.

Table A: Representative Maximum Concentrations of Benzene and Ethylbenzene in Soil Samples - 0 to 10 feet bgs

Sample ID	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Naphthalene (mg/kg)
SB-4-3	3.0	2/2/2015	ND<0.0020	ND<0.0020	ND<0.0049
SB-4-7	7.0	2/2/2015	ND<0.0020	ND<0.0020	ND<0.0049
SB-5-3	3.0	2/3/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-5-7	7.0	2/3/2015	ND<0.0019	ND<0.0019	ND<0.0049
SB-6-3	3.0	2/3/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-6-7	7.0	2/3/2015	ND<0.0019	ND<0.0019	ND<0.0047
SB-7-3	3.0	2/3/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-7-7	7.0	2/3/2015	ND<0.0019	ND<0.0019	ND<0.0047
SB-8-3	3.0	2/3/2015	ND<0.0020	ND<0.0020	ND<0.0049
SB-8-7	7.0	2/3/2015	ND<0.0019	ND<0.0019	ND<0.0049
SB-9-3	3.0	2/2/2015	ND<0.0019	ND<0.0019	ND<0.0047
SB-9-7	7.0	2/2/2015	ND<0.0020	ND<0.0020	ND<0.0049
SB-10-3	3.0	2/2/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-10-7	7.0	2/2/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-1A-3.5	3.5	2/4/2015	ND<0.0020	ND<0.0020	ND<0.0049
SB-1B-3	3.0	2/4/2015	ND<0.0019	ND<0.0019	ND<0.0047
SB-2A-3.5	3.5	2/4/2015	ND<0.0020	ND<0.0020	ND<0.0050
SB-2B-3.5	3.5	2/4/2015	ND<0.0020	ND<0.0020	ND<0.0050
LTCP Maximum* (0-5/5-10 feet bgs):			**8.2/12**	**89/134**	**45/45**

*Under a commercial/industrial exposure setting

mg/kg = milligrams per kilogram

Based on the data presented herein, residual petroleum impacts in shallow soil are not present onsite. Therefore, no risk via direct contact or outdoor air exposure exists at the Site. Historic and more recent soil data are provided in Table 2 and Appendix A.

3.5 Recommendation for Case Closure

As presented above and in the attached CSM table (Table 1), this Site appears to meet applicable criteria for case closure under the LTCP. Numerous Site investigations since 2011 have shown that petroleum hydrocarbons associated with the Site have exhibited a decreasing trend. Adequate Site characterization both on- and offsite, evaluation of receptors, historical descriptions, and technical analysis have been performed at the Site and in this document to support a recommendation for case closure. We hereby recommend that a determination of No Further Action be made for this Site.

4.0 REFERENCES

AEI Consultants, Inc., August 8, 2011. Phase II Subsurface Investigation, 1900 Webster Street, Oakland, California. Prepared for Dr. Farah Rana.

Broadbent & Associates, Inc., August 20, 2014. Addendum to Groundwater Investigation and Vapor Intrusion Assessment Work Plan, 1900 Webster Street, Oakland, California. Prepared for Ms. Karel Detterman.

California Department of Toxic Substances Control (DTSC), April 2012. Advisory – Active Soil Gas Investigations.

P&D Environmental, Inc., June 11, 2013. Subsurface Investigation Report, 1900 Webster Street, Oakland, California. Prepared for Karel Dettermen.

Regional Water Quality Control Board, San Francisco Bay Region, Groundwater Committee, June 1999. Easy Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA.

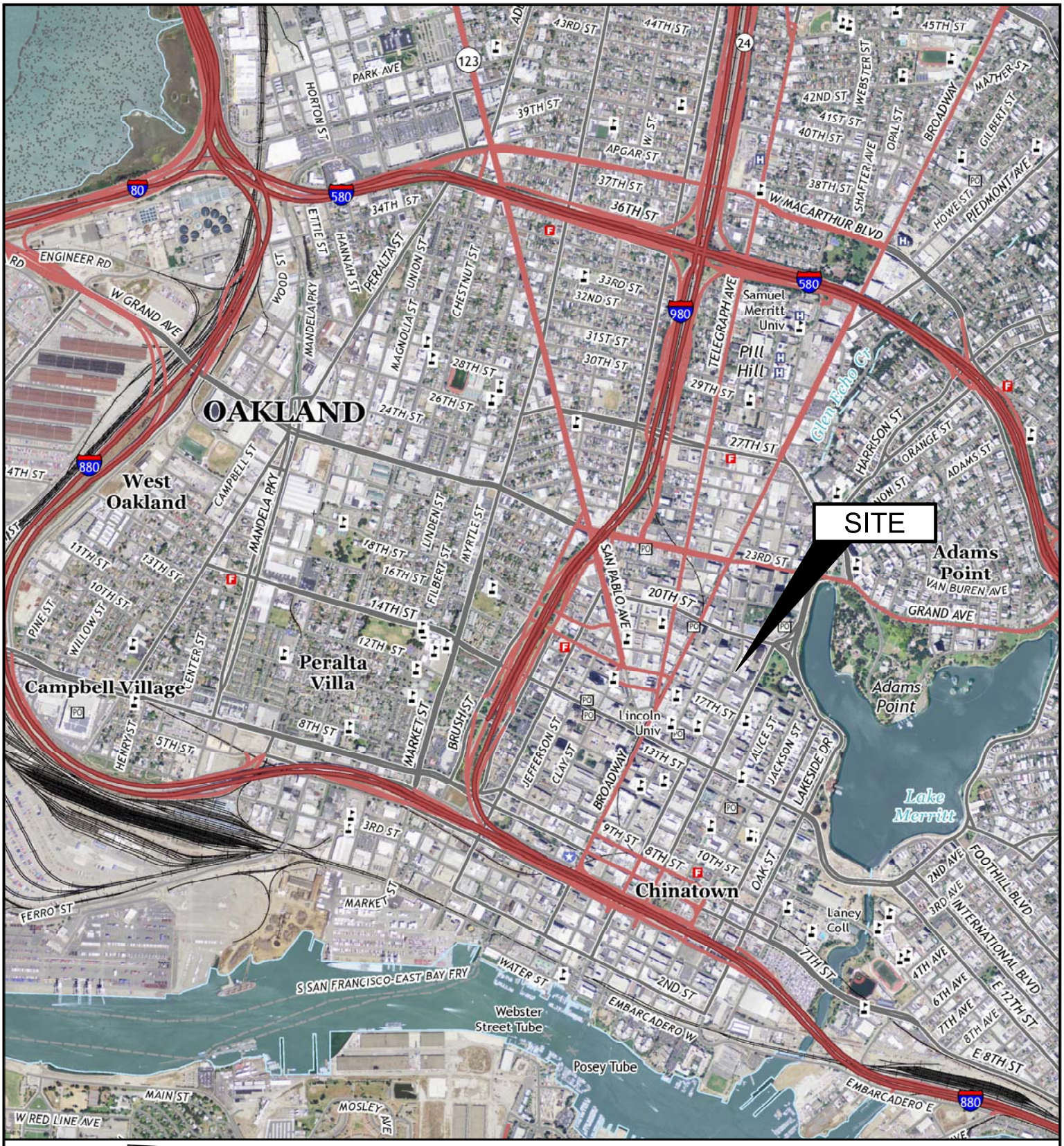
R.W. Graymer, 2000, Geologic map and map database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California: U.S. Geological Survey Miscellaneous Field Studies MF–2342, scale 1:50,000. (Available at http://pubs.usgs.gov/mf/2000/2342/.)

SCHUTZE & Associates, Inc., September 21,2012. Phase I Environmental Site Assessment and Limited Phase I Subsurface Investigation, 1900 Webster Street, Oakland, California. Prepared for Mr. Ted Buttner.

SFBRWQCB, 2013. Environmental Screening Levels – San Francisco Bay Regional Water Quality Control Board

State Water Resources Control Board, 2012. Low-Threat Underground Storage Tank Case Closure Policy, August 17.

DRAWINGS



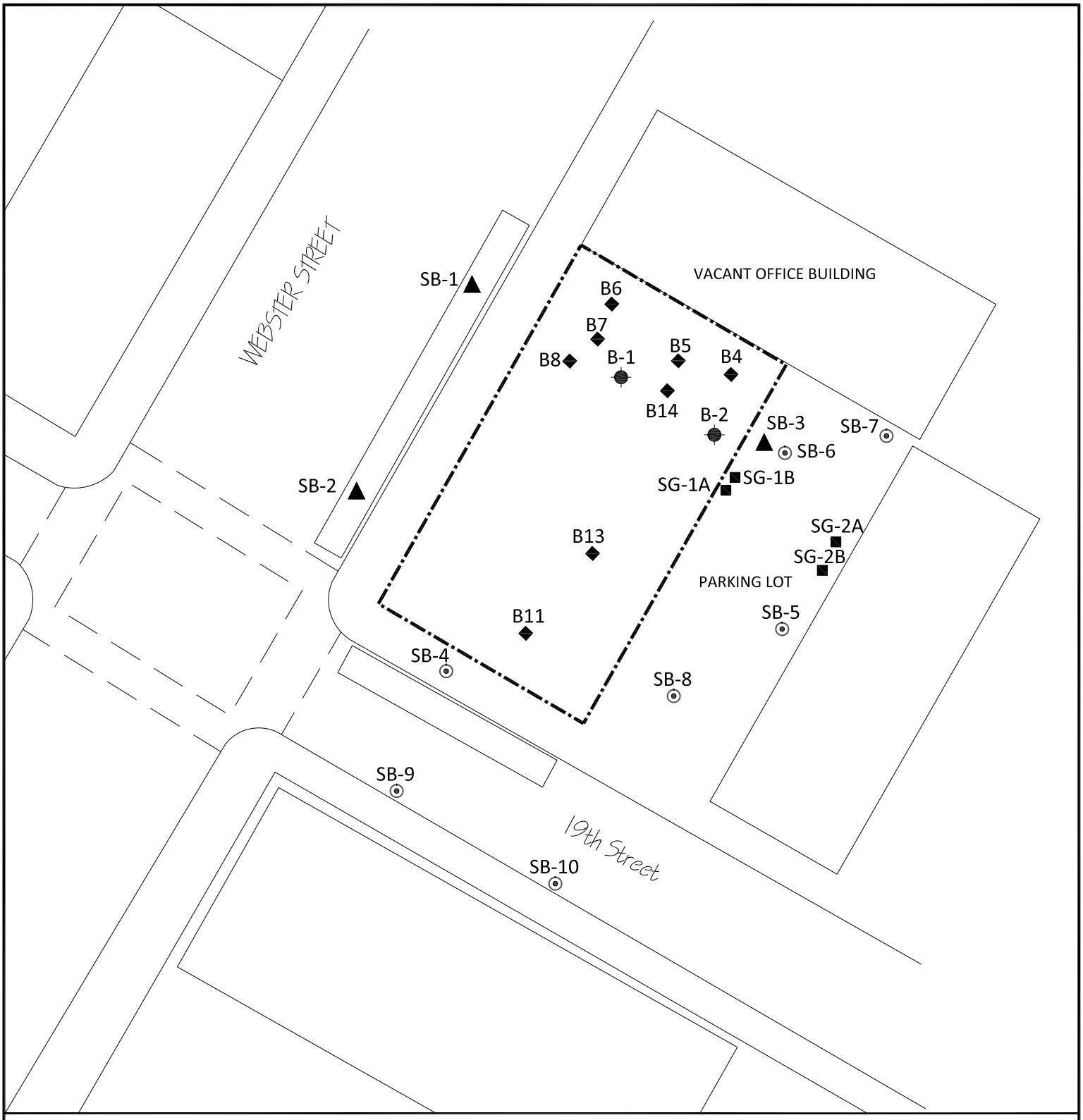
N

0 2000 4000

APPROXIMATE SCALE (ft)

IMAGE SOURCE: USGS

BROADBENT 1370 Ridgewood Dr., Suite 5 Chico, CA 95973 Project No.: 14-10-103 Date: 5/24/2016	Station #596-A 1900 Webster Street Oakland, California	Site Location map	Drawing 1



LEGEND

- 2011 AEI Soil Boring Locations
- 2012 SCHUTZE Soil Boring Locations
- 2013 P&D Soil Boring Locations
- 2015 Broadbent Soil Boring Locations
- 2015 Broadbent Soil Vapor Point Locations
- Subject Property

0 40 80

SCALE (ft)

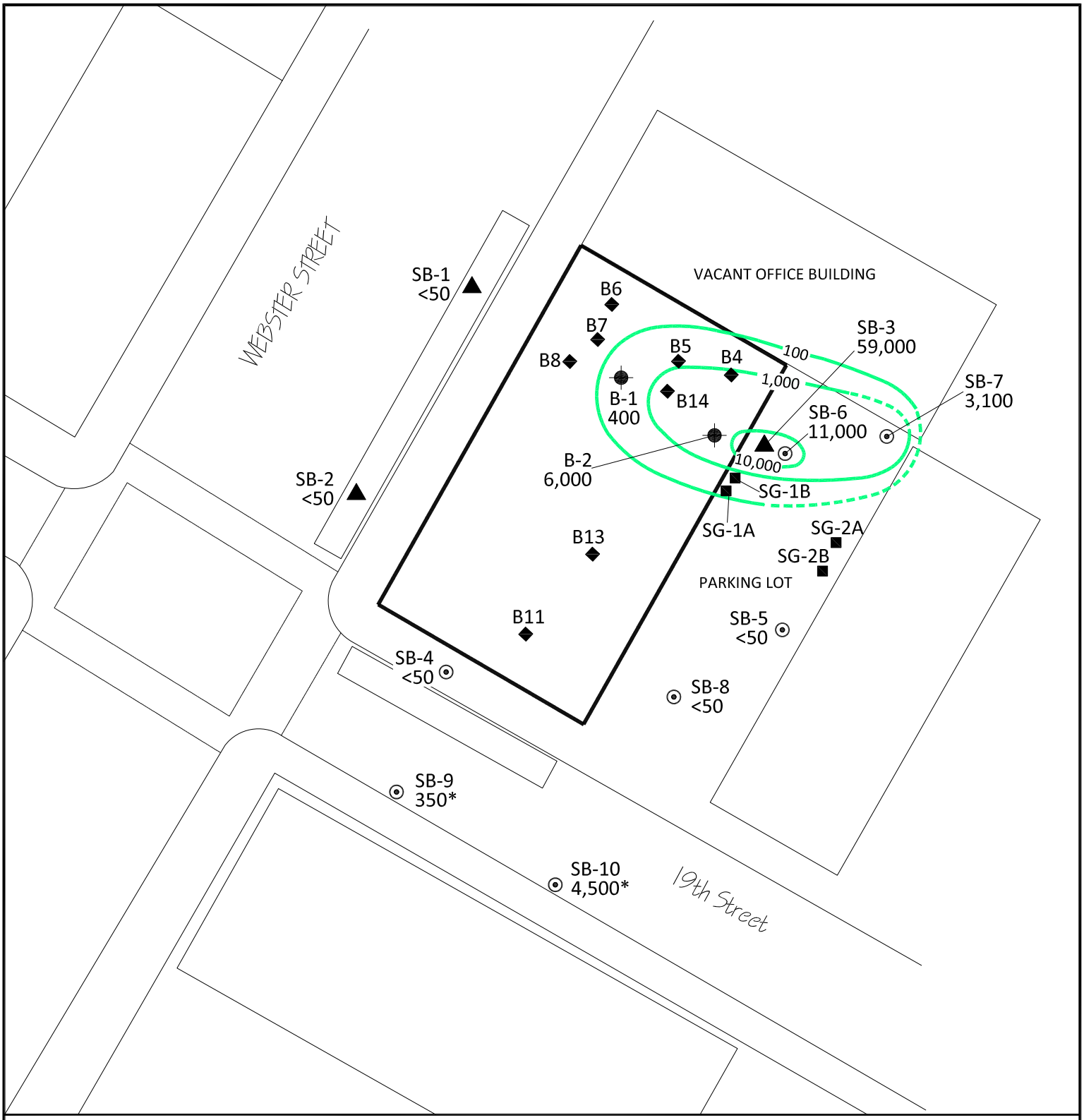
N

BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, CA 95973
Project No.: 14-10-103 Date: 5/13/2016

Station #596-A
1900 Webster Street
Oakland, California

Site Map with Soil Borings and Soil Vapor Points

Drawing
2



LEGEND

- 2011 AEI Soil Boring Locations
- 2012 SCHUTZE Soil Boring Locations
- 2013 P&D Soil Boring Locations
- 2015 Broadbent Soil Boring Locations
- 2015 Broadbent Soil Vapor Point Locations
- 100 — GRO Isoconcentration Contour
- 3,100 — GRO Concentration in µ/L
- Subject Property
- * Concentrations not utilized for contouring purposes due to association with ungradient source

0 40 80
SCALE (ft)

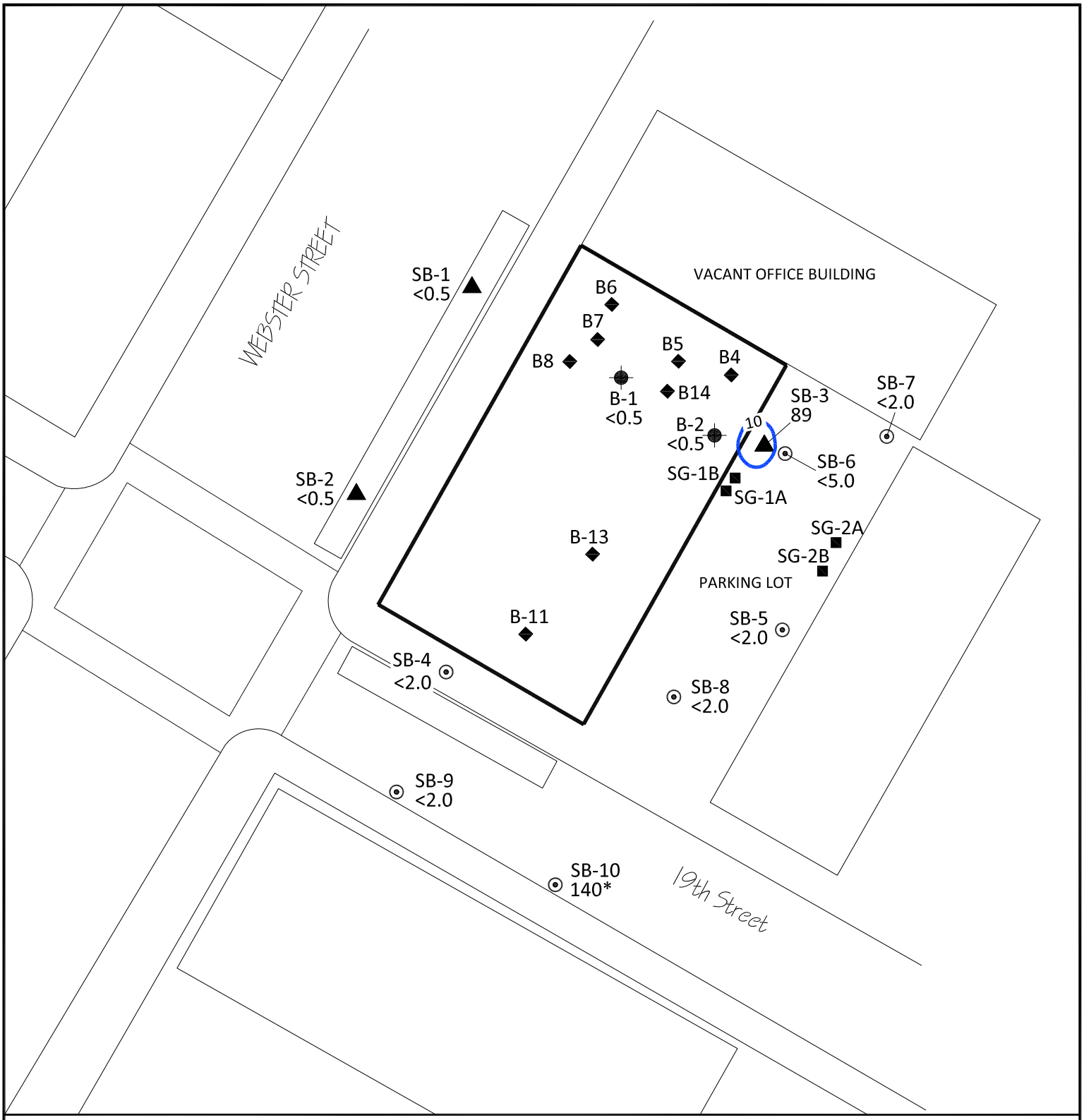
N

BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, CA 95973
Project No.: 14-10-103 Date: 5/13/2016

Station #596-A
1900 Webster Street
Oakland, California

GRO Isoconcentration Contour Map

Drawing
3



LEGEND

- 2011 AEI Soil Boring Locations
- 2012 SCHUTZE Soil Boring Locations
- 2013 P&D Soil Boring Locations
- 2015 Broadbent Soil Boring Locations
- 2015 Broadbent Soil Vapor Point Locations
- 10 — GRO Isoconcentration Contour
- 89 — GRO Concentration in µ/L
- Subject Property
- * Concentration not utilized for contouring purposes due to association with ungradient source

0 40 80
SCALE (ft)

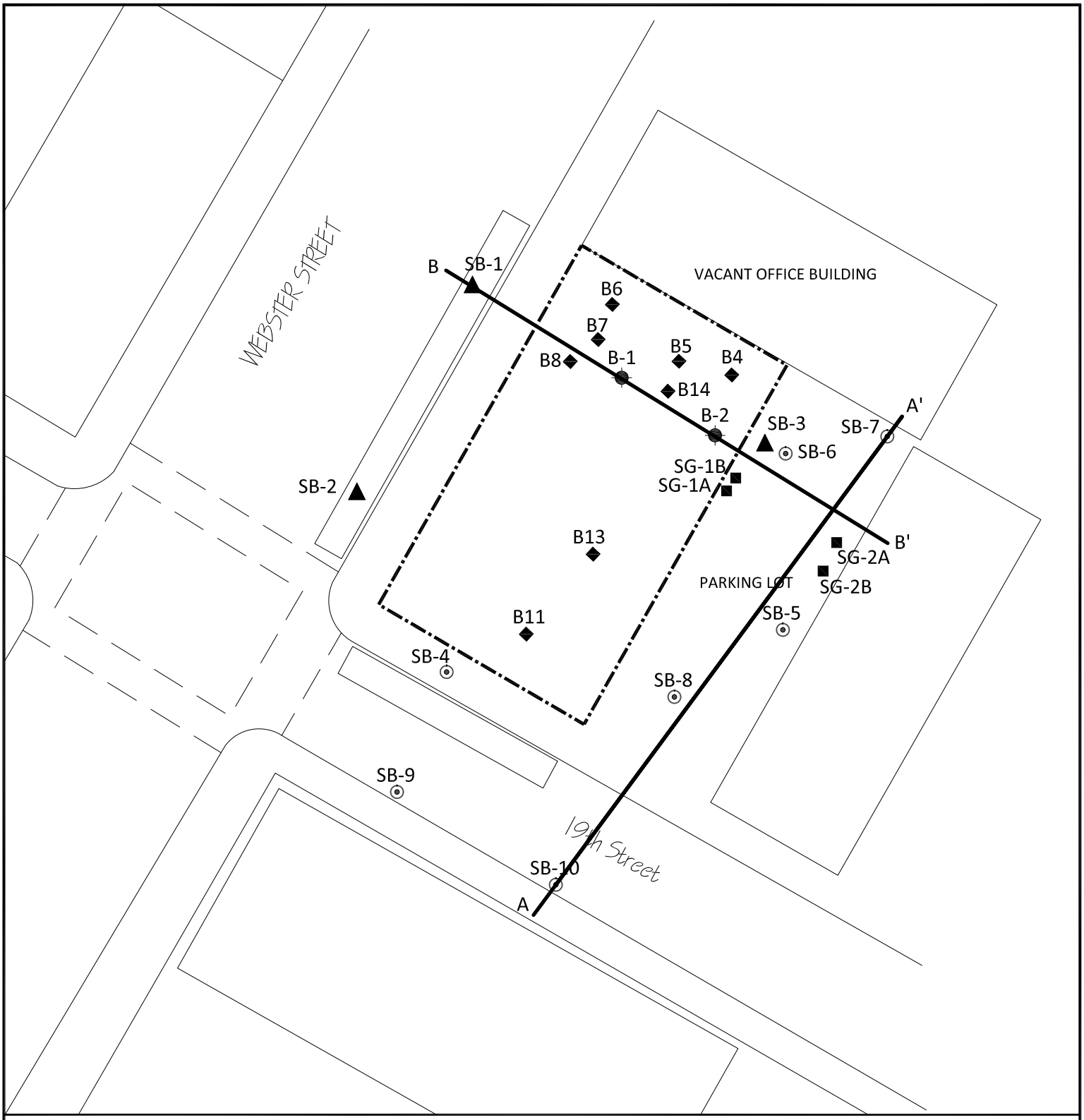
N

BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, CA 95973
Project No.: 14-10-103 Date: 5/13/2016

Station #596-A
1900 Webster Street
Oakland, California

Benzene Isoconcentration Contour Map

Drawing
4



LEGEND

- 2011 AEI Soil Boring Locations
- 2012 SCHUTZE Soil Boring Locations
- 2013 P&D Soil Boring Locations
- 2015 Broadbent Soil Boring Locations
- 2015 Broadbent Soil Vapor Point Locations
- Subject Property

0 40 80

SCALE (ft)

N

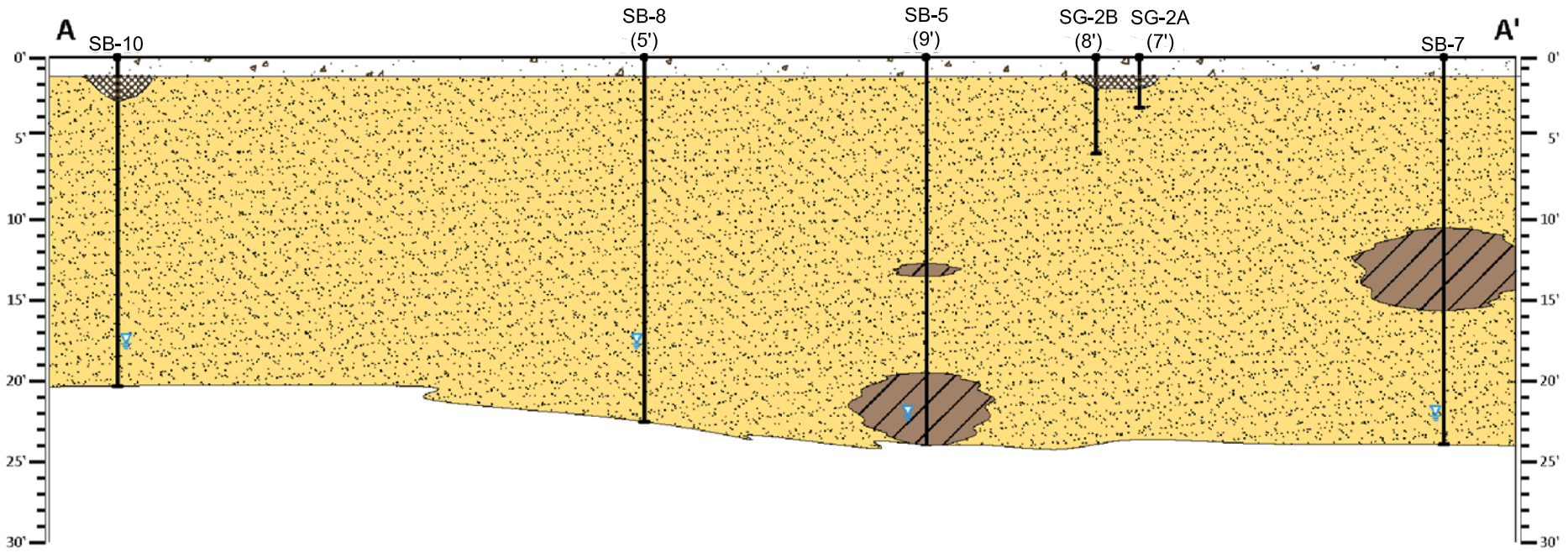
BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, CA 95973

Project No.: 14-10-103 Date: 5/13/2016

Station #596-A
1900 Webster Street
Oakland, California

Cross Section Location Map

Drawing 5



Legend

- Asphalt/Concrete
- Base Rock/Fill
- Sand, Silty Sand
- Clay, Sandy Clay

- First Encountered Groundwater
- SB-8 (5') — Well ID and Approximate Distance from Projection Line

0 20 40

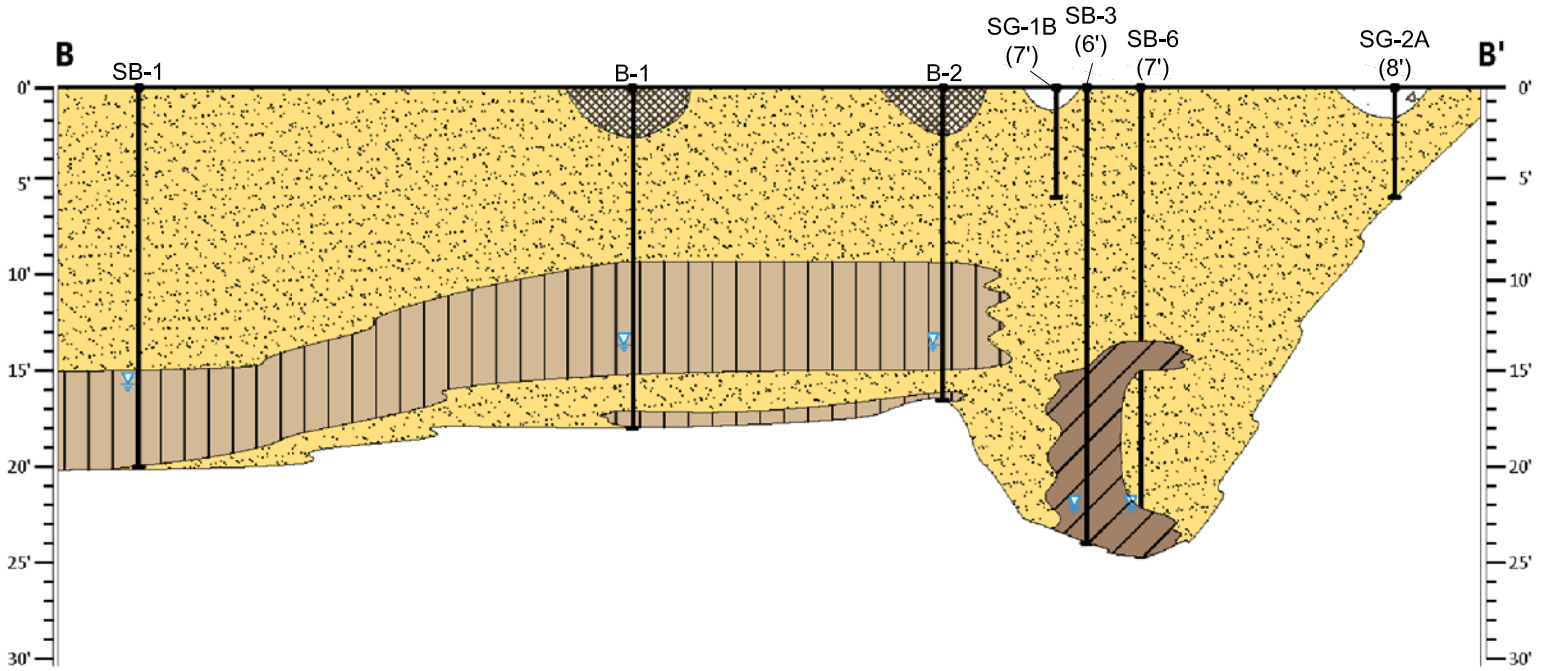
HORIZONTAL SCALE (ft)
VERTICAL EXAGGERTATION 2:1

BROADBENT
1370 Ridgewood Dr., Suite 5
Chico, California 95973
Project No.: 14-90-103 Date: 5/21/2015

Station #596-A
1900 Webster Street
Oakland, California

Cross Section A-A'

Drawing
6



Legend

- Asphalt/Concrete
- Base Rock/Fill
- Sand
- Clay, Sandy Clay
- Silt/Silty Sand
- First Encountered Groundwater
- SB-8 (5') — Well ID and Approximate Distance from Projection Line

Note: B-1 & B-2 - 2012 AEI Soil Borings

0 20 40 HORIZONTAL SCALE (ft) VERTICAL EXAGGERTATION 2:1	BROADBENT 1370 Ridgewood Dr., Suite 5 Chico, California 95973 Project No.: 14-90-103 Date: 5/21/2015	Station #596-A 1900 Webster Street Oakland, California	Cross Section B-B'	Drawing 7

TABLES

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	According to the United States Geological Survey (USGS) San Francisco Bay Quadrangle Geologic Map, the area surrounding the subject property is underlain by Holocene era alluvium which is commonly characterized by light-grey to grayish-brown or yellowish-brown gravel, sand, silt and clay. Texture varies from cobble gravel to clay, mixed or interbedded laterally and vertically in places (AEI, 2011). Based on a review of the USGS Oakland West, CA Quadrangle Topographic Map, the Site property is situated approximately 27 feet above mean sea level, and the local topography slopes to the north-northeast. (AEI, 2011) According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fan deposits. The alluvial fill thickness ranges from 300 to 700 feet deep and there are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area have historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells. Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of groundwater flow is from east to west or from the Hayward Fault to the San Francisco Bay. Groundwater flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction.	None	NA
	Site	Based on the reports by AEI and SCHUTZE, groundwater was encountered at an approximate depth range of 13.5 bgs in B-1 to 21.36 bgs in SB-3. The groundwater gradient direction associated with the Site has been inferred to flow to the north-northeast due to both the topography of the area and adjacent sites with established groundwater monitoring well networks. Based on review of geologic boring logs by AEI, encountered soil beneath the Site consisted of fine to medium grained poorly graded sand, clayey sands, sandy silt and clay. First-encountered groundwater was in the clayey silt layer located approximately 15 bgs. Broadbent conducted a soil and groundwater investigation from February 2-4, 2015 and the resulting boring logs are consistent with the lithology that AEI, SCHUTZE, and P&D encountered. First-encountered groundwater was between 16 ft bgs to 20 ft bgs, consistent with the previous investigations. Cross Sections of the Site are depicted in Drawings 6 and 7.	None	NA

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Surface Water Bodies		The nearest surface water is Lake Merritt, located approximately 960 feet east of the property. The next nearest surface water is the San Francisco Bay, which is approximately 1 mile to the southwest from the Site.	None	NA
Nearby Wells		A Sensitive Receptor Survey was conducted by Broadbent in February and March of 2016. The closest well to the Site is an irrigation well located approximately 900 to the east-southeast. Two wells are located in a downgradient direction (north-northeast) but are over 1,500 feet from the Site. The remaining wells identified within the 2,000 foot radius are located either upgradient or cross-gradient and at distances near the 2,000 foot radius boundary. Additional sensitive receptor data is provided in Appendix C.	None	NA
Constituents of Concern	Light-Non Aqueous Phase Liquids (LNAPL)	LNAPL has not been observed during the investigations conducted on the Site.	None	NA
	Gasoline Range Organics (GRO)	GRO in soil has been detected in samples collected from five borings (SB-3, B7, B14, SB-6, and SB-7), with B7 yielding the highest concentration of 500 mg/kg. For groundwater, GRO has been detected in samples collected from borings SB-3, B-1, B-2, B-5, SB-6, SB-7, SB-9, and SB-10, with boring SB-3 yielding the highest concentration of 59,000 µg/L. Soil borings SB-9 and SB-10, however, were located offsite and in an upgradient direction in order to assess the potential hydrocarbon plume associated with 1732 Webster Street. It was concluded that the offsite source was unlikely impacting the site based on non-detectable concentrations observed in borings SB-4, SB-5 and SB-8 onsite (downgradient from SB-9 and SB-10). Based on recent and historical data, the GRO plume has been defined to the extent practicable and appears to be restricted mainly to the north-northeast portion of the Site. Although downgradient delineation has not been fully conducted, the presence of multiple commercial buildings in the downgradient direction prohibits further investigations downgradient. In addition, the observed decrease in concentrations between SB-6 and SB-7, the plume does not appear to extend much further offsite than SB-7, as depicted in Drawing 3. When measuring the plume from the presumed source area (vicinity of SB-6) to the inferred boundary, its length is less than 100 feet. A GRO Isoconcentration Contour Map is presented as Drawing 3. Tabulated soil and groundwater analytical results from the recent investigation can be located in Tables 2 and 3, respectively. Historical soil and groundwater results are located in Appendix A.	None	NA

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
	Benzene	Benzene has historically been detected in groundwater in boring SB-3 at a concentration of 89 µg/L. Benzene has also been observed at a depth of 19 feet bgs in soil boring SB-10 at a concentration of 0.0025 mg/kg. However, as previously discussed, impacts observed at this location are suspected to originate from an offsite, upgradient source. Additionally, this sample was likely collected below the groundwater table and was affected by concentrations within the groundwater. Based on current concentrations in both soil and groundwater, Benzene appears to be below laboratory reporting limits onsite. Utilizing historic data, the Benzene plume was isolated within the vicinity of previous boring SB-3 and does not extend offsite as depicted on Drawing 4. The plume is far less than 100 feet in length and restricted completely onsite. A Benzene Isoconcentration Contour Map is presented as Drawing 4. Tabulated soil and groundwater analytical results from the recent investigation can be located in Tables 2 and 3, respectively. Historical soil and groundwater results are located in Appendix A.	None	NA
	MTBE	MTBE has not been detected in the soil and groundwater samples collected during Site investigations.	None	NA
Potential Sources	Offsite	During Broadbent's soil and groundwater investigation, two soil borings (SB-9 and SB-10) were installed across 19th Street to determine if there was potential contamination from the upgradient petroleum hydrocarbon source located at 1732 Webster Street. According to the groundwater analytical data, elevated concentrations of GRO were detected in borings SB-9 and SB-10 and elevated Benzene was also detected in SB-10. However, groundwater samples collected from onsite borings SB-4, SB-5, and SB-8 (downgradient of SB-9 and SB-10) were non-detect for hydrocarbon constituents; therefore suggesting it is unlikely that the upgradient petroleum hydrocarbon source from 1732 Webster Street is impacting the Site.	None	NA
	Onsite	The main source of contamination onsite was presumably from the USTs. According to the report by P&D, the subject property was historically occupied by a gasoline service station from approximately 1940 until 1966 and there were no records on file at the Oakland Building Department, Environmental Health Services Department, or Oakland Fire Department regarding the removal of formerly utilized fuel USTs from the Site. (P&D, 2014). However, without details pertaining to the previous Site layout including the locations of the USTs, product lines, or dispensers, it is difficult to pinpoint the onsite source area. Based on historic and current petroleum concentrations observed in groundwater, it appears that the source area resides within the vicinity of boring SB-3 and SB-6 in the north-northeastern portion of the property.	None	NA

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Migration Pathways	Potential Conduits	A potential transmissive utility conduit study has not been conducted for the Site. However, underground utilities tend to be shallow, above 10 feet bgs. Historical depth-to-groundwater has been observed between approximately 14 and 21 feet bgs, which is well below the anticipated depth of utilities within the area. Therefore, potential migration of contaminants along underground conduits does not pose a concern at the Site.	None	NA
Potential Receptors	Onsite	No onsite water supply wells or surface water exists. The only potential onsite receptor would be onsite workers exposed to gasoline vapors or impacted soil during construction activities. Based on the results of the 2015 investigation conducted by Broadbent, shallow soil concentrations were non-detect for each constituent analyzed and soil vapor concentrations detected in the four vapor probes installed onsite were well below Tier 1 ESLs. This data demonstrates that little to no risk is present for onsite workers potentially exposed to soil vapor or in direct contact with shallow soils onsite. Recent soil and soil vapor data is summarized on Tables 2 and 4.	None	NA
Potential Receptors (Cont.)	Offsite	A Sensitive Receptor Survey was conducted by Broadbent in 2016. The nearest potential surface water body appears to be Lake Merritt, located approximately 960 feet east of the Site. Five wells of unknown use, two irrigation wells, and one domestic well were identified within the 2,000-foot search radius. The nearest well is an irrigation well located approximately 900 feet east-southeast (cross-gradient) of the Site. Two wells, one irrigation and one domestic well, are located in the downgradient direction but at a distance greater than 1,500 feet. The remaining wells identified during the search are located either cross-gradient or upgradient and at distances close to the 2,000-foot boundary. Since the plume appears to be limited in extent and almost isolated onsite, these offsite receptors are not anticipated to be affected. Sensitive receptor data including a map depicting locations is provided in Appendix C.	None	NA

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts	Extent in Soil	Based on the soil analytical results from Broadbent's 2015 investigation and the soil analytical results from previous investigations, soil impacts appear to be absent within shallow soils (0 to 10 feet bgs), which satisfies the LTCP criteria listed in Table 1 of the policy (SWRCB, 2012). Residual impacts have been observed in deeper soil samples collected, with the majority at depths greater than 13 feet bgs. However, these samples were likely near or below the groundwater table and potentially impacted by concentrations present within groundwater. Based on the results from investigations conducted at the Site, the vertical and lateral extent of soil contamination has been defined.	None	NA
	Extent in Groundwater	Based on recent and historical investigations, depth-to-groundwater at the Site has ranged between approximately 14 and 21 feet bgs. According to the recent and historical groundwater analytical results, the highest elevated concentrations of GRO are situated around soil borings B-2, SB-3, and SB-6, with the highest concentration observed in SB-3 at a concentration of 59,000 µg/L. Benzene has been detected in boring SB-3 at 89 µg/L. MTBE has not been detected in samples collected from borings associated with the Site. Isoconcentration Drawings 3 and 4 show the extent of GRO and Benzene, respectively. Based on these drawings, the extent of the residual petroleum compounds is predominantly limited around the north-northeastern area of the Site, presumably the former location of the USTs. The plume does not appear to extend much further downgradient than SB-7 based on the decrease in concentration observed between SB-6 (11,000 µg/L) and SB-7 (3,100 µg/L), over a distance of less than 40 feet. Additionally, further downgradient investigation is not possible due to the presence of multiple commercial buildings. LNAPL has not been observed during the investigations associated with the Site. Due to the limited extent of the groundwater plume and accessibility issues further downgradient, the lateral and vertical extent of groundwater contamination appears to be defined to the extent practicable.	None	NA
	Extent in Soil Vapor	In 2015, Broadbent installed four soil vapor probes at two locations. SG-1A and SG-1B were located along the eastern side of the Site building and SG-2A and SG-2B were located adjacent to the building east of the Site across the parking lot. GRO concentrations in soil vapor ranged between 4,200 µg/m³ in SG-2B and 22,000 µg/m³ in SG-1A. MTBE was only detected in SG-1A at a concentration of 16 µg/m³ and Total Xylenes were detected in each soil vapor probe with SG-1A containing the highest concentration of 200 µg/m³. Toluene was detected above laboratory reporting limits in SG-1A at a concentration of 16 µg/m³ and Ethylbenzene was detected in SG-1A and SG-1B at concentrations of 55 µg/m³ and 22 µg/m³, respectively. Each of the concentrations detected during soil vapor sampling activities were below Tier 1 ESLs. Therefore, little to no risk for soil vapor intrusion appears to be present onsite or at the offsite properties in the downgradient direction.	None	NA

TABLE 1
CONCEPTUAL SITE MODEL
Former ARC Station No. 596-A
1900 Webster Street
Oakland, California

Notes:

bgs = below ground surface
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
MTBE = Methyl tert-butyl Ether
BTEX = benzene, toluene, ethylbenzene, xylenes
µg/L = micrograms per liter
mg/Kg = milligrams per kilogram
ESLs = Tier 1 Environmental Screening Levels
µg/m³ = micrograms per cubic meter
LTCP = Low Threat Closure Policy
SWRCB = State Water Regional Control Board

Table 2
Soil Analytical Results
February 2015
Former ARC Station No. 596-A
1900 Webster Street, Oakland, California

Well Identification	Soil Sample Depth (feet bgs)	Date Collected	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes* (mg/kg)	MTBE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	Naphthalene (mg/kg)
SB-4-3	3	2/2/2015	ND<0.39	ND<4.9	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.098	ND<0.0049	ND<0.0049
SB-4-7	7	2/2/2015	ND<0.39	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.098	ND<0.0049	ND<0.0049
SB-5-3	3	2/3/2015	ND<0.40	ND<4.9	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.099	ND<0.0050	ND<0.0050
SB-5-7	7	2/3/2015	ND<0.39	**5.3**	ND<0.0019	ND<0.0020	ND<0.0019	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.097	ND<0.0049	ND<0.0049
SB-6-3	3	2/3/2015	ND<0.40	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.10	ND<0.0050	ND<0.0050
SB-6-7	7	2/3/2015	ND<0.38	ND<5.0	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0038	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.095	ND<0.0047	ND<0.0047
SB-6-17.5	17.5	2/3/2015	ND<0.38	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.10	ND<0.0050	ND<0.0050
SB-6-21.5	21.5	2/3/2015	**4**	**5.2**	ND<0.0020	ND<0.0020	**0.014**	**0.012**	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.099	ND<0.0050	**0.012**
SB-6-24	24	2/3/2015	**47**	ND<9.9	ND<0.0098	ND<0.0098	ND<0.0098	ND<0.020	ND<0.025	ND<0.025	ND<0.025	ND<0.49	ND<0.025	ND<0.025
SB-7-3	3	2/3/2015	ND<0.38	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.10	ND<0.0050	ND<0.0050
SB-7-7	7	2/3/2015	ND<0.38	ND<5.0	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0038	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.094	ND<0.0047	ND<0.0047
SB-7-25	25	2/3/2015	**6.8**	ND<5.0	ND<0.0097	ND<0.0097	ND<0.0097	ND<0.019	ND<0.024	ND<0.024	ND<0.024	ND<0.49	ND<0.024	ND<0.024
SB-8-3	3	2/3/2015	ND<0.40	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.098	ND<0.0049	ND<0.0049
SB-8-7	7	2/3/2015	ND<0.38	ND<5.0	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.097	ND<0.0049	ND<0.0049
SB-9-3	3	2/2/2015	ND<0.38	ND<5.0	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0037	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.094	ND<0.0047	ND<0.0047
SB-9-7	7	2/2/2015	ND<0.39	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.098	ND<0.0049	ND<0.0049
SB-9-17.5	17.5	2/2/2015	ND<0.38	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.10	ND<0.0050	ND<0.0050
SB-10-3	3	2/2/2015	ND<0.39	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.099	ND<0.0050	ND<0.0050
SB-10-7	7	2/2/2015	ND<0.40	**5**	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.0050
SB-10-19	19	2/2/2015	ND<0.39	ND<5.0	**0.0025**	ND<0.0019	ND<0.0019	ND<0.0038	ND<0.0048	ND<0.0048	ND<0.0048	ND<0.096	ND<0.0048	ND<0.0048
SB-1A-3.5	3.5	2/4/2015	ND<0.38	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0039	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.098	ND<0.0049	ND<0.0049
SB-1B-3	3	2/4/2015	ND<0.39	ND<4.9	ND<0.0019	ND<0.0019	ND<0.0019	ND<0.0038	ND<0.0047	ND<0.0047	ND<0.0047	ND<0.094	ND<0.0047	ND<0.0047
SB-2A-3.5	3.5	2/4/2015	ND<0.40	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.099	ND<0.0050	ND<0.0050
SB-2B-3.5	3.5	2/4/2015	ND<0.39	ND<5.0	ND<0.0020	ND<0.0020	ND<0.0020	ND<0.0040	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.10	ND<0.0050	ND<0.0050
LTCP Criteria - 0 to 5 feet bgs		NA	NA	NA	**8.2**	NA	**89**	NA	NA	NA	NA	NA	NA	**45**
LTCP Criteria - 5 to 10 feet bgs		NA	NA	NA	**12**	NA	**134**	NA	NA	NA	NA	NA	NA	**45**
LTCP Criteria - Utility Worker		NA	NA	NA	**14**	NA	**314**	NA	NA	NA	NA	NA	NA	**219**

feet bgs = feet below ground surface
mg/kg = milligrams per kilogram
GRO = gasoline range organics (C6-C12)
DRO = diesel range organics (C10-C24)
MTBE = methyl tert-butyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
TBA = tert butyl alcohol
DIPE = di isopropyl ether

ND<X.XX = not detected above reporting limit of X.XX
LTCP = Low Threat UST Closure Policy, California Stae Water Resources Control Board (SWRCB), August 17, 2012
LTCP Criteria listed in Table 1, page 8 of the LTCP for a commercial/industrial exposure scenario

Table 3
Groundwater Analytical Results
February 2015
Former ARC Station No. 596-A
1900 Webster Street, Oakland, California

Boring Identification	Date Collected	GRO (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes* (ug/L)	MTBE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	DIPE (ug/L)	Naphthalene (ug/L)
SB-4	2/2/2015	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0
SB-5	2/3/2015	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0
SB-6	2/3/2015	**11,000**	ND<5.0	ND<5.0	**69**	**60**	ND<2.5	ND<13	ND<13	ND<25	ND<13	**27**
SB-7	2/4/2015	**3,100**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0
SB-8	2/3/2015	ND<50	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0
SB-9	2/2/2015	**350**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<5.0	ND<5.0	ND<10	ND<5.0	ND<5.0
SB-10	2/2/2015	**4,500**	**140**	**34**	**32**	**59**	ND<1.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
ESLs		**100**	**1.0**	**40**	**30**	**20**	**5**	--	--	--	--	--

Notes:

µg/Liter = micrograms per liter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
TBA = tert butyl alcohol
DIPE = di isopropyl ether
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromomethane
ND<X.XX = not detected above reporting limit of X.XX µg/L
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,*
California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013.
Commercial/Industrical exposure scenario, assuming groundwater is a potential drinking water resource

Table 4
Soil Vapor Analytical Results
February 2015
Former ARC Station No. 596-A
1900 Webster Street, Oakland, California

Soil Vapor Probe Identification	Probe Sample Depth (feet bgs)	Date Collected	GRO (µg/m^3)	Benzene (µg/m^3)	Toluene (µg/m^3)	Ethylbenzene (µg/m3)	Total Xylenes* (µg/m^3)	MTBE (µg/m^3)	Naphthalene (µg/m^3)	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
SG-1A	3.0-3.50	2/25/2015	**22,000**	ND<13	**16**	**55**	**200**	**16**	ND<21	3.8	0.0017	17.0
SG-1B	5.25-5.75	2/25/2015	**9,500**	ND<13	ND<15	**22**	**83**	ND<14	ND<21	3.9	0.0017	16.0
SG-2A	3.0-3.50	2/25/2015	**6,900**	ND<13	ND<15	ND<17	**56**	ND<14	ND<21	4.7	0.0016	17.0
SG-2B	5.25-5.75	2/25/2015	**4,200**	ND<13	ND<15	ND<17	**41**	ND<14	ND<21	4.5	0.0016	17.0
ESLs			**2,500,000**	**420.0**	**1,300,000**	**4,900**	**440,000**	**47,000**	**360**	--	--	--

Notes:

feet bgs = feet below ground surface
µg/m^3= micrograms per cubic meter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether
ND<X.XX = not detected above reporting limit of X.XX µg/m^3
NA = not analyzed
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013.
Commercial/Industrical exposure scenario; Table E-2

APPENDIX A

Historic Soil and Groundwater Data

Table 1
Summary of Historical Borehole Soil Sample Analytical Results

Sample ID	Sample Date	Sample Depth (feet)	TPH-G	TPH-K	TPH-D	TPH-HO	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-1-16	7/20/2011	16.0	ND<1.0	NA	ND<1.0	NA	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB-2-16	7/20/2011	16.0	ND<1.0	NA	7.7, c,d	NA	25, b,c	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB-2-18	7/20/2011	18.0	ND<1.0	NA	ND<1.0	NA	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
SB-3-16	7/20/2011	16.0	8.3, a,b	NA	6.5, c	NA	ND<5.0	ND<0.05	ND<0.005	0.041	ND<0.005	0.04
SB-3-20	7/20/2011	20.0	42, a,b	NA	8.7, c,e	NA	ND<5.0	ND<0.50	ND<0.050	ND<0.050	0.06	0.12
B1-8'	8/22/2012	8.0	ND<1.0	6.0, c	5.0, c	ND<5.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B2-6'	8/22/2012	6.0	ND<1.0	1.9, c	1.8, c	ND<5.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	0.012
LTCP[1]									0-5' = 1.9 5-10' = 2.8		0-5' = 21 5-10' = 32	
LTCP[2]									0-5' = 8.2 5-10' = 12 0-10' = 14		0-5' = 89 5-10' = 134 0-10' = 314	
ESL [1]			*100*	*100*	*100*	*100*	*100*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*
ESL [2]			*500*	*110*	*110*	*500*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*
ESL [3]			*500*	*110*	*110*	*500*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*
ESL [4]			*770*	*110*	*110*	*1,000*	*1,000*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-K = Total Petroleum Hydrocarbons as Kerosene
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-HO = Total Petroleum Hydrocarbons as Hydraulic Oil
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
MTBE = Methyl tertiary-butyl ether
ND = Not detected.
NA = Not analyzed.
a = Laboratory note: strongly aged gasoline or diesel range compounds are significant in the TPH-G chromatogram.
b = Laboratory note: no recognizable pattern.
c = Laboratory note: diesel range compounds are significant; no recognizable pattern.
d = Laboratory note: oil range compounds are significant.
e = Laboratory note: gasoline range compounds are significant.
LTCP[1] = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Residential Land Use.
LTCP[2] = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Commercial/Industrial Land Use and Utility Worker.
ESL[1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table A-1 – Shallow Soil Screening Levels, Groundwater is a current or potential drinking water source. Residential Land Use.
ESL[2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table A-2 – Shallow Soil Screening Levels, Groundwater is a current or potential drinking water source. Commercial/Industrial Land Use.
ESL[3] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table C-1 – Deep Soil Screening Levels, Groundwater is a current or potential drinking water source. Residential Land Use.
ESL[4] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table C-2 – Deep Soil Screening Levels, Groundwater is a current or potential drinking water source. Commercial/Industrial Land Use.
Results, LTCP criteria, and ESLs in milligrams per kilogram (mg/kg) unless otherwise specified.

Table 2
Summary of Historical Borehole Groundwater Sample Analytical Results

Sample ID	Sample Date	TPH-G	TPH-K	TPH-D	TPH-BO	TPH-HO	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	VOCs by EPA Method 8260 Other Than MTBE and Benzene
B30W	8/28/2008	ND<50	NA	780, c,d	3,700, c,d	NA	2,900, c,d	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
SB-1-W	7/20/2011	ND<50	NA	ND<50	NA	NA	ND<250	ND<5.0	ND<0.5	0.50	ND<0.5	0.97	NA
SB-2-W	7/20/2011	ND<50	NA	ND<50	NA	NA	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	1.0	NA
SB-3-W	7/20/2011	59,000, f	NA	200,000, e,f	NA	NA	ND<10,000	ND<250	*89*	82	*430*	1,600	NA
B1-18-W	8/22/2012	400	1,100, c,e	1,100, c,e	NA	ND<250	ND<250	NA	ND<0.5	ND<0.5	NA	NA	All ND, except Acetone = 21, MEK = 5.9, n-Butyl benzene = 10, 4-Isopropyl toluene = 1.2, 1,2,4-Trimethylbenzene = 9.7
B2-16.5-W	8/22/2012	6,000	4,900, e	3,800, e	NA	ND<250	ND<250	NA	ND<12	ND<12	NA	NA	All ND, except Naphthalene = *290*, n-Butyl benzene = 55, 1,2,4-Trimethylbenzene = 630
LTCP Groundwater-Specific Criteria	Scenario 2	No Value	No Value	No Value	No Value	No Value	No Value	1,000	3,000	No Value	No Value	No Value	No Value
	Scenario 4	No Value	No Value	No Value	No Value	No Value	No Value	1,000	1,000	No Value	No Value	No Value	No Value
ESL[1]		100	100	100	100	100	100	5.0	1.0	40	30	20	Acetone = 1,500, MEK=7,100, Naphthalene = 6.2
ESL[2]		No Value	No Value	No Value	No Value	No Value	No Value	9,900	27	No Value	310	No Value	MEK=23,000,000, Naphthalene = 160
ESL[3]		No Value	No Value	No Value	No Value	No Value	No Value	100,000	270	No Value	3,100	No Value	MEK=200,000,000, Naphthalene = 1,600

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-K = Total Petroleum Hydrocarbons as Kerosene
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil
TPH-HO = Total Petroleum Hydrocarbons as Hydraulic Oil
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
MTBE = Methyl tertiary-butyl ether
VOCs = Volatile Organic Compounds
MEK = Methyl Ethyl Ketone (2-Butanone).
ND = Not detected.
NA = Not analyzed.
a = Laboratory note: strongly aged gasoline or diesel range compounds are significant in the TPH-G chromatogram.
b = Laboratory note: no recognizable pattern.
c = Laboratory note: diesel range compounds are significant; no recognizable pattern.
d = Laboratory note: oil range compounds are significant.
e = Laboratory note: gasoline range compounds are significant.
f = Laboratory note: lighter than water immiscible sheen/product present.
LTCP = Low Threat Closure Policy, developed by State Water Resources Control Board , effective August 17, 2012, from Groundwater Specific Criteria Scenarios 2 and 4.
ESL[1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table F-1a – Groundwater Screening Levels, groundwater is a current or potential drinking water resource.
ESL[2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Fine-Coarse Mix. Residential Land Use.
ESL[3] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Fine-Coarse Mix. Commercial/Industrial Land Use.
No ESL1 values for n-butlybenzene, 4-isopropyl toluene, and 1,2,4-Trimethylbenzene.
No ESL2 values for n-butlybenzene, 4-isopropyl toluene, 1,2,4-Trimethylbenzene, and Acetone.
No ESL3 values for n-butlybenzene, 4-isopropyl toluene, 1,2,4-Trimethylbenzene, and Acetone.
Values with underline exceed their respective ESL1 values.
Italicized values exceed their respective ESL2 values.
Results, LTCP criteria, and ESLs in micrograms per Liter (ug/L) unless otherwise specified.

Table 3
Summary of Current Investigation Borehole Soil Sample Analytical Results

Sample ID	Sample Date	Sample Depth (feet)	TPH-G	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Other VOCs by EPA Method 8260B	SVOCs by EPA Method 8270C	Total Lead
B4-4.5	8/28/2013	4.5	ND<1.0	1.9, c	5.7, c	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B4-9.5	8/28/2013	9.5	ND<1.0	1.6, c,h	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B4-14.5	8/28/2013	14.5	ND<1.0	1.2, c,d	6.1, c,d	5.7, c,d	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	NA	ND<5.0
B5-5.0	10/2/2013	5.0	ND<1.0	1.5, c,d	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B5-9.5	10/2/2013	9.5	ND<1.0	ND<4.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B5-14.5	10/2/2013	14.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Naphthalene = 0.015, n-Butyl benzene = 0.0066, 1,2,4-Trimethylbenzene = 0.0068	NA	ND<5.0
B6-5.0	10/2/2013	5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B6-9.5	10/2/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B6-14.5	10/2/2013	14.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	NA	5.1
B7-5.0	10/9/2013	5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B7-9.5	10/9/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B7-13.0	10/9/2013	13.0	500, g	*1,200, e*	1,200, e	ND<10	ND<2.0	ND<2.0	ND<2.0	*5.7*	*43*	All ND, except Naphthalene = *18*, n-Butyl benzene = 18, 1,2,4-Trimethylbenzene = 59, 1,3,5-Trimethylbenzene = 22, Isopropylbenzene = 2.2, 4-Isopropyl toluene = 3.8, n-Propyl benzene = 9.9	All ND, except Naphthalene = *21*, 2-Methylnaphthalene = *8.9*	11
B8-5.0	10/2/2013	5.0	ND<1.0	1.5, c,d	7.3, c,d	8.6, c,d	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B8-9.5	10/2/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B8-14.5	10/2/2013	14.5	ND<1.0	2.2, f	7.1, f	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	NA	ND<5.0
B11-5.0	10/9/2013	5.0	ND<1.0	3.3, c,d	42, c,d	44, c,d	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND, except Butylbenzyl Phthalate = 10	ND<5.0
B11-9.5	10/9/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B11-14.5	10/9/2013	14.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B13-5.0	10/2/2013	5.0	ND<1.0	1.6, f	24, f	30, f	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND, except Butylbenzyl Phthalate = 9.3	**180**
B13-9.5	10/2/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B14-5.0	10/9/2013	5.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B14-9.5	10/9/2013	9.5	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND	All ND	ND<5.0
B14-14.5	10/9/2013	14.5	4.1, g	4.3, e	6.1, e	ND<5.0	ND<0.0050	ND<0.0050	ND<0.0050	0.024	0.14	All ND, except Naphthalene = 0.11, n-Butyl benzene = 0.023, 1,2,4-Trimethylbenzene = 0.21, 1,3,5-Trimethylbenzene = 0.064, 4-Isopropyl toluene = 0.0057, n-Propyl benzene = 0.024	All ND, except Naphthalene = 0.46, Butylbenzyl Phthalate = 0.32	6.2

Table 3
Summary of Current Investigation Borehole Soil Sample Analytical Results

Sample ID	Sample Date	Sample Depth (feet)	TPH-G	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Other VOCs by EPA Method 8260B	SVOCs by EPA Method 8270C	Total Lead
LTCP[1]								0-5' = 1.9 5-10' = 2.8		0-5' = 21 5-10' = 32		0-5' Naphthalene = 9.7 5-10' Naphthalene = 9.7	0-5' PAH = 0.063 based on BaP toxicity	
LTCP[2]								0-5' = 8.2 5-10' = 12 0-10' = 14		0-5' = 89 5-10' = 134 0-10' = 314		0-5' Naphthalene = 45 5-10' Naphthalene = 45 0-10' Naphthalene = 219	0-5' PAH = 0.68 0-10' PAH = 219	
ESL [1]			*100*	*100*	*100*	*100*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*Naphthalene = 1.2,*	*Naphthalene = 1.2, 2-Methylnaphthalene = 0.25,*	*80*
ESL [2]			*500*	*110*	*500*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*Naphthalene = 1.2,*	*Naphthalene = 1.2, 2-Methylnaphthalene = 0.25,*	*320*
ESL [3]			*500*	*110*	*500*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*Naphthalene = 1.2,*	*Naphthalene = 1.2, 2-Methylnaphthalene = 0.25,*	*80*
ESL [4]			*770*	*110*	*1,000*	*1,000*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*Naphthalene = 1.2,*	*Naphthalene = 1.2, 2-Methylnaphthalene = 0.25,*	*320*

NOTES
TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-D = Total Petroleum Hydrocarbons as Diesel.
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil.
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil.
MTBE = Methyl-tert-Butyl Ether
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
ND = Not Detected.
NA = Not Analyzed.
a = Laboratory note: strongly aged gasoline or diesel range compounds are significant in the TPH-G chromatogram.
b = Laboratory note: no recognizable pattern.
c = Laboratory note: diesel range compounds are significant; no recognizable pattern.
d = Laboratory note: oil range compounds are significant.
e = Laboratory note: gasoline range compounds are significant.
f = Laboratory note: Stoddard solvent/mineral spirit (?).
g = Laboratory note: heavier gasoline range compounds are significant (aged gasoline?).
h = Laboratory note: one to a few isolated peaks present in the TPH-D/TPH-MO chromatogram..
LTCP[1] = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Residential Land Use.
LTCP[2] = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Commercial/Industrial Land Use and Utility Worker.
ESL [1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table A-1 – Shallow Soil Screening Levels, Groundwater is a current or potential drinking water resource. Residential Land Use.
ESL [2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table A-2 – Shallow Soil Screening Levels, Groundwater is a current or potential drinking water resource. Commercial/Industrial Land Use.
ESL [3] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table C-1 – Deep Soil Screening Levels, Groundwater is a current or potential drinking water resource. Residential Land Use.
ESL [4] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table C-2 – Deep Soil Screening Levels, Groundwater is a current or potential drinking water resource. Commercial/Industrial Land Use.
No ESL[1] values for n-butlybenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene, 4-isopropyl toluene, and n-Propyl benzene, or Butylbenzyl Phthalate.
No ESL[2] values for n-butlybenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene, 4-isopropyl toluene, and n-Propyl benzene, or Butylbenzyl Phthalate.
No ESL[3] values for n-butlybenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene, 4-isopropyl toluene, and n-Propyl benzene, or Butylbenzyl Phthalate.
Hi-lighted depths are less than 5.0 feet.
Results in bold indicate a concentration equal or exceeding the respective ESL[1] value.
Underlined results indicate a concentration equal or exceeding the respective ESL value.
Italicized results indicate a concentration equal or exceeding the respective ESL[4] value.
Results and ESLs reported in milligrams per kilogram (mg/kg) unless otherwise indicated.

Table 4
Summary of Current Investigation Borehole Groundwater Sample Analytical Results

Sample ID	Sample Date	TPH-G	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Other VOCs by EPA 8260	Total Lead
B5-W	10/2/2013	650	550, f	620, f	ND<250	ND<0.50	ND<0.50	ND<0.50	14	19	ND, except Naphthalene = 11, Bromodichloromethane = 0.77, Chloroform = 23, n-Butyl benzene = 9.8 sec-Butyl benzene = 1.7, Isopropylbenzene = 1.7, n-Propyl benzene = 7.3, 1,2,4-Trimethylbenzene = 32, 1,3,5-Trimethylbenzene = 8.8	NR
B6-W	10/2/2013	ND<50	ND<50	ND<100	ND<250	ND<0.50	ND<0.50	0.56	ND<0.50	ND<0.50	ND, except PCE = 1.6	NR
B8-W	10/2/2013	ND<50	ND<50	ND<100	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	All ND	NR
LTCP Groundwater-Specific Criteria	Scenario 2	No Value	No Value	No Value	No Value	1,000	3,000	No Value	No Value	No Value	No Value	No Value
	Scenario 4	No Value	No Value	No Value	No Value	1,000	1,000	No Value	No Value	No Value	No Value	No Value
ESL[1]		100	100	100	100	5.0	1.0	40	30	20	Naphthalene = 6.2, Bromodichloromethane = 100, Chloroform = 70, PCE = 5.0,	2.5
ESL[2]		No Value	No Value	No Value	No Value	9,900	27	95,000	310	37,000	Naphthalene = 160, Chloroform = 170, PCE = 63,	No Value
ESL[3]		No Value	No Value	No Value	No Value	100,000	270	No Value	3,100	No Value	Naphthalene = 1,600, Chloroform = 1,700, PCE = 640,	No Value

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-D = Total Petroleum Hydrocarbons as Diesel.
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil.
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil.
MTBE = Methyl-tert-Butyl Ether.
VOCs = Volatile Organic Compounds.
PCE = Tetrachloroethene.
ND = Not Detected.
NR = Not Representative. The samples were preserved at the laboratory prior to filtration, resulting in non-representative results that included metals solubilized from sediments in the samples.
f = Laboratory note: gasoline range compounds are significant.
LTCP = Low Threat Closure Policy, developed by State Water Resources Control Board , effective August 17, 2012, from Groundwater Specific Criteria Scenarios 2 and 4.
ESL [1] =Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table F-1a – Groundwater Screening Levels, groundwater is a current or potential drinking water resource.
ESL [2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion (Fine-Coarse Mix). Residential Land Use.
ESL [3] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion (Fine-Coarse Mix). Commercial/Industrial Land Use.
No ESL1 values for n-butlybenzene, sec-Butyl benzene, Isopropylbenzene, n-Propyl benzene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene.
No ESL2 values for Bromodichloromethane, Lead, n-butlybenzene, sec-Butyl benzene, Isopropylbenzene, n-Propyl benzene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene.
No ESL3 values for Bromodichloromethane, Lead, n-butlybenzene, sec-Butyl benzene, Isopropylbenzene, n-Propyl benzene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene.
Values with underline exceed their respective ESL1 values.
Results and ESLs reported in micrograms per liter (µg/L) unless otherwise indicated.

APPENDIX B

Boring and Well Logs

Project: Pacific Health Clinic
Project Location: 1900 Webster Street, Oakland, CA 94612
Project Number: 297305

Key to Log of Boring

Sheet 1 of 1

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10

COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
6. USCS Symbol: USCS symbol of the subsurface material.
7. Graphic Log: Graphic depiction of the subsurface material encountered.
8. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
9. Well Log: Graphical representation of well installed upon completion of drilling and sampling.
10. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

TYPICAL MATERIAL GRAPHIC SYMBOLS

- Bentonite
- Bentonite chips
- Bentonite powder
- Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)
- Fat CLAY/SILT (CH-MH)
- Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
- Claystone
- Lean-Fat CLAY, CLAY w/SAND, SANDY CLAY
- Cuttings
- Lean CLAY/PEAT (CL-OL)
- AF
- Clayey GRAVEL (GC)
- SILTY CLAY (CL-ML)
- Boulders
- Clayey GRAVEL to Gravelly CLAY (GC-CH)
- Clayey GRAVEL to Gravelly CLAY (GC-CL)
- Silty GRAVEL (GM)
- Silty GRAVEL to Clayey GRAVEL (GM-GC)
- Silty GRAVEL to Gravelly SILT (GM-MH)
- Silty GRAVEL to Gravelly SILT (GM-ML)
- Poorly graded GRAVEL with Silt (GP-GM)
- Granite
- Gravel
- Grout
- Well graded GRAVEL (GW)
- Well graded GRAVEL with Silt (GW-GM)
- Poorly to Well graded GRAVEL (GW-GP)
- Poorly graded GRAVEL (GP)
- Artificial Fill
- SILT, SILT w/SAND, SANDY SILT (MH)
- SILT, SILT with SAND, SANDY SILT (ML-MH)
- High plasticity PEAT (OH)
- Low plasticity PEAT (OL)
- Low to High plasticity PEAT (OL-OH)
- Sandstone
- Clayey SAND (SC)
- Clayey SAND to Sandy CLAY (SC-CH)
- Clayey SAND to Sandy CLAY (SC-CL)
- Shale
- Silt
- Siltstone
- Silty SAND (SM)
- Silty SAND to Sandy SILT (SM-MH)
- Silty SAND to Sandy SILT (SM-ML)
- Silty to Clayey SAND (SM-SC)
- Poorly graded SAND (SP)
- Poorly graded SAND with Clay (SP-SC)
- Well graded SAND (SW)
- Well graded SAND with Clay (SW-SC)
- Well graded SAND with Silt (SW-SM)
- SILT, SILT w/SAND, SANDY SILT (ML)
- Bentonite plug
- Asphaltic Concrete (AC)
- Poorly graded SAND with Silt (SP-SM)
- Black Rock - fine grained, exhibiting a bedding
- Gray rock, large grain size

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Shelby Tube (Thin-walled, fixed head)
- Shelby Tube (Thin-walled, fixed head)
- Bulk Sample
- 3-inch-OD California w/ brass rings
- Other sampler now modified
- Auger sampler
- CME Sampler
- 2-inch-OD unlined split spoon (SPT)
- 2.5-inch-OD Modified California w/ brass liners
- Grab Sample
- Pitcher Sample

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting a given time)
- Minor change in material properties within a stratum
- Inferred or gradational contact between strata
- ?—? Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.

2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Project: Pacific Health Clinic
Project Location: 1900 Webster Street, Oakland, CA 94612
Project Number: 297305

Log of Boring SB-1

Sheet 1 of 1

Date(s) Drilled July 20, 2011	**Logged By** Harmony TomSun	**Checked By** Peter McIntyre
Drilling Method Direct Push	**Drill Bit Size/Type**	**Total Depth of Borehole** 20 feet bgs
Drill Rig Type GeoProbe	**Drilling Contractor** RSI Drilling	**Approximate Surface Elevation**
Groundwater Level and Date Measured 15.93 feet ATD	**Sampling Method(s)** Tube	**Hammer Data**
Borehole Backfill Neat Cement	**Location**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0				SM		Silty sand, dark brown 3/3 7.5YR, fine to medium grained sand, moderately loose, <10% fine grained gravel		
	5				SM		Sand, light yellowish brown 6/4 10YR, fine grained sand, <10% very fine grained gravel, moderately loose		
		☒	SB-1-7	2.7	SM		fine to medium grained sand		
	10				SC		Clayey sand, light brownish gray 6/2 10YR, fine grained sand, cohesive, moist		
		☒	SB-1-12	5.3			poorly graded medium grained sand		
	15				ML		Clayey silt, dark greenish gray 4/1 5G, cohesive, slight plasticity, moist to wet		
		☒	SB-1-16	122.1			▽		
	20	☒	SB-1-20	36.3			Bottom of Boring at 20 feet bgs		
	25								
	30								

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Project: Pacific Health Clinic
Project Location: 1900 Webster Street, Oakland, CA 94612
Project Number: 297305

Log of Boring SB-2

Sheet 1 of 1

Date(s) Drilled July 20, 2011	**Logged By** Harmony TomSun	**Checked By** Peter McIntyre
Drilling Method Direct Push	**Drill Bit Size/Type**	**Total Depth of Borehole** 20 feet bgs
Drill Rig Type GeoProbe	**Drilling Contractor** RSI Drilling	**Approximate Surface Elevation**
Groundwater Level and Date Measured 17.14 feet ATD	**Sampling Method(s)** Tube	**Hammer Data**
Borehole Backfill Neat Cement	**Location**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0				SM		Silty sand, dark reddish brown 3/3 5YR, fine to medium grained sand, moderately loose, <10% fine grained gravel		
	5				SM		Sand, yellowish brown 5/8 10YR, fine grained sand, <10% very fine grained gravel, poorly graded sand and gravel, moderately loose		
			SB-2-8	<1	SM		Sand, yellowish brown 5/4 10YR, medium grained, <20% clay, friable		
	10		SB-2-11	<1	SM		Sand, reddish yellow 7/8 5YR, very fine to fine grained sand, <20% silt, poorly graded, hard, friable		
					SM		poorly graded medium grained sand		
	15		SB-2-16	83.4	ML		Clayey silt, light yellowish brown 6/4 10YR mottled dark greenish gray 4/1 5G, cohesive, slight plasticity, moist to wet		
			SB-2-18	245.3					
	20		SB-2-20	7.2			Bottom of Boring at 20 feet bgs		
	25								
	30								

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Project: Pacific Health Clinic
Project Location: 1900 Webster Street, Oakland, CA 94612
Project Number: 297305

Log of Boring SB-3

Sheet 1 of 1

Date(s) Drilled July 20, 2011	**Logged By** Harmony TomSun	**Checked By** Peter McIntyre
Drilling Method Direct Push	**Drill Bit Size/Type**	**Total Depth of Borehole** 24 feet bgs
Drill Rig Type GeoProbe	**Drilling Contractor** RSI Drilling	**Approximate Surface Elevation**
Groundwater Level and Date Measured 21.36 feet ATD	**Sampling Method(s)** Tube	**Hammer Data**
Borehole Backfill Neat Cement	**Location**	

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0				SM		Silty sand, dark brown 3/3 7.5YR mottled yellowish red 5/8 5YR, fine to medium grained sand, <10% fine grained gravel, tight, no plasticity		
			SB-3-4	<1					
	5				SM		Sand, yellowish red 4/6 5YR, fine to medium grained sand, <10% very fine grained gravel, poorly graded sand and gravel, friable		
			SB-3-8	<1	SM		Silty sand, light brown 6/3 7.5YR, medium grained, friable		
	10								
			SB-3-12	9.4	SC		Clayey sand, light yellowish brown 6/4 10YR, very fine to fine grained sand, <10% silt, moderate plasticity		
	15				ML		Clayey silt, grayish green 5/2 5G, <10% fine grained sand, tight, slight platsicity, moist		
			SB-3-16	57.8					
					ML		Clayey silt, light yellowish brown 6/4 10YR mottled dark greenish gray 4/1 5G, cohesive, slight plasticity, moist to wet		
	20		SB-3-20	63.1					
			SB-3-24	3.2					
	25						Bottom of Boring at 24 feet bgs		
	30								

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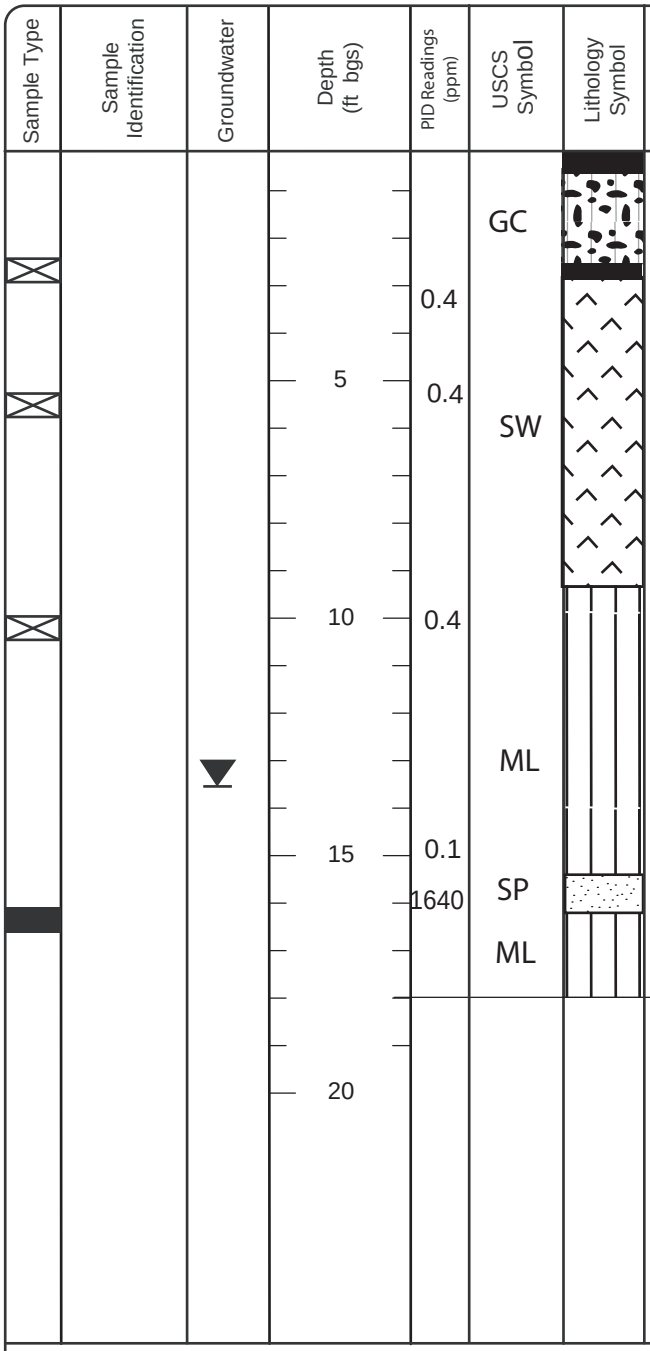
SCHUTZE & Associates

SOIL BORING LOG

Driller/Rig: ECA/Direct Push	Date Drilled: 8/22/2012	Logged by: JS
Diameter: 2" Boring	Boring Number: B1	



Boring Log
1900 Webster Street
Oakland, California

Notes: Groundwater confined depth to groundwater ~13.5 ft bgs subsequent to sampling;
Backfilled with portland neat cement using a tremie pipe, capped surface with quick-drying cement;
Highest PID reading: 1640 ppm;
No visual contamination, strong gasoline smell.

groundwater sample ▼ first encountered water (ft bgs)

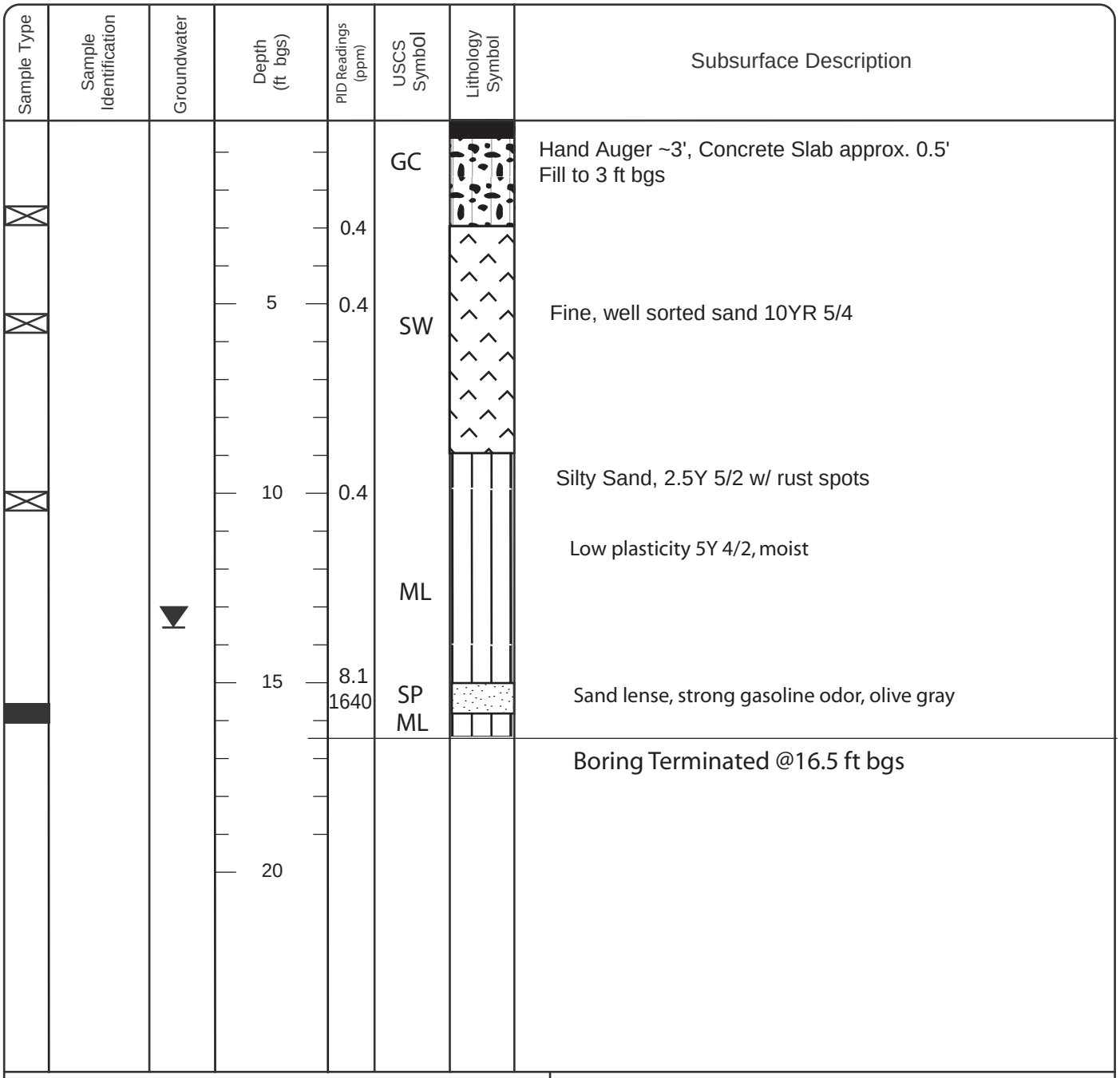
soil sample ft bgs = feet below ground surface

SCHUTZE & Associates, Inc. Project No. SCS448

SCHUTZE & Associates

SOIL BORING LOG

Driller/Rig: ECA/Direct Push	Date Drilled: 8/22/2012	Logged by: JS
Diameter: 2" Boring	Boring Number: B2	



Boring Log
1900 Webster Street
Oakland, California

Notes: Groundwater confined, depth to groundwater ~13.5 ft bgs subsequent to sampling;
Backfilled with portland neat cement using a tremie pipe, capped surface with quick-drying cement;
Highest PID reading: 1640 ppm;
No visual contamination, strong gasoline smell.

groundwater sample | first encountered water (ft bgs)
soil sample | ft bgs = feet below ground surface

SCHUTZE & Associates, Inc. Project No. SCS448

P&D ENVIRONMENTAL, INC.

BORING NO.: B4	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 7 ft. west of east wall and 11 ft. south of north wall of dental office		ELEVATION AND DATUM: None	
DRILLING AGENCY: Vironex, Inc.	DRILLER: Scott	DATE & TIME STARTED: 8/28/13 0830	DATE & TIME FINISHED: 8/28/13 1530
DRILLING EQUIPMENT: Badger			
COMPLETION DEPTH: 20.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY:
FIRST WATER DEPTH: 18.0 Feet	NO. OF SAMPLES: 4 Soil		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete and base rock.			No Well Constructed		Borehole hand augered from 0.0 to 4.0 ft. using a 3.5-inch O.D. hand auger. Borehole continuously cored from 4.0 to 20.0 ft. using a 3.0-foot long 2.0-inch O.D. Geoprobe Macrocore barrel sampler containing a 1.5-inch O.D. transparent PVC tube.
	0.5 to 2.5 ft. Dark brown silty sand (SM); medium dense, moist, with few coarse angular gravel to 0.25-inch diameter. No Petroleum Hydrocarbon (PHC) odor. (10,70,20)				0	
5	2.5 to 10.0 ft. Light brown silty sand (SM); medium dense, moist, with fine to medium sand, and orange mottling. No PHC odor. (0,80,20)	SM		B4-4.5	9.2	4.0 to 7.0 ft. 2.8 ft. recovery 7.0 to 10.0 ft. 2.8 ft. recovery 10.0 to 13.0 ft. 2.8 ft. recovery 13.0 to 14.5 ft. 1.3 ft. recovery 14.5 to 15.0 ft. 0.5 ft. recovery 15.0 to 18.0 ft. 2.8 ft. recovery 18.0 to 20.0 ft. 1.8 ft. recovery
					0	
					0	Expansive clays.
10				B4-9.5	0	Water encountered during drilling at 18.0 ft. at 1025 on 8/28/13. Temporary 1.0-inch diameter slotted PVC casing placed in borehole. Borehole was dry at 1105 and at 1630.
	10.0 to 14.5 ft. Light grayish-brown clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,75,25)	SC			0	Borehole terminated at 20.0 ft. on 8/28/13. Borehole grouted on 8/28/13 using neat cement and a tremie pipe.
15	14.5 to 15.0 ft. Olive-gray clayey silt (ML); stiff, moist,with orange mottling. No PHC odor. (0,0,10)	ML		B4-14.5		Mr. Steve Miller with Alameda County Public Works Agency on site to observe and document grouting of the borehole.
	15.0 to 18.5 ft. Brown clayey fine sand (SC); dense, moist to wet, with orange mottling. Slight PHC odor. (0,80,20) Bluish-gray staining from 17.5 ft. to 18.5 ft. Wet at 17.5 ft. Saturated at 18.0 ft.	SC		▽	4.2	
	18.5 to 20.0 ft. Olive-gray clayey silt (ML); medium stiff, wet, with bluish-gray mottling. No PHC odor. (0,0,100)	ML				
20				B4-19.5	0	
25						Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
30						

P&D ENVIRONMENTAL, INC.

BORING NO.: B5	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 11 ft. north and 9 ft. east of southwest corner of kitchen		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc. and Vironex, Inc.	DRILLER: Omar, Joel	DATE & TIME STARTED: 9/25/13 1045	DATE & TIME FINISHED: 10/02/13 1400
DRILLING EQUIPMENT: 3.5-inch O.D. hand auger and Badger			
COMPLETION DEPTH: 19.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY: PMK
FIRST WATER DEPTH: 18.0 Feet	NO. OF SAMPLES: 4 Soil, 1 Water		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete and base rock.			No Well Constructed		On 9/25/13 borehole hand augered from 0.0 to 5.0 ft. using a 3.5-inch O.D. hand auger. On 10/2/13 borehole continuously cored from 5.0 to 19.0 ft. using a 3.0-foot long 2.0-inch O.D. Geoprobe Macrocore barrel sampler containing a 1.5-inch O.D. transparent PVC tube.
	0.5 to 9.0 ft. Dark brown silty sand (SM); medium dense, moist, with few coarse angular gravel to 0.25-inch diameter. No Petroleum Hydrocarbon (PHC) odor. (10,70,20)	SM			0	
5		X		B5-5.0	0	5.0 to 8.0 ft. 2.8 ft. recovery 8.0 to 11.0 ft. 2.8 ft. recovery 11.0 to 14.0 ft. 2.8 ft. recovery 14.0 to 17.0 ft. 2.8 ft. recovery 17.0 to 19.0 ft. 1.0 ft. recovery
					0	Expansive clays. Drilling refusal at 19.0 ft. depth.
	9.0 to 10.5 ft. Grayish-brown sandy clay (CL); medium stiff, moist, with fine sand, and orange mottling. No PHC odor. (0,20,80)	X CL		B5-9.5		Water encountered during drilling at 18.0 ft. at 1125 on 10/2/13. Temporary 1.0-inch diameter slotted PVC casing placed in borehole. Water level measured at 16.7 ft. at 1135, and at 16.7 ft. at 1145.
10	10.5 to 12.0 ft. Light grayish-brown clayey sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,75,25)	SC			0	
	12.0 to 13.0 ft. Olive-brown silty sand (SM); medium dense, moist, with fine sand and orange mottling. No PHC odor. (0,80,20)	SM				
	13.0 to 15.0 ft. Olive-gray clayey sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SC			0	Approximately 0.2-gallon purged from borehole prior to groundwater sample collection using new unused disposable polyethylene tubing attached to a peristaltic pump.
15		X		B5-14.5		
	15.0 to 15.5 ft. Grayish-brown fine sand (SP); medium dense, moist. No PHC odor. (0,95,5)	SP				
	15.5 to 18.0 ft. Grayish-brown clayey fine sand (SC); medium dense, moist to wet, with orange mottling. No PHC odor. (0,80,20) Wet at 17.5 ft. Saturated at 18.0 ft.	SC		▼	0.4	Water sample B5-W collected at 1200; moderate PHC odor and no sheen on sample.
	18.0 to 19.0 ft. Bluish-gray silty fine sand (SM); medium dense, saturated. Strong PHC odor. (0,85,15)	X SM		▽ B5-18.5	93	Water level subsequently measured at 17.9 ft.
20						Borehole terminated at 19.0 ft. on 10/2/13. Borehole grouted on 10/2/13 using neat cement and a tremie pipe. Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence.
25						Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
30						

P&D ENVIRONMENTAL, INC.

BORING NO.: B6	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 5 ft. south and 3 ft. west of northeast corner of office		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc. and Vironex, Inc.	DRILLER: Omar, Joel	DATE & TIME STARTED: 9/25/13 1200	DATE & TIME FINISHED: 10/02/13 1400
DRILLING EQUIPMENT: 3.5-inch O.D. hand auger and Badger			
COMPLETION DEPTH: 20.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY: TMK
FIRST WATER DEPTH: 17.5 Feet	NO. OF SAMPLES: 4 Soil, 1 Water		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete and base rock.			No Well Constructed		On 9/25/13 borehole hand augered from 0.0 to 5.0 ft. using a 3.5-inch O.D. hand auger. On 10/2/13 borehole continuously cored from 5.0 to 19.0 ft. using a 3.0-foot long 2.0-inch O.D. Geoprobe Macrocore barrel sampler containing a 1.5-inch O.D. transparent PVC tube.
	0.5 to 2.5 ft. Dark brown silty sand (SM); medium dense, dry, with few coarse angular gravel to 0.25-inch diameter. No Petroleum Hydrocarbon (PHC) odor. (10,70,20)				0	
5	2.5 to 9.5 ft. Light brown silty sand (SM); medium dense, moist, with fine to medium sand, and orange mottling. No PHC odor. (0,80,20) 7.0 to 9.5 ft. color change to light grayish brown.	X	SM	B6-5.0	0	5.0 to 8.0 ft. 2.8 ft. recovery 8.0 to 11.0 ft. 2.8 ft. recovery 11.0 to 14.0 ft. 2.8 ft. recovery 14.0 to 17.0 ft. 2.8 ft. recovery 17.0 to 20.0 ft. 2.8 ft. recovery
					0	Expansive clays.
10	9.5 to 13.5 ft. Light grayish-brown clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,75,25)	X	SC	B6-9.5	0	Water encountered during drilling at 17.5 ft. at 0915 on 10/2/13. Temporary 1.0-inch diameter slotted PVC casing placed in borehole. Water level measured at 16.6 ft. at 0920, and at 16.6 ft. at 0930.
					0	Approximately 0.1-gallon purged from borehole prior to groundwater sample collection using new unused disposable polyethylene tubing attached to a peristaltic pump.
15	13.5 to 17.0 ft. Olive-gray silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	X	SM	B6-14.5		Water sample B6-W collected at 1020; no odor or sheen on sample.
	17.0 to 19.5 ft. Grayish-brown fine sand (SP); medium dense, wet to saturated. No PHC odor. (0,95,5) Wet at 17.0 ft. Saturated at 17.5 ft.		SP	▼ ▽	0	Water level subsequently measured at 17.3 ft. at 1039.
20	19.5 to 20.0 ft. Olive-gray clayey silt (ML); medium stiff, moist. No PHC odor. (0,0,100)	X	ML	B6-19.5	0	
						Borehole terminated at 20.0 ft. on 10/2/13. Borehole grouted on 10/2/13 using neat cement and a tremie pipe.
25						Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence.
						Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses.
30						2) Density determinations are qualitative and are not based on quantitative evaluation.

P&D ENVIRONMENTAL, INC.

BORING NO.: B7	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 8 ft. south and 5 ft. east of northwest corner of reception desk		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc.	DRILLER: Omar	DATE & TIME STARTED: 10/09/13 1020	DATE & TIME FINISHED: 10/09/13 1630
DRILLING EQUIPMENT: 2.0-inch O.D.hand auger			
COMPLETION DEPTH: 13.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY: PMK
FIRST WATER DEPTH: Not Encountered	NO. OF SAMPLES: 3 Soil		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete (5-inch) and base rock.			No Well Constructed		Borehole hand augered from 0.5 to 13.0 ft. using a 2.0-inch O.D. hand auger.
	0.5 to 1.0 ft. Dark brown silty sand (FILL); medium dense, moist, with concrete fragments.	FILL				
	1.0 to 4.0 ft. Brown clayey fine sand (SC); medium dense, moist, with orange mottling. No Petroleum Hydrocarbon (PHC) odor. (0,80,20)	SC			0	No water encountered during augering.
5	4.0 to 6.0 ft. Brown silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,85,15) X 5.5 to 6.0 ft. Color change to reddish-brown.	SM		B7-5.0	0	Borehole terminated at 13.0 ft. on 10/09/13. Borehole grouted on 10/09/13 using neat cement grout.
	6.0 to 7.0 ft. Grayish-brown clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SC				Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence.
	7.0 to 9.0 ft. Grayish-brown silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SM			0	
	9.0 to 9.5 ft. Gray sandy clay (CL); medium stiff, moist, with fine sand. No PHC odor. (0,20,80) X	CL		B7-9.5	0	
10	9.5 to 12.5 ft. Gray clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SC				
	12.5 to 13.0 ft. Brown silty fine sand (SM); medium dense, moist, with orange and gray mottling. Strong PHC odor. (0,85,15)	SM			123 1,022	
	X			B7-13.0		Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
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P&D ENVIRONMENTAL, INC.

BORING NO.: B8	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 7 ft. east of entrance door			ELEVATION AND DATUM: None
DRILLING AGENCY: IMX, Inc. and Vironex, Inc.		DRILLER: Omar, Joel	DATE & TIME STARTED: 9/25/13 1530 / DATE & TIME FINISHED: 10/02/13 1700
DRILLING EQUIPMENT: 3.5-inch O.D. hand auger and Badger			
COMPLETION DEPTH: 18.0 Feet	BEDROCK DEPTH: Not Encountered		LOGGED BY: MLBD / CHECKED BY: PMK
FIRST WATER DEPTH: 17.0 Feet	NO. OF SAMPLES: 4 Soil, 1 Water		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete and base rock.			No Well Constructed		On 9/25/13 borehole hand augered from 0.0 to 5.0 ft. using a 3.5-inch O.D. hand auger. On 10/2/13 borehole continuously cored from 5.0 to 18.0 ft. using a 3.0-foot long 2.0-inch O.D. Geoprobe Macrocore barrel sampler containing a 1.5-inch O.D. transparent PVC tube.
	0.5 to 9.0 ft. Brown silty fine sand (SM); medium dense, moist, with fine to medium sand, and orange and brown mottling. No Petroleum Hydrocarbon (PHC) odor. (0,80,20)	X SM		B8-5.0	0	5.0 to 8.0 ft. 2.8 ft. recovery 8.0 to 11.0 ft. 2.8 ft. recovery 11.0 to 14.0 ft. 2.8 ft. recovery 14.0 to 17.0 ft. 2.8 ft. recovery 17.0 to 18.0 ft. 1.0 ft. recovery
5					0	
					0.4	Expansive clays. Drilling refusal at 18.0 ft. depth.
	9.0 to 10.5 ft. Light grayish-brown clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	X SC		B8-9.5		Water encountered during drilling at 17.0 ft. at 1422 on 10/2/13. Temporary 1.0-inch diameter slotted PVC casing placed in borehole. Water level measured at 15.9 ft. at 1428, and at 15.6 ft. at 1438.
10	10.5 to 13.0 ft. Grayish-brown silty fine sand (SM); medium dense, moist, with orange mottling. Slight PHC odor. (0,80,20)	SM			23	
	13.0 to 13.5 ft. Grayish-brown sandy clay (CL); medium stiff, moist, with fine sand. No PHC odor. (0,20,80)	CL				Approximately 0.1-gallon purged from borehole prior to groundwater sample collection using new unused disposable polyethylene tubing attached to a peristaltic pump.
	13.5 to 18.0 ft. Grayish-brown silty fine sand (SM); medium dense to soft, wet to saturated, with orange mottling. No PHC odor. (0,80,20) Wet at 16.5 ft. Saturated at 17.0 ft. 17.0 to 18.0 ft. color change to bluish-gray.	X SM X		B8-14.5 ▼ ▽ B8-17.5	0.7	Water sample B8-W collected at 1440; slight PHC and no sheen on sample.Water level subsequently measured at 16.9 ft.
15						
20						Borehole terminated at 18.0 ft. on 10/2/13. Borehole grouted on 10/2/13 using neat cement and a tremie pipe. Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence. <u>Drilling Notes:</u> 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
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P&D ENVIRONMENTAL, INC.

BORING NO.: B11	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 12 ft. north and 20 ft. west of southeast corner of building		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc.	DRILLER: Omar	DATE & TIME STARTED: 9/25/13 1415	DATE & TIME FINISHED: 10/09/13 1630
DRILLING EQUIPMENT: 2.0-inch O.D.hand auger			
COMPLETION DEPTH: 15.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY: PMK
FIRST WATER DEPTH: Not Encountered	NO. OF SAMPLES: 3 Soil		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete (5-inch) and base rock.			No Well Constructed		Borehole hand augered from 0.5 to 5.0 ft. on 9/25/13 using a 3.0-inch O.D. hand auger. Borehole capped with concrete.
	0.5 to 6.5 ft. Brown silty fine sand (SM); medium dense, moist, with fine to medium sand, and orange mottling. No Petroleum Hydrocarbon (PHC) odor. (0,80,20)	SM			0	
5		X		B11-5.0	0	Borehole hand augered from 5.0 to 15.0 ft. on 10/09/13 using a 2.0-inch O.D. hand auger. No water encountered during augering.
	6.5 to 10.0 ft. Grayish-brown clayey fine sand (SC); medium dense, moist, with orange mottling. No PHC odor. (0,75,25)	SC			0	Borehole terminated at 15.0 ft. on 10/09/13. Borehole grouted on 10/09/13 using neat cement grout. Mr. Steve Miller with Alameda County Public Works Agency onsite to observe and document grouting of the borehole.
10		X		B11-9.5		
	10.0 to 13.0 ft. Grayish-brown silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SM			0	
	13.0 to 13.5 ft. Grayish-brown sandy clay (CL); medium stiff, moist, with fine sand. No PHC odor. (0,25,75)	CL				
	13.5 to 15.0 ft. Grayish-brown silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,85,15)	SM			0	
15		X		B11-14.5		
20						Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
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P&D ENVIRONMENTAL, INC.

BORING NO.: B12	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 20 ft. north and 33 ft. west of southeast corner of building		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc.	DRILLER: Omar	DATE & TIME STARTED: 9/25/13 1430	DATE & TIME FINISHED: 9/25/13 1700
DRILLING EQUIPMENT: 3.5-inch O.D.hand auger			
COMPLETION DEPTH: 2.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY:
FIRST WATER DEPTH: Not Encountered	NO. OF SAMPLES: None		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete (5-inch) and base rock.			No Well Constructed	0	Borehole hand augered from 0.5 to 2.0 ft. on 9/25/13 using a 3.5-inch O.D. hand auger.
	0.5 to 2.0 ft. Brown gravelly silty sand (FILL); medium dense, moist, with some coarse angular gravel to 0.25-inch diameter, concrete and brick fragments. No Petroleum Hydrocarbon (PHC) odor. Refusal at concrete slab at 2.0 ft. depth	FILL				Refusal at 2.0 ft. on concrete slab. At a location approximately 5 ft. north of proposed B12 location, a second borehole was hand augered from 0.0 to 2.0 ft and refusal again encountered on concrete slab. At a location approximately 5 ft. east of proposed B12 location, a third borehole was hand augered from 0.0 to 2.0 ft and refusal again encountered on concrete slab. Boreholes grouted on 9/25/13 using neat cement grout. Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence.
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P&D ENVIRONMENTAL, INC.

BORING NO.: B13	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION:	Approximately 37 ft. north and 17 ft. west of southeast corner of building	ELEVATION AND DATUM:	None
DRILLING AGENCY:	IMX, Inc., Vironex, Inc.	DRILLER: Omar, Joel	DATE & TIME STARTED: 9/25/13 1400 / DATE & TIME FINISHED: 10/09/13 1630
DRILLING EQUIPMENT:	3.5-inch O.D.hand auger, Badger		
COMPLETION DEPTH:	13.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD / CHECKED BY:
FIRST WATER DEPTH:	Not Encountered	NO. OF SAMPLES: 2 Soil	

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete (5-inch) and base rock.			No Well Constructed		Borehole hand augered from 0.5 to 5.0 ft. on 9/25/13 using a 3.5-inch O.D. hand auger.
	0.5 to 2.0 ft. Dark brown silty sand (FILL); medium dense, dry, with brick, concrete, and glass fragments, and charred lumber. No Petroleum Hydrocarbon (PHC) odor.				0	
5	2.0 to 9.0 ft. Brown silty sand (FILL); medium dense, moist, with fine to medium sand. No PHC odor. (0,80,20) X	FILL		B13-5.0	0	Borehole continuously cored from 5.0 to 13.0 on 10/02/13 ft. using a 3.0-foot long 2.0-inch O.D. Geoprobe Macrocore barrel sampler containing a 1.5-inch O.D. transparent PVC tube. 5.0 to 8.0 ft. 2.8 ft. recovery 8.0 to 11.0 ft. 2.8 ft. recovery 11.0 to 13.0 ft. 2.0 ft. recovery
	9.0 to 10.0 ft. Grayish-brown sandy clay (FILL); medium stiff, moist, with fine sand, and orange mottling. No PHC odor. (0,20,80) X				0	Borehole temporarily capped with concrete on 10/02/13.
10	10.0 to 13.0 ft. Grayish-brown clayey sand (FILL); dense, moist, with fine sand, and orange mottling. No PHC odor. (0,80,20) Refusal at 13.0 ft. depth on concrete slab.			B13-9.5	0	Borehole hand augered from 12.0 to 13.0 ft. on 10/09/13 using a 2.0-inch O.D. hand auger where refusal was encountered on concrete slab. No water encountered during augering.
15						Borehole terminated at 13.0 ft. on 10/09/13. Borehole grouted on 10/09/13 using neat cement grout. Mr. Steve Miller with Alameda County Public Works Agency onsite to observe and document grouting of the borehole.
20						Drilling Notes: 1) Field estimates of percent gravel, sand, and fines are shown in parentheses. 2) Density determinations are qualitative and are not based on quantitative evaluation.
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P&D ENVIRONMENTAL, INC.

BORING NO.: B14	PROJECT NO.: 0590	PROJECT NAME: 1900 Webster Street, Oakland	
BORING LOCATION: Approximately 6 ft. north and 5 ft. west of southeast corner of dental station		ELEVATION AND DATUM: None	
DRILLING AGENCY: IMX, Inc.	DRILLER: Omar	DATE & TIME STARTED: 10/09/13 1355	DATE & TIME FINISHED: 10/09/13 1630
DRILLING EQUIPMENT: 2.0-inch O.D.hand auger			
COMPLETION DEPTH: 15.0 Feet	BEDROCK DEPTH: Not Encountered	LOGGED BY: MLBD	CHECKED BY:
FIRST WATER DEPTH: Not Encountered	NO. OF SAMPLES: 3 Soil		

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	BLOW COUNT PER 6"	WELL CONSTRUCTION LOG	PID	REMARKS
	0.0 to 0.5 ft. Concrete (5-inch) and base rock.			No Well Constructed		Borehole hand augered from 0.5 to 15.0 ft. on 10/09/13 using a 2.0-inch O.D. hand auger.
	0.5 to 2.5 ft. Dark brown silty sand (FILL); medium dense, moist, with concrete and brick fragments. No Petroleum Hydrocarbon (PHC) odor.	FILL			0	
	2.5 to 6.0 ft. Light brown silty fine sand (SM); medium dense, moist, with orange mottling. No PHC odor. (0,80,20)	SM				No water encountered during augering.
5		X		B14-5.0	0	Borehole terminated at 15.0 ft. on 10/09/13. Borehole grouted on 10/09/13 using neat cement grout.
	6.0 to 9.0 ft. Olive-gray fine sand (SP); medium dense, moist. No PHC odor. (0,95,5)	SP				Mr. Steve Miller with Alameda County Public Works Agency gave verbal authorization to grout borehole without his presence.
	9.0 to 10.0 ft. Grayish-brown clayey fine sand (SC); medium dense, moist, with reddish-orange mottling. No PHC odor. (0,80,20)	SC			0	
10		X		B14-9.5		Drilling Notes:
	10.0 to 13.0 ft. Gray sandy clay (CL); medium stiff, moist, with fine sand. No PHC odor. (0,20,80)	CL			0	1) Field estimates of percent gravel, sand, and fines are shown in parentheses.
	13.0 to 15.0 ft. Gray clayey fine sand (SC); medium dense, moist, with orange mottling. Moderate PHC odor. (0,65,35)	SC			9	2) Density determinations are qualitative and are not based on quantitative evaluation.
15		X		B14-14.5	34	
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BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/2/2015 START: 1345
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-4 STOP: 1500
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE CLASSIFICATION		REMARKS, ODORS & BLOW COUNT
0							Concrete		
1									
2				Dry	Light Brown	Loose	Silty Medium Sand	SM	No Odor
3		SB-4-3'	0.0						
4				Slightly Moist	Light Brown Mottled Dark Brown	Loose	Silty Medium Sand	SM	No Odor
5	GROUT								
6			0.8						
7		SB-4-7'							
8									
9			0.0						
10				Slightly Moist	Brown	Medium Dense	Silty Medium Sand	SM	No Odor
11									
12			0.2						
13									
14				Moist	Grayish Brown	Dense	Silty Medium Sand	SM	No Odor
15									
16			0.0						
17									
18				Moist	Brown	Dense	Silty Medium Sand	SM	No Odor
19 ▼									
20			0.0	Wet	Brown	Dense	Silty Medium Sand	SM	No Odor
21									
22				Wet	Mottled Brown	Firm	Clay with Some Silt and Trace Fine to Medium Sand	CL	No Odor
23			0.0						
24				Wet	Brown	Dense	Silty Sand with Gravel	SM	No Odor
25			0.0						

TOTAL BORING DEPTH: 25' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 19'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/3/2015 START: 1120
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-5 STOP: 1300
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
1	GROUT						Asphalt		
2				Moist	Brown	Medium Loose	Silty Sand	SM	No Odor
3			0.3						
4									
5									
6			0.2						
7									
8									
9			0.0						
10				Moist	Brown	Medium Loose	Silty Sand (Increased Silt)	SM	No Odor
11				Moist	Brown	Firm	Sandy Clay	CL	No Odor
12									
13				Moist	Brown	Dense	Silty Sand	SM	No Odor
14			0.0						
15									
16									
17			0.2						
18									
19									
20									
21			0.3						
22				Moist	Gray	Stiff	Clay	CL	No Odor
23				Wet	Brown	Stiff	Sandy Clay	CL	No Odor
24									
25									

TOTAL BORING DEPTH: 25' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: 22.5'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/3/2015 START: 1330
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-6 STOP: 1500
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
0							Asphalt		
2	GROUT		0.2	Dry	Dark Brown / Light Brown	Loose	Silty Sand	SM	No Odor
5			0.2						
8			0.0	Slightly Moist	Brown	Medium Dense			
12			0.0						
14				Moist	Grayish Brown	Firm	Sandy Clay	CL	No Odor
16			0.0	Moist	Brown	Dense	Silty Sand	SM	No Odor
18			6.0	Moist	Greenish Gray	Loose	Silty Sand	SM	Strong Hydrocarbon Odor
20			2.6	Moist	Brown	Firm			Mild Hydrocarbon Odor
22 ▼			204	Moist	Greenish Gray	Medium Dense	Silty Sand	SM	Strong Hydrocarbon Odor
23				Wet	Greenish Gray	Firm	Clay	CL	Strong Hydrocarbon Odor
25			203	Wet	Greenish Gray	Loose	Silty Sand	SM	Strong Hydrocarbon Odor

TOTAL BORING DEPTH: 25' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 22'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/3/2015 START: 0715
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-7 STOP: 0915
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
0							Concrete/Asphalt		
2	GROUT		0.1	Moist	Dark Brown	Loose	Silty Sandwith Some Gravel and Pieces of Brick, Trace Clay	SM	No Odor
6			0.3	Moist	Light Brown	Medium Dense	Silty Sand	SM	No Odor
8					Brown				
9			0.2						
10					Grayish Brown				
12				Moist	Gray	Stiff	Sandy Clay	CL	No Odor
13			0.0						
17			0.5						
18				Moist	Grayish Brown	Medium Dense	Silty Sand	SM	No Odor
20			0.3						
21				Very Moist	Light Brown	Stiff	Sandy Clay	CL	No Odor
22			0.6						
23 ▼			0.0	Wet	Brown	Dense	Silty Sand	SM	Slight Hydrocarbon Odor
24				Wet	Greenish Gray	Very Stiff	Clay with Trace Silt	CL	Strong Hydrocarbon Odor
25			45.2						

TOTAL BORING DEPTH: 25' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 23'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/3/2015 START: 0920
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-8 STOP: 1100
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
1							Concrete/Asphalt		
2	GROUT			Slightly Moist	Light Brown	Loose	Silty Sand	SM	No Odor
3			0.4						
4									
5									
6			0.3		Brown	Medium Dense			No Odor
7									
8									
9			0.3						
10					Grayish Brown	Dense			No Odor
11									
12									
13			0.3						
14					Grayish Brown	Dense			
15									
16			0.2	Moist					
17									
18 ▼			0.1	Wet	Grayish Brown	Dense	Silty Sand	SM	No Odor
19									
20									
21									
22			0.0	Wet	Grayish Brown	Dense	Silty Sand	SM	No Odor
23									
24									
25									

TOTAL BORING DEPTH: 22' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 18'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/2/2015 START: 1115
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-9 STOP: 1330
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS, ODORS & BLOW COUNT
1							Concrete/Asphalt		
2							Road Base		
3	GROUT	SB-9-3'	0.5	Dry	Light Brown	Very Loose to Loose	Medium Sand with Silt and Some Gravel (Gravel Decreasing with Depth and Silt Increasing with Depth)	SM	No Odor
4									
5									
6			0.0						
7		SB-9-7'							
8									
9									
10				Slightly Moist	Grayish Brown	Loose	Silty Sand	SM	No Odor
11			0.6						
12									
13				Slightly Moist to moist	Brown Mottled Grayish Brown	Dense	Silty Sand	SM	No Odor
14									
15			0.7						
16									
17									Slight Hydrocarbon Odor
18			6.1	Moist	Greenish Gray	Dense	Silty Sand	SM	Strong Hydrocarbon Odor
19 ▼									
20									
21			0.5						
22				Very Wet	Grayish Brown	Dense	Silty Sand	SM	Slight Hydrocarbon Odor
23									
24									
25			0.1						

TOTAL BORING DEPTH: 25' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 19'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/2/2015 START: 0910
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SB-10 STOP: 1100
DRILLING METHOD: GeoProbe SAMPLE METHOD: Direct Push

DEPTH (FEET)	BORING DIAMETER: –	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS, ODORS & BLOW COUNT
1							Concrete/Asphalt		
2							Road Base		
3		SB-10-3'							
4	GROUT		0.0	Slightly Moist	Light Brown	Loose	Silty Sand with Trace Gravel	SM	No Odor
5									
6				Slightly Moist	Medium Brown	Loose	Medium to Coarse Sand with Trace Silt and Trace Gravel (Increasing Gravel with Depth)	SM	No Odor
7		SB-10-7'							
8			0.0	Slightly Moist	Grayish Brown	Loose	Silty Sand Fine to Medium Grain No Gravel	SM	No Odor
9									
10									
11			0.0						
12				Moist	Reddish Brown	Loose	Silty Sand Fine to Medium Grain	SM	No Odor
13									
14				Moist	Grayish Brown	Loose	Silty Sand Fine to Medium Grain	SM	No Odor
15									
16			0.5						Slight Hydrocarbon Odor
17		SB-10-17'							
18 ▼			5.5	Wet	Greenish Gray	Medium Dense	Silty Sand Fine to Medium Grain	SM	Strong Hydrocarbon Odor
19									
20			29.9						
21									
22									
23									
24									
25									

TOTAL BORING DEPTH: 20' PAGE NO: 1 OF 1 ▼ ESTIMATED GROUNDWATER DEPTH: 18'

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California

PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____

LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____

DATE: 2/4/2015 START: 0922
DRILLING COMPANY: Gregg DRILLER: L.S.

WELL ID: SG-1A STOP: 0945
DRILLING METHOD: Hand Auger SAMPLE METHOD: N/A

DEPTH (FEET)	VAPOR POINT CONSTRUCTION DIAMETER: 0.25"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
0							Concrete/Asphalt		
1	GROUT			Dry	Dark Brown	Loose	Silty Sand with Crushed Brick	SM	No Odor
2	HYDRATED BENTONITE								
3	DRY BENTONITE #2/12 SAND								
4									
5									

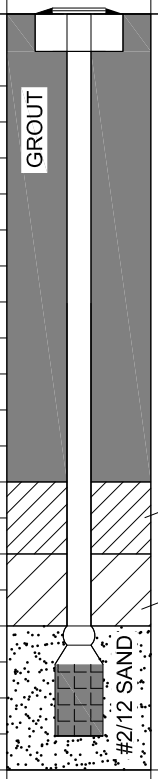
TOTAL BORING DEPTH: 3.5' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/4/2015 START: 0945
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SG-1B STOP: 1010
DRILLING METHOD: Hand Auger SAMPLE METHOD: N/A



DEPTH (FEET)	VAPOR POINT CONSTRUCTION DIAMETER: 0.25"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS & ODORS
							Concrete/Asphalt		
1	GROUT			Dry	Brown	Loose	Silty Sand with BrickPieces	SM	No Odor
2									
3			0.0	Slightly Moist	Dark Brown	Medium			
4	HYDRATED BENTONITE / DRY BENTONITE								
5	#2/12 SAND				Light Brown				

TOTAL BORING DEPTH: 5.5' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/4/2015 START: 0820
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SG-2A STOP: 0835
DRILLING METHOD: Hand Auger SAMPLE METHOD: N/A

DEPTH (FEET)	VAPOR POINT CONSTRUCTION DIAMETER: 0.25"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS & ODORS
0							Concrete/Asphalt		
1	GROUT						Road Base and Brick		
2	HYDRATED BENTONITE								
3	DRY BENTONITE #2/12 SAND		0.0	Slightly Moist	Brown	Medium Dense	Silty Sand with Some Clay	SM	No Odor
4									
5									

TOTAL BORING DEPTH: 3.5' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 596A
SITE ADDRESS: 1900 Webster Street, Oakland, California
PROJECT NUMBER: 14-90-103
LEGAL DESC: _____ APN: _____
LOGGED BY: Nick Vrdoljak
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 2/4/2015 START: 0745
DRILLING COMPANY: Gregg DRILLER: L.S.
WELL ID: SG-2B STOP: 0820
DRILLING METHOD: Hand Auger SAMPLE METHOD: N/A

DEPTH (FEET)	VAPOR POINT CONSTRUCTION DIAMETER: 0.25"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS & ODORS
							Concrete/Asphalt		
1	GROUT								
							Road Base with Brick Pieces		
2									
3	HYDRATED BENTONITE		0.2	Slightly Moist	Light Brown	Loose	Silty Sand	SM	No Odor
4	DRY BENTONITE								
5	#2/12 SAND								

TOTAL BORING DEPTH: 5.5' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

APPENDIX C

Sensitive Receptor Survey Data

Drawing C-1: 2,000 Foot Search Radius
Sensitive Receptor Survey Results

ARCO Station 569-A
1900 Webster Street, Oakland CA

BROADBENT
Date: 5/12/2016
Project #: 14-90-103

Datum: WGS 1984 Web Mercator Auxiliary Sphere Image Source: Bing Maps

Table C.1. SUMMARY OF DRILLER'S REPORTS
ARCO STATION 569-A
1900 WEBSTER STREET, OAKLAND, CA

ID	Address	City	Update	Xcoord	Ycoord	Township/Range	Section	Drill Date	Elevation	Total Depth	Water Depth	Diameter	Use
1	244 Lakeside	Oakland	31028	-122.262389	37806953	1S/4W	35A 2	1977	0	95	30	6	IRR
2	2100 Harrison Street	Oakland	4/17/1991	-122.262261	37810004	1S/4W	26R 03	3/91	0	290	20	6	IRR
3	2100 Harrison Street	Oakland	4/17/1991	-122.262261	37810004	1S/4W	26R 02	2/91	0	290	0	5	DOM
4	Corner of Clay & 14th St.	Oakland	12/20/1988	-122.253773	37819428	1S/4W	25C 3 (35?)	-	0	0	0	0	UNK
5	14th & Clay	Oakland	6/15/1989	-122.272599	37805917	1S/4W	35C 1	-	0	0	0	0	UNK
6	14th & Clay	Oakland	6/15/1989	-122.272599	37805917	1S/4W	35C 2	-	0	0	0	0	UNK
7	13th & Harrison	Oakland	11/8/1989	-122.268154	37802549	1S/4W	35G12	-	0	0	0	0	UNK
8	13th & Harrison	Oakland	11/8/1989	-122.268154	37802549	1S/4W	35G13	-	0	0	0	0	UNK

TABLE C.2. CALIFORNIA NATURAL DIVERSITY DATABASE RESULTS
ARCO STATION #569-A
1900 WEBSTER STREET, OAKLAND, CA

RECORD	QUADRANGLE	ELEMENT CODE	SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	CALIFORNIA STATUS	DFG STATUS	CNPS LIST
1	Oakland West	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	Threatened	SSC	-
2	Oakland West	ABNKC12040	Accipiter cooperii	Cooper's hawk	None	None	WL	-
3	Oakland West	ABNKC11010	Circus cyaneus	northern harrier	None	None	SSC	-
4	Oakland West	ABNKC06010	Elanus leucurus	white-tailed kite	None	None	FP	-
5	Oakland West	ABNGA04010	Ardea herodias	great blue heron	None	None	-	-
6	Oakland West	ABNGA01020	Botaurus lentiginosus	American bittern	None	None	-	-
7	Oakland West	ABNGA11010	Nycticorax nycticorax	black-crowned night heron	None	None	-	-
8	Oakland West	ABNNB03031	Charadrius alexandrinus nivosus	western snowy plover	Threatened	None	SSC	-
9	Oakland West	ABPAV09020	Pica nuttalli	yellow-billed magpie	None	None	-	-
10	Oakland West	ABPBXA0020	Ammodramus savannarum	grasshopper sparrow	None	None	SSC	-
11	Oakland West	ABPBX96010	Chondestes grammacus	lark sparrow	None	None	-	-
12	Oakland West	ABPBXA301S	Melospiza melodia pusillula	Alameda song sparrow	None	None	SSC	-
13	Oakland West	ABPBX99011	Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	SSC	-
14	Oakland West	ABPBX94020	Spizella passerina	chipping sparrow	None	None	-	-
15	Oakland West	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SSC	-
16	Oakland West	ABPBR01030	Lanius ludovicianus	loggerhead shrike	None	None	SSC	-
17	Oakland West	ABNNM08103	Sternula antillarum browni	California least tern	Endangered	Endangered	FP	-
18	Oakland West	ABPAW01100	Baeolophus inornatus	oak titmouse	None	None	-	-
19	Oakland West	ABPBX1201A	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None	SSC	-
20	Oakland West	ABPBX03090	Setophaga occidentalis	hermit warbler	None	None	-	-
21	Oakland West	ABPBX03010	Setophaga petechia	yellow warbler	None	None	SSC	-
22	Oakland West	ABNFC01021	Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted	FP	-
23	Oakland West	ABNFD01020	Phalacrocorax auritus	double-crested cormorant	None	None	WL	-
24	Oakland West	ABNME03041	Laterallus jamaicensis coturniculus	California black rail	None	Threatened	FP	-
25	Oakland West	ABNME05016	Rallus longirostris obsoletus	California clapper rail	Endangered	Endangered	FP	-
26	Oakland West	ABNSB13040	Asio flammeus	short-eared owl	None	None	SSC	-
27	Oakland West	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SSC	-
28	Oakland West	ABNUC51020	Selasphorus rufus	rufous hummingbird	None	None	-	-
29	Oakland West	ABNUC51030	Selasphorus sasin	Allen's hummingbird	None	None	-	-
30	Oakland West	AFCQN04010	Eucyclogobius newberryi	tidewater goby	Endangered	None	SSC	-
31	Oakland West	AFCHB01040	Hypomesus transpacificus	Delta smelt	Threatened	Endangered	-	-
32	Oakland West	AFCHB03010	Spirinchus thaleichthys	longfin smelt	Candidate	Threatened	SSC	-
33	Oakland West	AFCHA0209G	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	Threatened	None	-	-
34	Oakland West	AFCHA0205N	Oncorhynchus tshawytscha	chinook salmon - Central Valley fall / late fall-run ESU	None	None	SSC	-
35	Oakland West	IIHYM24380	Bombus caliginosus	obscure bumble bee	None	None	-	-
36	Oakland West	IIHYM24250	Bombus occidentalis	western bumble bee	None	None	-	-
37	Oakland West	IICOL02101	Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	-	-
38	Oakland West	IIHYM80010	Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	None	None	-	-
39	Oakland West	IILEPP2012	Danaus plexippus pop. 1	monarch - California overwintering population	None	None	-	-
40	Oakland West	AMACD04020	Nyctinomops macrotis	big free-tailed bat	None	None	SSC	-
41	Oakland West	AMAFF02040	Reithrodontomys raviventris	salt-marsh harvest mouse	Endangered	Endangered	FP	-
42	Oakland West	AMABB02031	Scapanus latimanus parvus	Alameda Island mole	None	None	SSC	-
43	Oakland West	AMACC10010	Antrozous pallidus	pallid bat	None	None	SSC	-
44	Oakland West	AMACC08010	Corynorhinus townsendii	Townsend's big-eared bat	None	Candidate Threatened	SSC	-
45	Oakland West	AMACC05030	Lasiurus cinereus	hoary bat	None	None	-	-
46	Oakland West	IMGASJ7040	Tryonia imitator	mimic tryonia (=California brackishwater snail)	None	None	-	-
47	Oakland West	ARACF12100	Phrynosoma blainvillii	coast horned lizard	None	None	SSC	-
48	Oakland West	CTT52110CA	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None	-	-
49	Oakland West	PDAPI1Z0D0	Sanicula maritima	adobe sanicle	None	Rare	-	1B.1
50	Oakland West	PDAST4R065	Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	-	1B.2
51	Oakland West	PDAST4X020	Holocarpha macradenia	Santa Cruz tarplant	Threatened	Endangered	-	1B.1
52	Oakland West	PDAST5N010	Layia carnosa	beach layia	Endangered	Endangered	-	1B.1
53	Oakland West	PDBOR01070	Amsinckia lunaris	bent-flowered fiddleneck	None	None	-	1B.2
54	Oakland West	PDBOR0V061	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	None	None	-	1B.2
55	Oakland West	PDCPR07080	Viburnum ellipticum	oval-leaved viburnum	None	None	-	2B.3

TABLE C.2. CALIFORNIA NATURAL DIVERSITY DATABASE RESULTS
ARCO STATION #569-A
1900 WEBSTER STREET, OAKLAND, CA

RECORD	QUADRANGLE	ELEMENT CODE	SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	CALIFORNIA STATUS	DFG STATUS	CNPS LIST
56	Oakland West	PDCHE041F3	Extriplex joaquinana	San Joaquin spearscale	None	None	-	1B.2
57	Oakland West	PDCHE0P020	Suaeda californica	California seablite	Endangered	None	-	1B.1
58	Oakland West	PMCYP032Y0	Carex comosa	bristly sedge	None	None	-	2B.1
59	Oakland West	PDFAB0F8R1	Astragalus tener var. tener	alkali milk-vetch	None	None	-	1B.2
60	Oakland West	PDFAB400R5	Trifolium hydrophilum	saline clover	None	None	-	1B.2
61	Oakland West	PDGER01070	California macrophylla	round-leaved filaree	None	None	-	1B.2
62	Oakland West	PDSCR0D401	Castilleja ambigua var. ambigua	johnny-nip	None	None	-	4.2
63	Oakland West	PDSCR0J0C3	Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	None	None	-	1B.2
64	Oakland West	PDPLM040B3	Gilia capitata ssp. chamissonis	blue coast gilia	None	None	-	1B.1
65	Oakland West	PDPLM09180	Leptosiphon rosaceus	rose leptosiphon	None	None	-	1B.1
66	Oakland West	PDPGN04081	Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	None	None	-	1B.2
67	Oakland West	PDPGN040Q2	Chorizanthe robusta var. robusta	robust spineflower	Endangered	None	-	1B.1
68	Oakland West	PDPGN0L1C0	Polygonum marinense	Marin knotweed	None	None	-	3.1
69	Oakland West	PMPON03010	Heteranthera dubia	water star-grass	None	None	-	2B.2
70	Oakland West	PDROS0W043	Horkelia cuneata var. sericea	Kellogg's horkelia	None	None	-	1B.1

NOTES:

1. FP = FULLY PROTECTED; SSC = SPECIES OF SPECIAL CONCERN; WL = WATCH LIST
2. CALIFORNIA NATIVE PLANT SOCIETY (CNPS)