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Subject: Site Management Plan,  
27<sup>th</sup> and Broadway,  
Alameda, California  
RO#0003191

**PERJURY STATEMENT**

I declare that to the best of my knowledge at the present time, the information contained in the attached document or report are true and correct.



Kathy K. Binford

Vice President

Hanover R.S. Limited Partnership

5847 San Felipe, Suite 3600

Houston, TX 77057

# SITE MANAGEMENT PLAN


27<sup>TH</sup> AND BROADWAY

OAKLAND, CALIFORNIA

The logo for ENGEO is rendered in large, white, 3D block letters. The letters are set against a background of a green, rolling hillside under a blue sky. The 'E' and 'O' are particularly prominent. The logo is positioned in the center of the page, overlapping a blue horizontal band.

# ENGEO

*Expect Excellence*

A photograph showing a rocky, brownish terrain with large, angular rocks and smaller pebbles scattered across the ground. The rocks are set against a light, hazy background.

**Prepared for:**  
Ms. Kristen Gates, P.E.  
Hanover R.S. Limited Partnership  
5847 San Felipe, Suite 3600  
Houston, TX 77057

**Prepared by:**  
ENGEO Incorporated

July 22, 2016

**Project No.**  
11982.000.000

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Ms. Kristen Gates, P.E.  
Hanover R.S. Limited Partnership  
5847 San Felipe, Suite 3600  
Houston, TX 77057

Subject: 27<sup>th</sup> and Broadway  
Oakland, California

## **SITE MANAGEMENT PLAN**

Dear Ms. Gates:

As requested, ENGEO has prepared this Site Management Plan for the subject site (Site) in Oakland, California. The plan includes a summary of activities that have taken place at the Site, proposed redevelopment, and our recommendations for mitigation as needed.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated



Divya Bhargava, PE  
db/sm/jf



Shawn Munger, CHG

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**APPENDIX B** - Dust Control Plan

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## **1.0 INTRODUCTION**

This Site Management Plan (SMP) has been prepared for the proposed development activities at the 1.1-acre Site located at 2630 Broadway in Oakland, California (Figure 1). The SMP is intended to provide management of soil and groundwater associated with the 27<sup>th</sup> and Broadway development in accordance with the 75% Construction Drawings prepared by TCA Architects, and dated May 26, 2016.

The Site is identified with Assessor's Parcel Number (APN) 9-685-18-6, and is currently occupied by a vacant large circular structure, along with parking space used by an automotive dealership. The purpose of the SMP is to provide the proposed procedures and protocols to address potential soil impacts that may be encountered during demolition and site grading activities.

### **1.1 SITE LOCATION**

The Site is located at 2630 Broadway in Oakland (Figure 1). The Site is approximately 1.1 acres in area and is identified by APN 9-685-18-6. The Site is located in a mixed commercial/industrial and residential area of Oakland.

The Site is currently occupied by one vacant large circular structure (formerly used as a restaurant), along with parking space used by an automotive dealership. It is bounded by Broadway to the west, 27<sup>th</sup> Street to the north/northeast, and 26<sup>th</sup> Street to the south.

### **1.2 SITE BACKGROUND**

The Site was previously occupied by a gas station and the Sisters of Providence Hospital. Gasoline underground storage tanks (USTs) and waste-oil tanks were reportedly installed in the western portion of the Site in 1962, when the Site was first occupied by a fuel service station. A restaurant was also constructed on the eastern portion of the Site sometime between 1958 and 1968. In 1998, the fuel service station was demolished, the USTs were removed and the Site was paved. Impacted soil was excavated and groundwater was pumped from the excavation and disposed offsite.

Based on a review of historic records, the Site had the following historic uses:

- Former Sisters of Providence Hospital: Approximately 1903 to 1940s
- Car dealership: Approximately 1950-1962
- Gas station - Chevron (western portion of Site): 1960s until 1999
- Biff's Coffee and JJ's Diner (eastern portion of Site): 1962 to 1997

Several investigations and cleanup actions, including excavations and groundwater monitoring, were conducted at the Site between 1982 and 2012. Metals, total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as motor oil (TPH-mo) and volatile organic compounds (VOCs) were detected at elevated

concentrations in soil and groundwater at the Site. Subsequent remediation activities (including groundwater oxygenation and light non-aqueous phase liquid (LNAPL) removal) and groundwater monitoring activities were conducted at the Site until 2012. Additionally, soil vapor sampling was conducted at the Site in 2008, and detectable concentrations of VOCs and TPH-g were observed. The site was granted closure by the Alameda County Department of Environmental Health (ACDEH) and the Regional Water Quality Control Board (RWQCB) under a low threat policy for the fuel leak case in May 2014.

During the site investigation conducted in 1998, old fill material consisting of burnt wood, bricks, ashes and concrete was encountered in the northern excavation areas. Concrete footings and basement floor slabs were also discovered (at 5 to 8 feet below ground surface). The fill material and foundation appeared to be associated with the former Sisters of Providence Hospital that existed at the Site. Lead contamination was observed in the vicinity of the waste oil tank. Additionally, impacts due to metals (specifically lead and zinc) and semi-volatile organic compounds (SVOCs) were observed in the fill material.

### **1.3 SITE GEOLOGY AND HYDROGEOLOGY**

According to published topographic maps, the elevation at the Site is approximately between 18 to 25 feet above mean sea level (msl). A review of the 1997 Graymer et al. Geologic Map (Graymer 1997) found that the Site is primarily underlain by basin deposits (Qhd; basin deposits). Previous investigations have identified the presence of fill across the Site.

Previous investigations conducted at the Site indicate that direction of groundwater flow in the vicinity of the Site has been found to be variable, and groundwater was observed between approximately 8 to 17 feet below the ground surface.

### **1.4 PROPOSED DEVELOPMENT**

The proposed mixed-use redevelopment (27<sup>th</sup> and Broadway) will consist of a podium-type structure with retail and commercial spaces in a 20-foot-high first story, which will be topped by six stories of residential units (Figure 2). The building includes five levels of wood-frame structure, two levels of concrete podium structure, and up to three levels of concrete subterranean parking structure. The approximate depth of the excavation is 40 feet below ground surface.

### **1.5 PURPOSE OF SMP**

We met with the ACDEH staff on June 4, 2015, to discuss the findings of the previous analytical results for the Site and to discuss the next steps. We were informed by ACDEH that a new case will need to be created for contamination related to the former hospital. A Site Management Plan would need to be prepared to manage any impacted soil encountered during grading and construction activities.

The purpose of this SMP is to describe the procedures and protocols that may be needed if soil impacts and other environmental conditions are encountered at the Site during demolition and

grading activities. Implementation of the SMP will manage residual contaminants in the subsurface at the Site in a manner that is both protective of human health and the environment and compatible with current and future land uses.

## **2.0 PREVIOUS ENVIRONMENTAL REPORTS**

### ENGEO, Phase I Environmental Site Assessment, 2630 Broadway, Oakland, California, May 21, 2015

ENGEO conducted a phase I ESA for the Site in May 2015. Based on the findings of this assessment, the following Historic Recognized Environmental Condition (HREC) was identified for the Site:

- The Site was formerly occupied by a hospital and a gasoline service station. The Site (Chevron #9-2506) is listed on the San Francisco Regional Water Control Board's (RWQCB) GeoTracker online database as a closed leaking underground storage tank (LUST) cleanup site. The Site was granted closure in May 2014.

The following potential REC was identified for the Site:

- Based on previous investigations, potential residual impacts exist on the Site related to fill material associated with the former hospital.

A phase II environmental assessment was recommended to characterize the soil and groundwater at the Site for disposal purposes and to conduct a preliminary fill characterization.

### ENGEO, Phase II Environmental Site Assessment, 2630 Broadway, Oakland, California, Draft, October 28, 2015

ENGEO conducted a phase II ESA for the Site to characterize the soil and groundwater at the Site for disposal purposes and to conduct a preliminary fill characterization.

Field sampling activities were conducted in two stages. The first round of field activities were performed on April 30, May 1, and May 6, 2015. A second round of field activities were conducted to further delineate the extent of the fill material as well as sampling along the northwestern perimeter of the Site. This work was conducted on September 16 and 17, 2015. A description of the field activities is provided below:

#### *Initial Characterization Activities*

As a part of the initial characterization, a total of 11 borings (S-1 to S-11) were advanced to a depth of 20 to 30 feet below the ground surface. Soil samples were collected at approximate depths of 5, 10, and 15 feet below the ground surface from each of the borings (as well as 20 and 25 feet in some borings). Soil samples were analyzed for the following:

- TPH-g and VOCs (EPA Method 8260B), and lead (EPA 6010) on a discrete basis.
- CAM-17 metals (EPA 6010/7471), TPH-d and TPH-mo (EPA Method 8015M with silica gel cleanup), polychlorinated biphenyls (PCBs) (EPA 8082), SVOCs (EPA 8270), and asbestos (PLM) on a 3-point or 4-point composite basis (at each boring location).

In addition, grab groundwater samples were collected from four boring locations (GW-1, GW-4, GW-7, and GW-11) as shown on Figure 3 and were analyzed for oil & grease (EPA 1664A), VOCs including TPH-g and BTEX compounds (EPA 8260B), SVOCs (EPA 625), and dissolved metals (EPA 200.7).

### *Supplemental Characterization Activities*

A supplemental site characterization was proposed for the Site to further delineate the extent of the fill material and to conduct sampling along the northwestern perimeter of the Site to assess residual impacts due to the former dispenser islands and USTs. As a part of this task, a total of six borings (P-1 through P-6) were advanced along the northwestern perimeter of the Site to a depth of approximately 8 feet below ground surface to assess residual impacts due to the former dispenser islands and USTs. Soil samples were collected at an approximate depth of 1 foot below ground surface, and an additional sample was collected at depths ranging between 3½ to 5 feet below the ground surface from each of the borings. The samples were analyzed for TPH-d/VOCs and lead.

Nine additional borings (S-12 through S-20) were advanced within the footprint of the former hospital (Figure 3) to a depth of 25 feet below ground surface to further characterize the extent of the lead-impacted fill material at the Site. Soil samples were collected at approximate depths of 5, 10, 15, 20, and 25 feet below the ground surface from each of the borings and were analyzed for TPH-d/VOCs and lead.

### *Analytical Results*

Several target analytes were detected in soil samples, including VOCs, SVOCs, TPH-g, TPH-d, TPH-mo, and metals. MTBE, naphthalene, ethylbenzene, m,p-xylene, o-xylene, and TPH-g were amongst the VOCs detected at concentrations exceeding corresponding residential ESLs. TPH-d and TPH-mo exceeded the corresponding residential ESLs in the composite soil sample collected from boring S-1. PCBs and asbestos were not detected in any of the composite soil samples collected from the Site. Analytical data for soil samples is summarized in Tables A, B, and C of Appendix A.

Two SVOC analytes, benzo[k]fluoranthene and dibenz[a,h]anthracene, were detected at concentrations exceeding their corresponding ESLs in the composite soil sample collected from one boring in the northwest corner of the Site (S-1). Lead was detected in several borings at concentrations exceeding its corresponding Department of Toxic Substances Control's (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3 Modified Screening Levels for Soil (DTSC-SL) value. These borings appear to be within the fill



material observed at the Site. Based on the characterization data, it was concluded that the vertical and lateral extent of the impacted fill material had been properly delineated.

Based on the findings of the assessment, a Site Management Plan was recommended to manage any impacted soil encountered during grading and construction activities. Impacted soil encountered would need to be off-hauled to an appropriate facility for disposal.

### **3.0 EXTENT OF IMPACTS**

#### **3.1 EXTENT OF SOIL IMPACTS**

Analytical data for soil is summarized in the attached Tables A, B, and C (Appendix A). Based on a review of the laboratory analyses, soil impacts are mostly limited to the upper 15 feet at the Site. Analytes detected at concentrations exceeding their corresponding residential screening levels included TPH-g, TPH-d, TPH-mo, VOCs (including MTBE, naphthalene, ethylbenzene, m,p-xylene, o-xylene), metals, and SVOCs (benzo[k]fluoranthene and dibenz[a,h]anthracene).

The benzo(a)pyrene equivalent was calculated for the SVOCs, and is presented in Table D of Appendix A.

As a part of the proposed development, all of the soil represented by the samples in Tables A, B, and C will be excavated and properly disposed. All the historic boring locations overlaid on the proposed development are presented as Figure 2.

Figure 4 presents three cross sections across the Property.

#### **3.2 EXTENT OF GROUNDWATER IMPACTS**

The groundwater depth at the Site varied between 8 to 17 feet. Laboratory testing of the groundwater samples exhibited low detectable concentrations of TPH-g and other VOCs, SVOCs (benzoic acid), and dissolved metals.

TPH-g was detected in only one groundwater sample (GW-7) at a concentration of 89 micrograms per liter ( $\mu\text{g/L}$ ). Other VOCs detected include benzene, toluene, ethylbenzene, m,p-xylene, o-xylene, isopropyl benzene, n-propyl benzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, naphthalene, MTBE, and tert-amyl methyl ether (TAME). Analytical data for groundwater samples is summarized in Table E of Appendix A.

Based on these results, no significant impact has been identified to groundwater at the Site.

#### **3.3 EXTENT OF SOIL GAS IMPACTS**

Versar had collected 13 soil gas samples from the Property in 2008. Analytical data for soil gas samples is summarized in Table F of Appendix A. TPH-g was detected at concentrations exceeding the corresponding residential screening level. Since the proposed development

consists of a podium-type structure with up to three levels of concrete subterranean parking structure, vapor intrusion is not a concern for the future occupants of the proposed development.

#### **4.0 DEMOLITION AND EXCAVATION ACTIVITIES**

ENGEO will observe demolition and Site grading activities. Soils encountered during construction activities will be observed for discoloration/staining or olfactory evidence of contaminant impacts. In addition, a Photoionization Detector (PID) will be used to further screen soils for organic vapors during excavation work, with particular attention given to the area of the former USTs. In the event impacted soil is encountered during demolition and pre-grading work, this Site Management Plan will be implemented.

The PID will provide real-time data on the presence of potentially hazardous compounds to ensure proper selection of Personnel Protection Equipment (PPE). The initial PPE will be Level D (modified) which includes safety glasses, hard hat, steel-toed boots, gloves, hearing protection and high visibility vests. In the unlikely event significant unforeseen environmental conditions are discovered, work will stop and the PPE level will be re-evaluated.

In the event impacted soil is encountered, the protocols detailed in Section 5.4 will be implemented.

Groundwater has been observed at the Site at depths ranging between 8 to 17 feet below ground surface; therefore, given the proposed maximum depth of excavation (approximately 40 feet) groundwater will be encountered during construction work and construction dewatering will be required (Section 6.0).

### **5.0 SOIL MANAGEMENT**

#### **5.1 CONSTRUCTION ACTIVITIES**

The proposed soil mitigation consists of the removal of impacted soil (any soil exhibiting discoloration/staining or olfactory evidence of contaminant impacts, and any debris from the former hospital), if any, encountered during demolition/construction that represents a significant risk to future human occupants. As previously indicated, all of the documented impacted soil within the site footprint will be excavated as part of the excavation required for the planned development. The excavated soil will be segregated and separately stockpiled based on the results of the prior characterization and activities conducted at the Site. Impacted soil will then be offhauled to a Class I or Class II facility for disposal, depending on the previous analytical results and the receiving facility requirements.

Work activities will be conducted in accordance with building permit requirements. Excavation will be performed using a combination of scrapers, backhoes, track-mounted excavators and/or loaders. The contractor will adhere to OSHA guidelines. If excavations require shoring, it will be provided by the contractor.

All future utility trenches and landscape excavations outside of the Site boundary (in the area of the former hospital fill) will be conducted by a HAZWOPER-certified personnel, under the oversight of ENGEO. The excavated soil will be profiled and offhauled to an appropriate facility for disposal. There are no proposed utility connections in the right-of-way where the former hospital once extended. There are two street trees and new sidewalk in this area of the former hospital.

There are only three water connections that cross the right-of-way in the area of the former gas station. There are two street trees and sidewalks in this area. Proposed utilities and tree locations are presented on Figure 5. A typical tree/sidewall installation detail is presented on Figure 6.

## **5.2 SOIL EXCAVATION**

As a part of the proposed development plan for this Site, the approximate depth of the excavation is 40 feet below ground surface. Excavated soil will be off-hauled to an appropriate facility for disposal, as discussed in Section 5.3. All appropriate dust control and stormwater best management practices (BMPs) will be implemented during the soil mitigation activities (Appendix B).

Import soil, if required, will be placed in accordance with the project Geotechnical Engineer's recommendations.

## **5.3 TRANSPORTATION/DISPOSAL**

A Transportation Plan will be submitted to the City prior to any off-haul activities. Truck routes will be approved by the City prior to truck activities.

The Site will be accessed through a gate along 27<sup>th</sup> Street. Trucks will exit the Site through the same access gate. A flag person will be onsite to assist the truck drivers to safely drive on and off the Site. Transportation will be coordinated in such a manner that at any given time, onsite trucks will be in communication with the Site trucking coordinator. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to exiting the Site, the vehicle will be swept to remove any extra soil from areas not covered or protected. This cleanup/decontamination area will be set up as close to the loading area as possible so as to minimize spreading the impacted soil. Prior to the offsite transport, the Site manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest or bill-of-lading has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic.

Soil will be transported to appropriate receiving facilities for disposal.

## **5.4 CONTINGENCY ACTIVITIES**

This section describes the protocols to be followed in the event that underground structures or other features of potential environmental concern are identified during Site development activities. This includes any USTs, sumps, or pipes from historic activities at the Site.

If any of the above is encountered during subsurface disturbance work, the emergency contacts listed in Section 7.3 will be contacted, and the following procedures shall be followed:

- All field activities will be immediately stopped and an exclusion zone will be established. The situation will be evaluated by ENGEO's onsite representative, who will determine if the feature presents an environmental concern due to the presence of contaminants, using the procedures described in Sections 5.1 and 5.2.
- If an emergency situation arises such that emergency services are needed, the emergency procedures established in the health and safety plan (HASP) will be followed. The HASP will be prepared under separate cover.
- Any equipment and clothing that comes in contact with the suspected or known impacted soil will be managed/decontaminated as specified in the HASP.

## **5.5 DEBRIS MANAGEMENT**

Any debris (building materials, foundations, asphalt, aggregate base, etc.) encountered during the excavation activities will be separately stockpiled. Loose soil will be removed prior to placement onto stockpiles. Debris will be separately stockpiled, transported, and disposed of at an appropriate facility or reused onsite. All debris reused onsite (including recycled material and base rock) will be handled in accordance with the "CAL-EPA Department of Toxic Substances Control (DTSC) Information Advisory – Clean Imported Fill Material" document (DTSC, 2001).

## **6.0 CONSTRUCTION DEWATERING**

Groundwater has been observed at the Site at depths ranging between 8 to 17 feet below ground surface; therefore, given the proposed maximum depth of excavation (approximately 40 feet) groundwater will be encountered during construction work and construction dewatering will be required.

As presented in Section 3.2, groundwater samples collected from the Property exhibited detectable concentrations of TPH-g and other VOCs. Groundwater encountered during construction activities will be handled and discharged into the local storm drain under the requirements of a National Pollution Discharge Elimination System (NPDES) VOC and Fuel General Permit. It is not feasible to discharge to the sanitary sewer, because the estimated flow rate required to dewater the Site is expected to be in excess of typical sewer discharge limits.

The groundwater will be treated to remove sediments using two overflow weir tanks in parallel to allow sediment to settle, followed by a high pressure sand filtration system. After sand filtration, water will be pumped to an equalization tank to treat VOCs prior to pumping through up to five granular activated carbon (GAC) vessels in parallel, each with a lag GAC vessel connected to it in series. Treated groundwater from the dewatering system will be discharged to an existing curb storm drain located at the northeast corner of the Site on 27<sup>th</sup> Street, connected to the City of Oakland storm drain piping network.

## **7.0 OTHER SITE MANAGEMENT PROCEDURES**

This section addresses the following additional site management topics:

- Control Measures
- Health and Safety Plan
- Emergency Contacts
- Meetings and communication
- Dust control
- Final Report

### **7.1 CONTROL MEASURES**

During redevelopment activities, the Site will be cordoned off to be protective of the general public and access to the Site will be through specific locked entrance(s).

In accordance with City/State requirements, a Construction Stormwater Pollution Prevention Plan, including an Erosion Control Plan, will be prepared prior to work activities.

Noise control measures implemented within the Site will be undertaken in accordance with applicable City requirements. Noise control measures will include but are not limited to the following:

- All equipment driven by internal combustion engines will be equipped with appropriate mufflers in good operating condition.
- When feasible, “quiet” models of stationary equipment such as air compressors, generators and other noise sources.
- Stationary noise-generating equipment will be located as far as possible from sensitive receptors.
- No unnecessary idling of internal combustion engines will occur onsite.

## **7.2 HEALTH AND SAFETY PLAN**

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., Title 8, Section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., Title 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all California OSHA requirements.

In addition, California OSHA's Construction Safety Orders (especially Cal. Code Regs., Title 8, Sections 1539 and 1541) will be followed as appropriate. A Health and Safety Plan (HASP) has been prepared for the Site in accordance with current health and safety standards, as specified by the Federal and California OSHA. The HASP is presented in Appendix C.

## **7.3 EMERGENCY CONTACTS**

In an event that underground structures or other features of potential environmental concern are identified during Site development activities (including any USTs, sumps, or pipes from historic activities), the following will be contacted:

Mr. Mark Detterman  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502  
Direct: 510.567.6876  
Email: [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org)

Mr. Kevin Hom  
Alameda County Department of Environmental Health  
Hazardous Materials/Waste Program (CUPA)  
1131 Harbor Bay Parkway  
Alameda, CA 94502  
Direct: 510.567.6774  
Email: [Kevin.Hom@acgov.org](mailto:Kevin.Hom@acgov.org)

## **7.4 MEETINGS AND COMMUNICATION**

The construction superintendent will facilitate coordination among all necessary parties by pre-construction meetings, daily and/or weekly progress meetings, and special meetings as may be required. In all cases, he or she shall maintain sufficient documentation as to the planned discussion and outcomes of the meetings. As necessary, the appropriate regulatory agencies will be contacted.

## **7.5 DUST CONTROL AND AIR MONITORING**

A dust control plan for the project is presented as Appendix B. Basic construction mitigation measures recommended by the Bay Area Air Quality Management District (BAAQMD) will be implemented to reduce fugitive dust emissions. Air monitoring will be performed during all Site activities in which impacted soils are being handled or disturbed. During earth moving operations dust levels will be monitored at the following locations:

- One upwind location.
- Two downwind (fence line) locations.

Air monitoring samples will be conducted over an 8- to 10-hour period each day that removal action activities are conducted. Air monitoring personnel will record readings at least once per hour during dust-generating operations.

Dust calculations were conducted based on the equation recommended by Cal/EPA to calculate the fence line action level for lead and benzo(a)pyrene equivalent. A benzo(a)pyrene equivalent was calculated, as presented on Table D of Appendix A. The maximum concentration of lead detected at the Site and the maximum benzo(a)pyrene equivalent concentrations were used to calculate the Site fence line action level. The Site Action Level for total dust was calculated to be  $1 \text{ mg/m}^3$  and  $21.6 \text{ mg/m}^3$  based on a maximum lead concentration of 4,600 mg/kg, and a maximum benzo(a)pyrene equivalent concentration of 232 mg/kg (Appendix B). As per typical BAAQMD standards, the action level for the project based on a  $50 \text{ } \mu\text{g/m}^3$  differential; therefore, the methodology is more than protective for offsite receptor exposure.

## **7.6 FINAL REPORT**

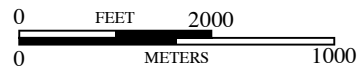
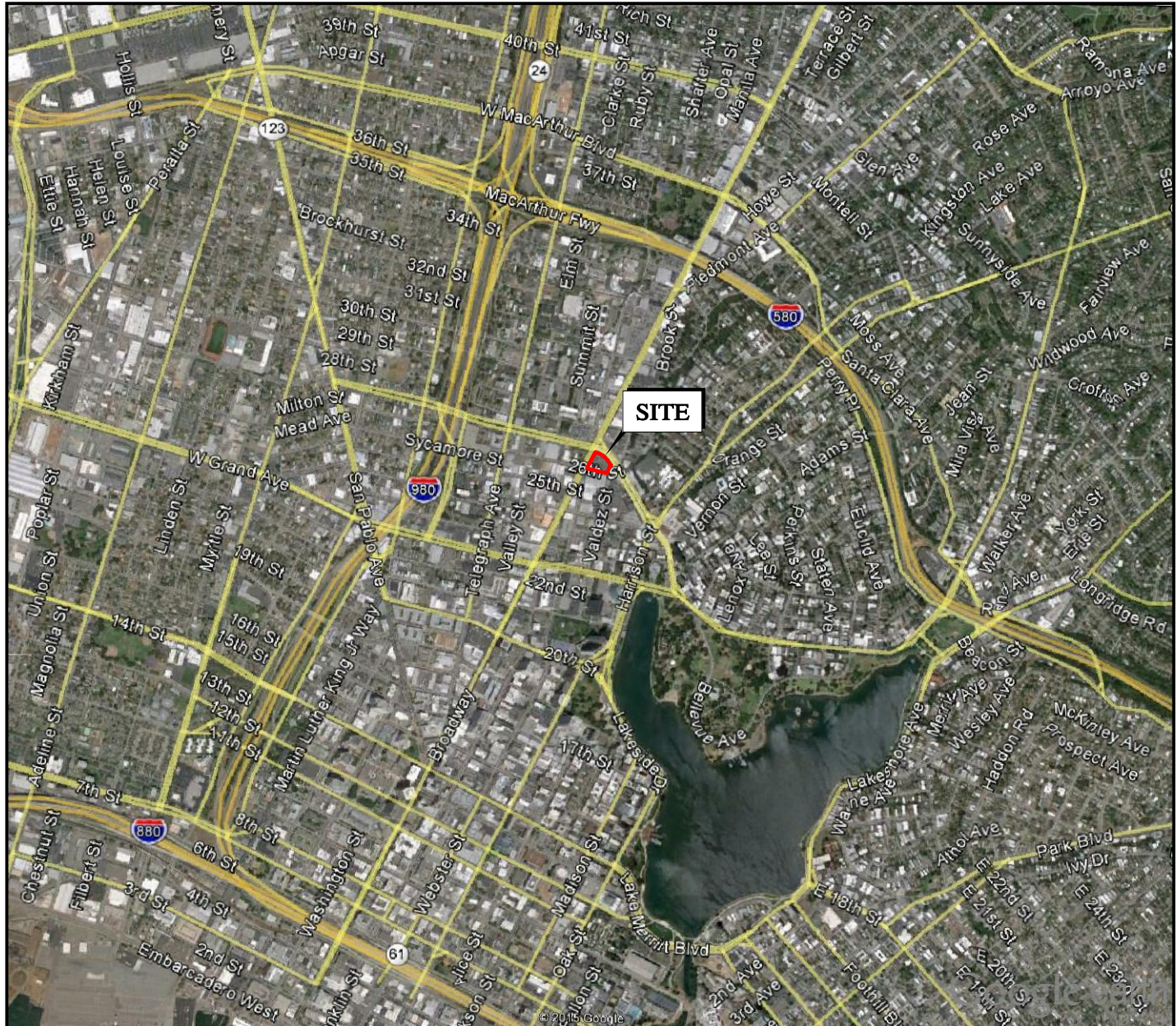
Upon completion of the soil excavation activities, we will prepare a final report documenting work for submittal to the ACDEH. The report will include details regarding soil excavation, sampling, and landfill disposal documentation.

## **FIGURES**

- Figure 1 – Vicinity Map**
- Figure 2 – Proposed Development Plan**
- Figure 3 – Site Plan**
- Figure 4 – Cross-sections**
- Figure 5 – Proposed Utilities Connections**
- Figure 6 – Typical Tree Well and Sidewalk Detail**



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BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE



VICINITY MAP  
2630 BROADWAY  
OAKLAND, CALIFORNIA

PROJECT NO.: 11982.000.000

SCALE: AS SHOWN

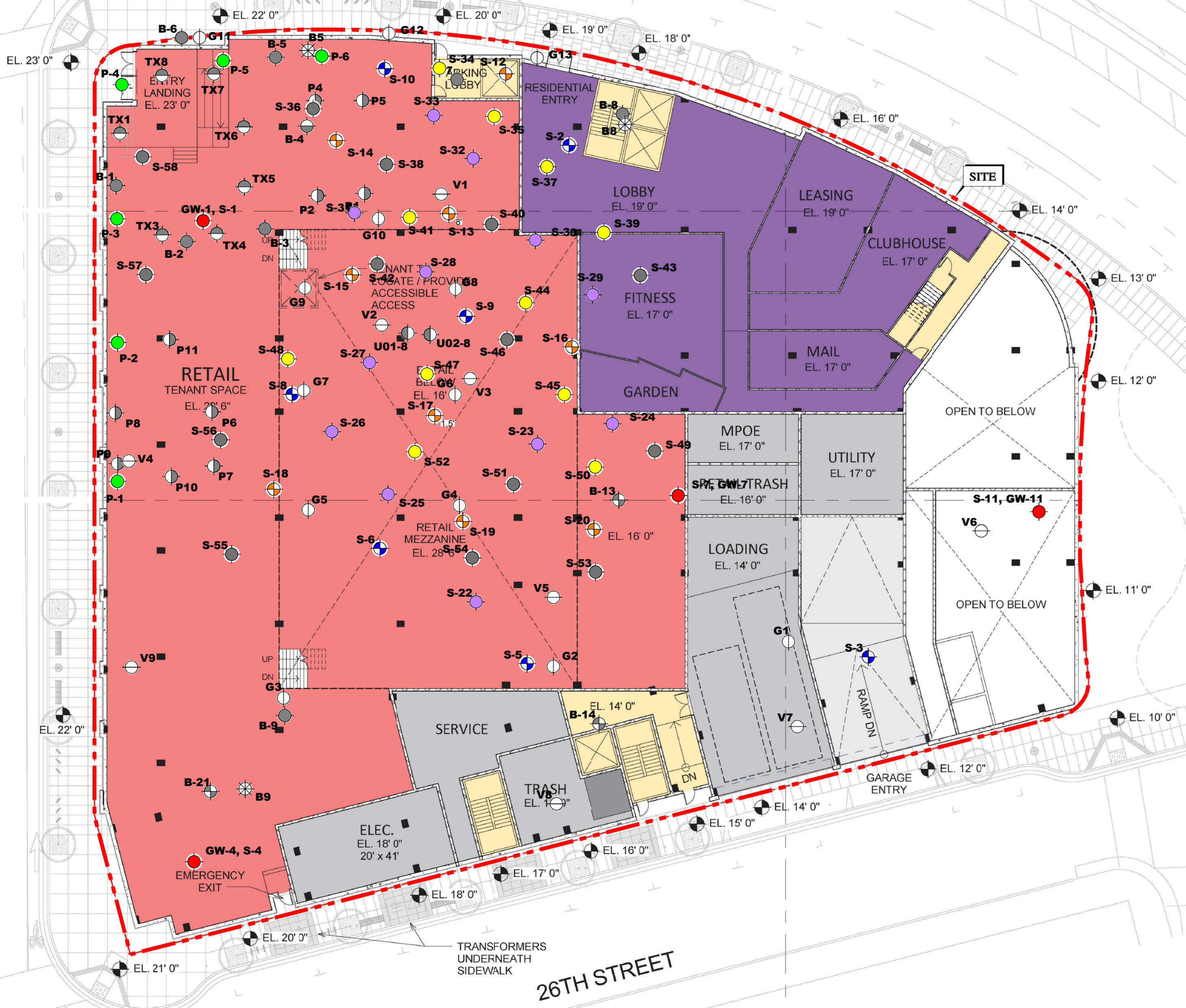
DRAWN BY: DLB

CHECKED BY: SPM

FIGURE NO.

1

27TH STREET



PLAZA

**EXPLANATION**

ALL LOCATIONS ARE APPROXIMATE

- S-33** PREVIOUS SOIL SAMPLE (ENGE, 2016)
- S-58** ADDITIONAL SAMPLE (ENGE, 2016)  
(SAMPLE ANALYZED FOR LEAD ONLY)
- S-52** SAMPLE (ENGE, 2016)  
(SAMPLE ANALYZED FOR LEAD, SVOCs, AND  
CAM-17 METALS)
- P-6** PERIMETER BORING (ENGE, 2015)
- S-20** BORING WITHIN FILL AREA  
SHOWING APPROXIMATE REFUSAL DEPTH BGS  
(ENGE, 2015)
- S-11, GW-11** SOIL AND GROUNDWATER SAMPLE  
(ENGE, 2015)
- S-10** SOIL SAMPLE (ENGE, 2015)
- G-11** SOIL VAPOR SAMPLE LOCATION (VERSAR, 2008)
- V-1** MONITORING WELL (VERSAR, 2008)
- B-4** ABANDONED WELL (CRA, 2007)
- B-9** MONITORING WELL (CRA, 2007)
- B-5** SOIL BORING (VERSAR, 2008)
- B-21** SOIL BORING (CRA, 2007)
- TX** UST EXCAVATION SAMPLE (SHAW, 2007)
- P** PRODUCT PIPING TRENCH SAMPLE (SHAW, 2007)
- U02-8** USED OIL TANK EXCAVATION SAMPLE (SHAW, 2007)

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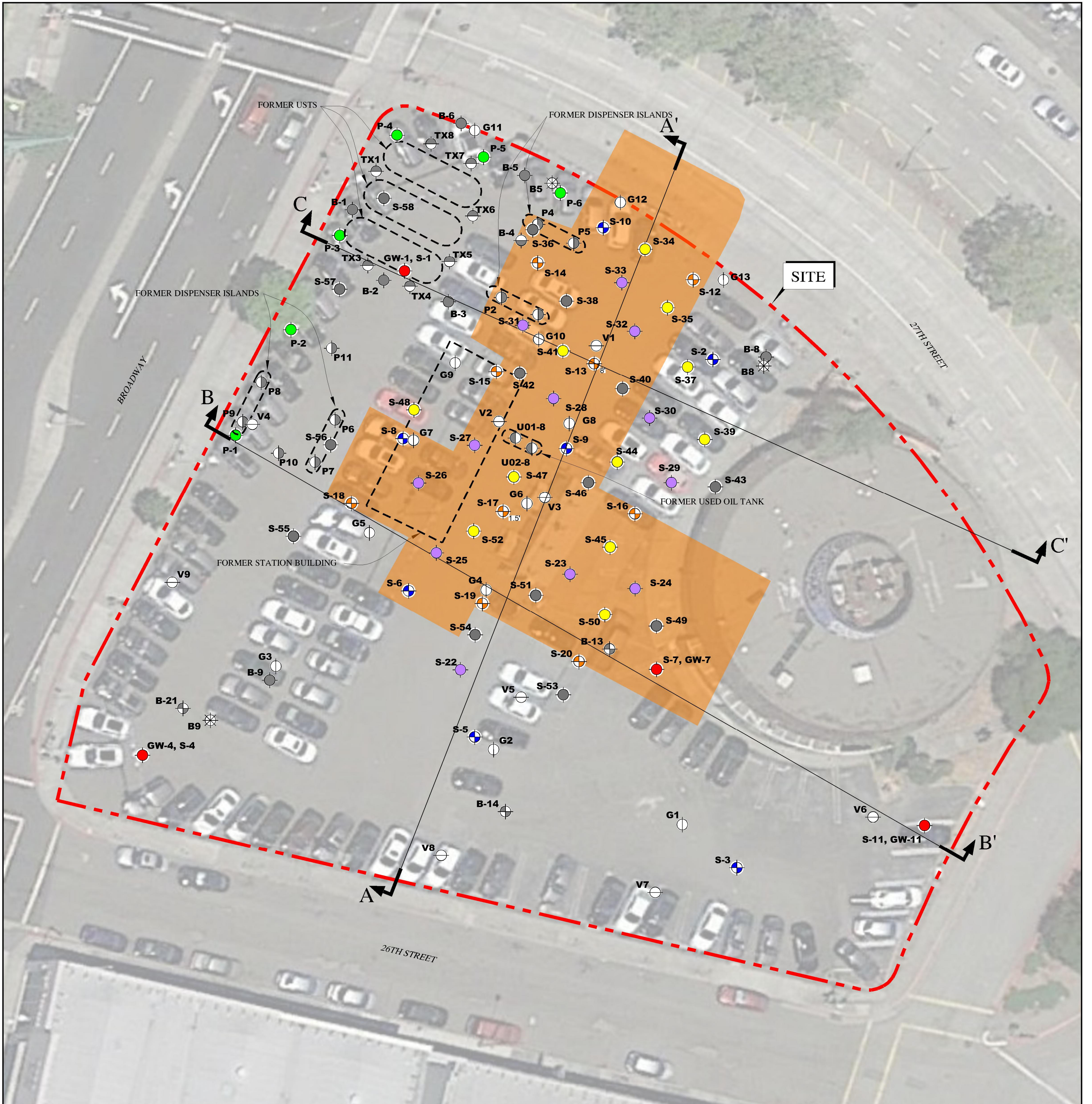
BASE MAP SOURCE: TCA, 2015



PROPOSED DEVELOPMENT PLAN  
2630 BROADWAY  
OAKLAND, CALIFORNIA

PROJECT NO: 11982.000.000	FIGURE NO.
SCALE: NO SCALE	2
DRAWN BY: LL	CHECKED BY: SPM

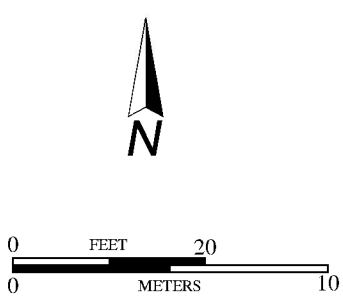
ORIGINAL FIGURE PRINTED IN COLOR



**EXPLANATION**

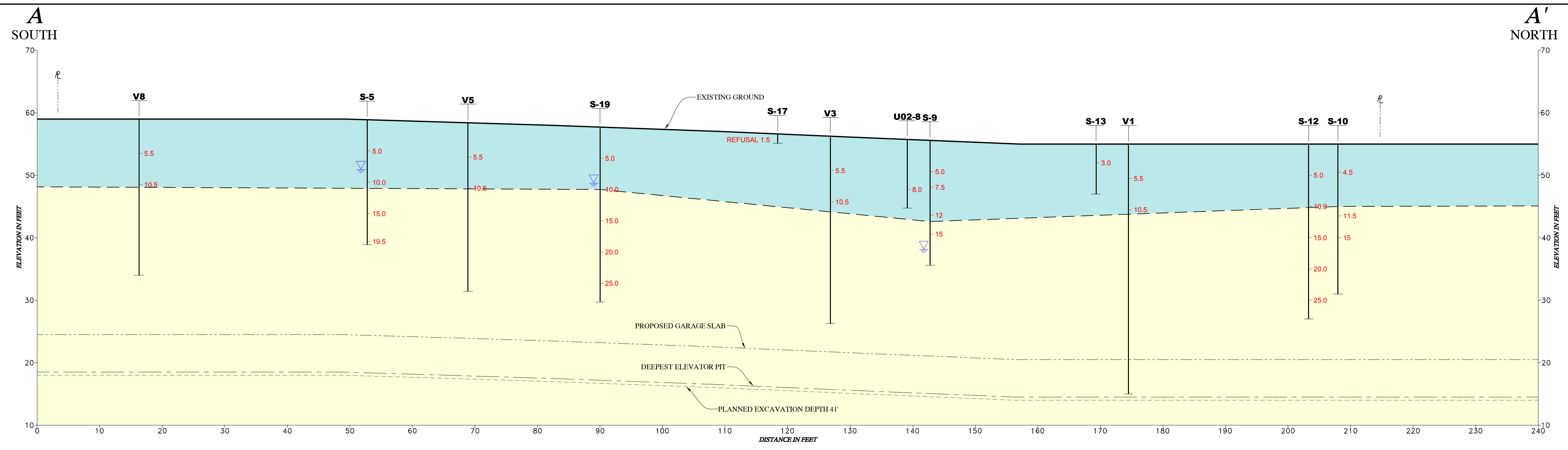
ALL LOCATIONS ARE APPROXIMATE

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li><b>S-33</b>  PREVIOUS SOIL SAMPLE (ENGEO, 2016)</li> <li><b>S-58</b>  ADDITIONAL SAMPLE (ENGEO, 2016)<br/>(SAMPLE ANALYZED FOR LEAD ONLY)</li> <li><b>S-52</b>  SAMPLE (ENGEO, 2016)<br/>(SAMPLE ANALYZED FOR LEAD, SVOCs, AND<br/>CAM-17 METALS)</li> <li><b>P-6</b>  PERIMETER BORING (ENGEO, 2015)</li> <li><b>S-20</b>  BORING WITHIN FILL AREA SHOWING<br/>APPROXIMATE REFUSAL DEPTH BGS<br/>(ENGEO, 2015)</li> <li><b>S-11, GW-11</b>  SOIL AND GROUNDWATER SAMPLE<br/>(ENGEO, 2015)</li> </ul> | <ul style="list-style-type: none"> <li><b>S-10</b>  SOIL SAMPLE (ENGEO, 2015)</li> <li><b>G-11</b>  SOIL VAPOR SAMPLE LOCATION (VERSAR, 2008)</li> <li><b>V-1</b>  MONITORING WELL (VERSAR, 2008)</li> <li><b>B-4</b>  ABANDONED WELL (CRA, 2007)</li> <li><b>B-9</b>  MONITORING WELL (CRA, 2007)</li> <li><b>B-5</b>  SOIL BORING (VERSAR, 2008)</li> <li><b>B-21</b>  SOIL BORING (CRA, 2007)</li> <li><b>TX</b>  UST EXCAVATION SAMPLE (SHAW, 2007)</li> </ul> | <ul style="list-style-type: none"> <li><b>P</b>  PRODUCT PIPING TRENCH SAMPLE (SHAW, 2007)</li> <li><b>U02-8</b>  USED OIL TANK EXCAVATION SAMPLE (SHAW, 2007)</li> <li> FORMER HOSPITAL BUILDING FOOTPRINT</li> <li><b>C</b> <b>C'</b>  CROSS SECTION LOCATION</li> </ul> |
|--|--|--|

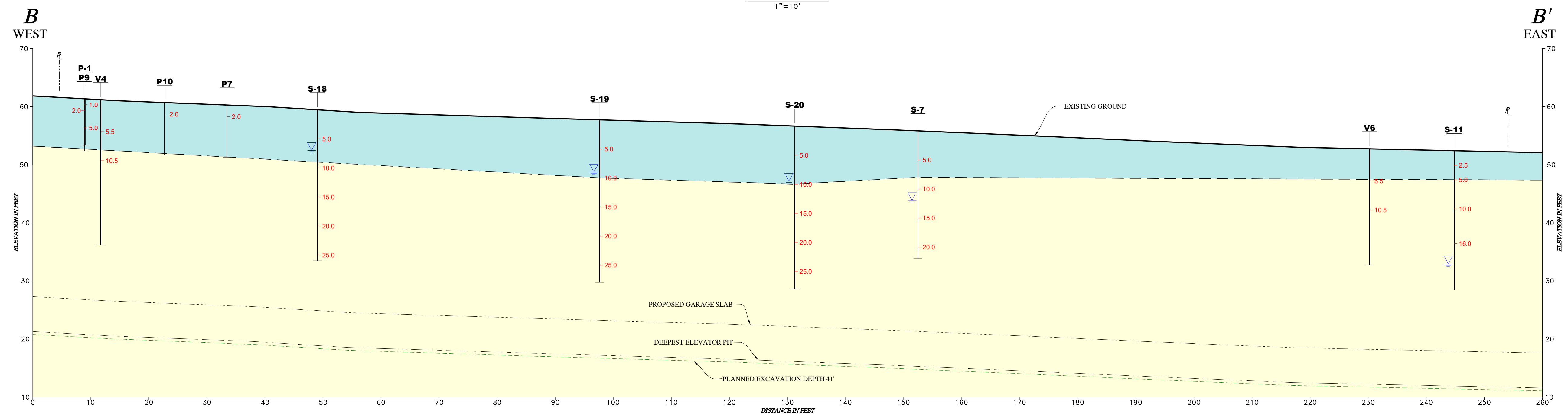


BASE MAP SOURCE: GOOGLE EARTH PRO MAPPING SERVICE

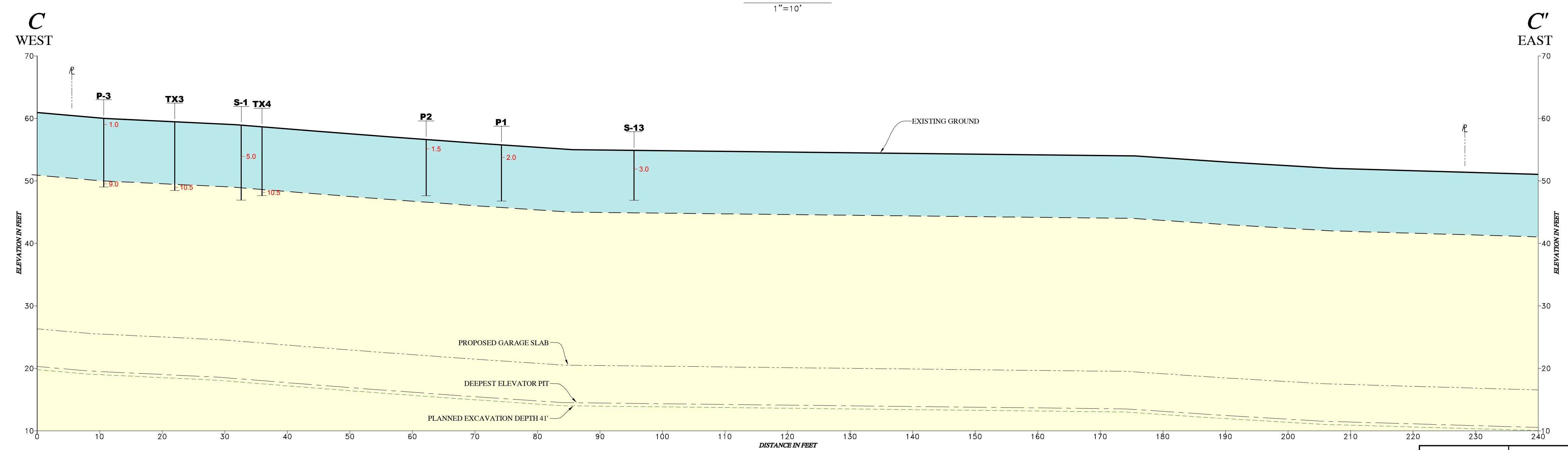
	<b>SITE PLAN</b> 2630 BROADWAY OAKLAND, CALIFORNIA	PROJECT NO: 11982.000.000 SCALE: AS SHOWN DRAWN BY: DLB    CHECKED BY: SM	FIGURE NO. <span style="font-size: 2em; font-weight: bold;">3</span>
	ORIGINAL FIGURE PRINTED IN COLOR		



SECTION A-A'  
1"=10'

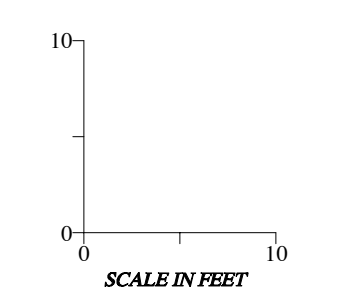


SECTION B-B'  
1"=10'



SECTION C-C'  
1"=10'

- EXPLANATION**  
ALL LOCATIONS ARE APPROXIMATE
- BORING LOCATION
  - DEPTH OF SAMPLE IN FEET
  - WATER LEVEL
  - FILL MATERIAL
  - NATIVE MATERIAL

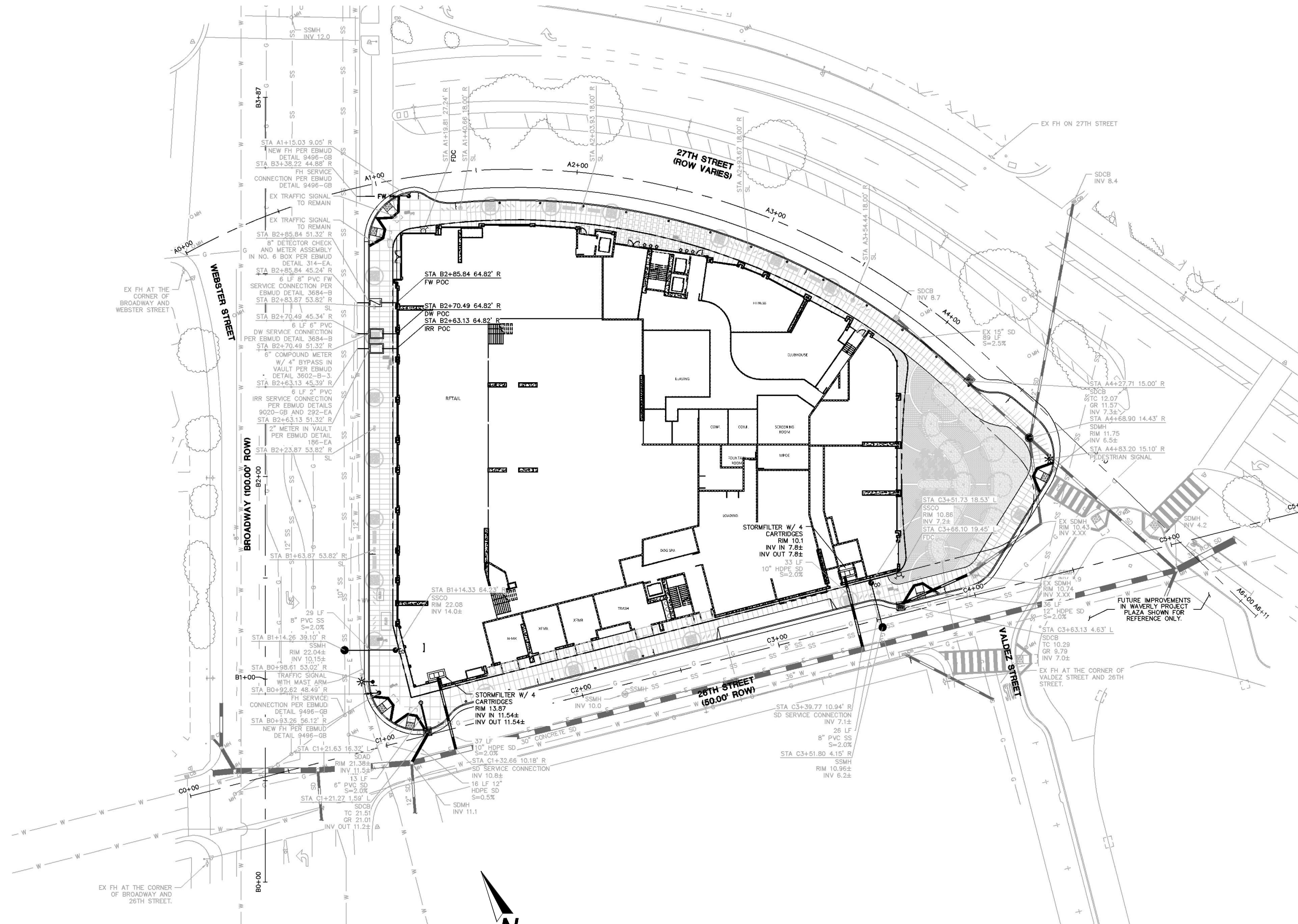


CROSS SECTIONS  
2630 BROADWAY  
OAKLAND, CALIFORNIA

PROJECT NO.: 11982.000.000  
SCALE: AS SHOWN  
DRAWN BY: DLB  
CHECKED BY: SPM

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BASE MAP SOURCE: BFK, 2016



PROPOSED UTILITY CONNECTIONS  
2630 BROADWAY  
OAKLAND, CALIFORNIA

PROJECT NO.: 11982.000.000

SCALE: AS SHOWN

DRAWN BY: LL

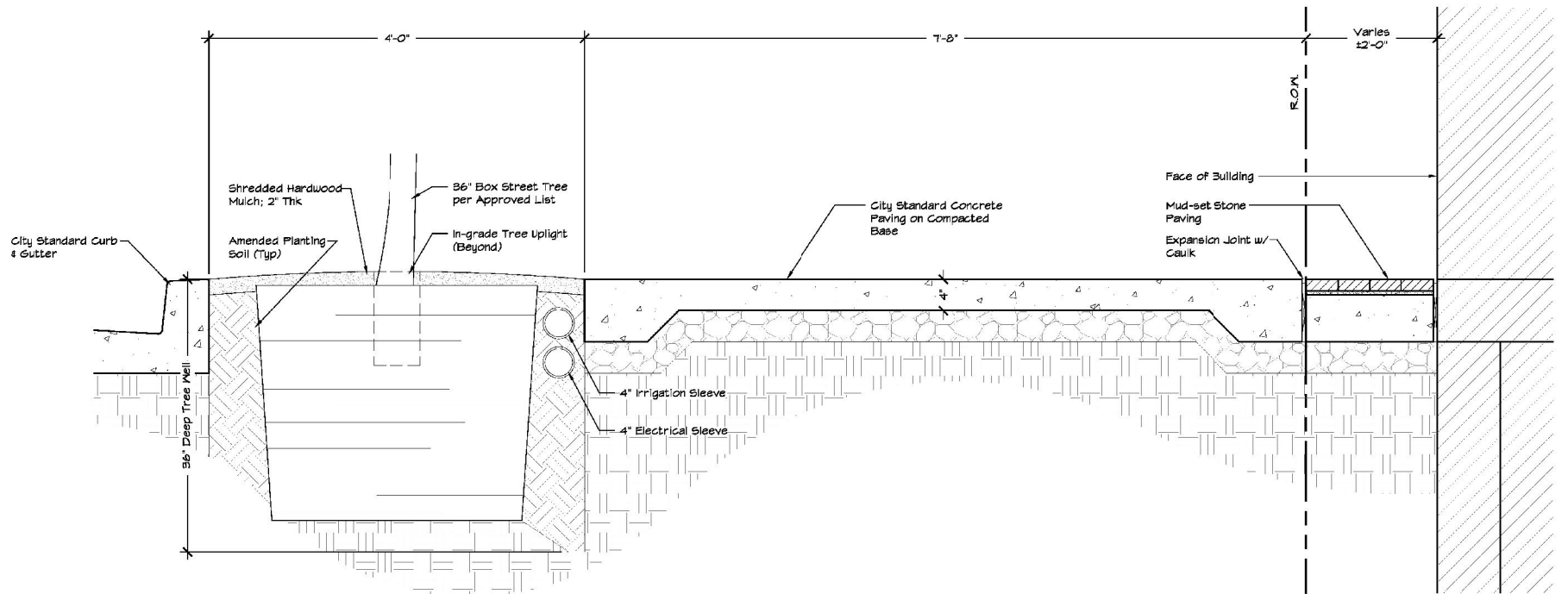
CHECKED BY: SM


FIGURE NO.

5

ORIGINAL FIGURE PRINTED IN COLOR

C:\Drafting\DRAWINGS2\Draw\10000 to 12999\11982\000\SMF\11982000000-SMF-6-TreewellTL-0316.dwg Plot Date: 3-30-16 ilce



	<b>TYPICAL TREE WELL AND SIDEWALK</b> 2630 BROADWAY OAKLAND, CALIFORNIA		PROJECT NO.: 11982.000.000 SCALE: NO SCALE DRAWN BY: LL    CHECKED BY: SPM	FIGURE NO. <span style="font-size: 2em; font-weight: bold;">6</span>
				ORIGINAL FIGURE PRINTED IN COLOR

## **APPENDIX A**

### **Summary of Analytical Data Tables**

**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>20</b>	<b>0.39<sup>2</sup></b>	<b>15,000</b>	<b>12</b>	<b>120,000</b>	<b>23</b>	<b>3,100</b>	<b>--</b>	<b>N/A</b>	<b>N/A</b>	<b>9.4</b>	<b>840</b>	<b>390</b>	<b>23,000</b>	<b>N/A</b>
<b>DTSC SL <sup>2</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>0.11<sup>3</sup></b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>80<sup>4</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>N/A</b>
<b>Regulatory Limit</b>		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5<sup>5</sup></b>	<b>5<sup>6</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>INITIAL CHARACTERIZATION</b>																		
S1@5'	4/30/2015	ND	ND	<5.0	<1.7	53	<1	16	14	35	3.2	NA	NA	<0.5	13	92	39	ND
S2@6'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S2@9'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S2@11'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S2@16'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S2 Composite (6, 9, 11, 16)	5/1/2015	ND	ND	<5.0	4.4	110	<1	21	8.8	13	15	NA	NA	<0.5	24	24	28	ND
S3@5'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S3@10'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.1	NA	NA	NA	NA	NA	NA	NA
S3@15'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.3	NA	NA	NA	NA	NA	NA	NA
S3 Composite (5, 10, 15)	4/30/2015	ND	ND	<5.0	2.7	76	<1	37	8.1	16	6.1	NA	NA	<0.5	46	35	26	ND
S4@5'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA
S4@10'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9	NA	NA	NA	NA	NA	NA	NA
S4@15'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S4 Composite (5, 10, 15)	4/30/2015	ND	ND	<5.0	2.4	120	<1	27	10	13	9.3	NA	NA	<0.5	31	28	27	ND
S5@5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.2	NA	NA	NA	NA	NA	NA	NA
S5@10'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
S5@15'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S5@19.5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.6	NA	NA	NA	NA	NA	NA	NA
S5 Composite (5, 10, 15, 19.5)	5/6/2015	ND	ND	<5.0	2.8	130	<1	29	9.2	12	5.1	NA	NA	<0.5	39	25	20	ND
S6@4'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>160</b>	NA	NA	NA	NA	NA	NA	NA
S6@10'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7	NA	NA	NA	NA	NA	NA	NA
S6@13'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.6	NA	NA	NA	NA	NA	NA	NA
S6@17'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	35	NA	NA	NA	NA	NA	NA	NA
S6 Composite (4, 10, 13, 17)	5/1/2015	ND	ND	<5.0	2.7	140	<1	33	12	14	51	NA	NA	<0.5	30	30	46	NA
S7@5'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>110</b>	NA	NA	NA	NA	NA	NA	NA
S7@10'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	NA	NA	NA	NA	NA	NA	NA
S7@15'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.8	NA	NA	NA	NA	NA	NA	NA
S7@20'	5/1/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.8	NA	NA	NA	NA	NA	NA	NA
S7 Composite (5, 10, 15, 20)	5/1/2015	ND	ND	<5.0	3.2	120	<1	26	12	14	<b>90</b>	NA	NA	0.50	49	33	22	ND
S8@3.5'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	22	NA	NA	NA	NA	NA	NA	NA
S8@7.5'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA
S8@12'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2	NA	NA	NA	NA	NA	NA	NA
S8 Composite (3.5, 7.5, 12)	4/30/2015	ND	ND	<5.0	2.2	130	<1	28	8.3	16	13	NA	NA	<0.5	20	30	24	ND
S8@17.5'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S8@21'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
S8@25'	4/30/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5	NA	NA	NA	NA	NA	NA	NA
S8 Composite (17.5, 21, 25)	4/30/2015	ND	ND	<5.0	2	110	<1	30	14	9.6	5.8	NA	NA	<0.5	40	31	25	ND
S9@5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA	NA
S9@7.5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>3,400</b>	NA	NA	NA	NA	NA	NA	NA
S9@12'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>820</b>	NA	NA	NA	NA	NA	NA	NA
S9@15'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA	NA	NA	NA	NA	NA
S9 Composite (5, 7.5, 12, 15)	5/6/2015	ND	ND	<5.0	6.3	260	<1	25	16	15	<b>460</b>	NA	NA	<0.5	36	29	200	ND
S10@4.5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>1,100</b>	NA	NA	NA	NA	NA	NA	NA
S10@11.5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.9	NA	NA	NA	NA	NA	NA	NA
S10@15'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
S10 Composite (4.5, 11.5, 15)	5/6/2015	ND	ND	<5.0	4.3	120	<1	41	9.9	20	<b>690</b>	NA	NA	<0.5	54	39	39	ND
S11@2.5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	<b>97</b>	NA	NA	NA	NA	NA	NA	NA
S11@5'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	NA	NA
S11@10'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4	NA	NA	NA	NA	NA	NA	NA
S11@16'	5/6/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.3	NA	NA	NA	NA	NA	NA	NA



**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		N/A	N/A	20	0.39 <sup>2</sup>	15,000	12	120,000	23	3,100	--	N/A	N/A	9.4	840	390	23,000	N/A
<b>DTSC SL <sup>2</sup></b>		N/A	N/A	--	0.11 <sup>3</sup>	--	--	--	--	--	80 <sup>4</sup>	N/A	N/A	--	--	--	--	N/A
<b>Regulatory Limit</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 <sup>5</sup>	5 <sup>6</sup>	N/A	N/A	N/A	N/A	N/A
S11 Composite (2.5, 5, 10, 16)	5/6/2015	ND	ND	<5.0	3.4	320	<1	37	19	23	19	NA	NA	<0.5	98	35	35	ND
<b>SUPPLEMENTAL FILL CHARACTERIZATION</b>																		
S12@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA
S12@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA
S12@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.1	NA	NA	NA	NA	NA	NA	NA
S12@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S12@25'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.2	NA	NA	NA	NA	NA	NA	NA
S13@3'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	4.1	NA	NA	NA	NA	NA	NA
S14@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	NA	NA	NA	NA	NA	NA	NA
S14@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.8	NA	NA	NA	NA	NA	NA	NA
S14@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S14@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6	NA	NA	NA	NA	NA	NA	NA
S14@25'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S15@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1	NA	NA	NA	NA	NA	NA	NA
S15@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	NA	NA	NA	NA	NA	NA	NA
S15@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5	NA	NA	NA	NA	NA	NA	NA
S15@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
S16@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,900	63	18	NA	NA	NA	NA	NA
S16@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S16@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9	NA	NA	NA	NA	NA	NA	NA
S16@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	120	2.9	NA	NA	NA	NA	NA	NA
S16@25'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	26	NA	NA	NA	NA	NA	NA	NA
S18@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	760	22	0.59	NA	NA	NA	NA	NA
S18@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.5	NA	NA	NA	NA	NA	NA	NA
S18@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S18@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	NA	NA
S18@25'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.3	NA	NA	NA	NA	NA	NA	NA
S19@5'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	130	5.3	0.5	NA	NA	NA	NA	NA
S19@10'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.8	NA	NA	NA	NA	NA	NA	NA
S19@15'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1	NA	NA	NA	NA	NA	NA	NA
S19@20'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
S19@25'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.3	NA	NA	NA	NA	NA	NA	NA
S20@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	0.13	NA	NA	NA	NA	NA	NA
S20@10'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.6	NA	NA	NA	NA	NA	NA	NA
S20@15'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA
S20@20'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	590	0.13	NA	NA	NA	NA	NA	NA
S20@25'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	NA	NA
<b>2016 CHARACTERIZATION</b>																		
S22@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	170	4.7	NA	NA	NA	NA	NA	NA
S22@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.6	NA	NA	NA	NA	NA	NA	NA
S22@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S22@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.4	NA	NA	NA	NA	NA	NA	NA
S23@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	8.9	0.17	NA	NA	NA	NA	NA
S23@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	3.6	NA	NA	NA	NA	NA	NA
S23@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,200	90	5.5	NA	NA	NA	NA	NA
S24@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,700	3.9	NA	NA	NA	NA	NA	NA
S24@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.2	NA	NA	NA	NA	NA	NA	NA
S24@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	NA	NA	NA	NA	NA	NA	NA
S24@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.4	NA	NA	NA	NA	NA	NA	NA
S25@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	29	NA	NA	NA	NA	NA	NA	NA
S25@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.8	NA	NA	NA	NA	NA	NA	NA

**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>20</b>	<b>0.39<sup>2</sup></b>	<b>15,000</b>	<b>12</b>	<b>120,000</b>	<b>23</b>	<b>3,100</b>	<b>--</b>	<b>N/A</b>	<b>N/A</b>	<b>9.4</b>	<b>840</b>	<b>390</b>	<b>23,000</b>	<b>N/A</b>
<b>DTSC SL <sup>2</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>0.11<sup>3</sup></b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>80<sup>4</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>N/A</b>
<b>Regulatory Limit</b>		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5<sup>5</sup></b>	<b>5<sup>6</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
S25@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA
S25@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.2	NA	NA	NA	NA	NA	NA	NA
S26@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8	NA	NA	NA	NA	NA	NA	NA
S26@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9	NA	NA	NA	NA	NA	NA	NA
S26@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	NA	NA	NA	NA	NA	NA	NA
S26@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	NA	NA	NA	NA
S27@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,200	3	NA	NA	NA	NA	NA	NA
S27@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7	NA	NA	NA	NA	NA	NA	NA
S27@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	210	16	1.5	NA	NA	NA	NA	NA
S27@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
S28@5'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600	110	2.4	NA	NA	NA	NA	NA
S28@10'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S28@15'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA
S28@20'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
S29@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,700	22	1.9	NA	NA	NA	NA	NA
S29@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S30@5'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,500	11	1.7	NA	NA	NA	NA	NA
S30@10'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	NA	NA	NA	NA	NA	NA	NA
S30@15'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	22	NA	NA	NA	NA	NA	NA	NA
S30@20'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA
S30@24'	2/10/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.2	NA	NA	NA	NA	NA	NA	NA
S31@5'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	3.5	NA	NA	NA	NA	NA	NA
S31@10'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA
S31@15'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.9	NA	NA	NA	NA	NA	NA	NA
S31@20'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	NA	NA	NA	NA
S32@5'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,600	14	1.4	NA	NA	NA	NA	NA
S32@10'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	110	15	0.29	NA	NA	NA	NA	NA
S32@12'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	150	2.4	NA	NA	NA	NA	NA	NA
S32@20'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S33@5'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	510	2.7	NA	NA	NA	NA	NA	NA
S33@10'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	9	NA	NA	NA	NA	NA	NA	NA
S33@15'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S33@20'	2/11/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	13	NA	NA	NA	NA	NA	NA	NA
<b>2016 ADDITIONAL DELINEATION</b>																		
S34@4'	5/3/2016	NA	NA	<0.20	2.1	130	<0.0550	25	6.7	15	50	2.7	NA	<0.2	21	28	30	ND
S34@7.5'	5/3/2016	NA	NA	<0.20	2.4	77	<0.0550	31	<0.055	9.7	5.8	NA	NA	<0.2	20	26	14	ND
S34@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2	NA	NA	NA	NA	NA	NA	NA
S34@15'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	110	0.25	NA	NA	NA	NA	NA	NA
S34@18'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	160	0.31	NA	NA	NA	NA	NA	NA
S35@5'	5/3/2016	NA	NA	<0.20	6.6	310	<0.0550	15	5.5	24	590	4.3	NA	0.55	21	23	180	ND
S35@7.5'	5/3/2016	NA	NA	<0.20	6.6	120	<0.0550	21	6.3	15	19	NA	NA	<0.2	19	28	34	ND
S35@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	220	0.2	NA	NA	NA	NA	NA	NA
S35@16'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	<0.13	NA	NA	NA	NA	NA	NA
S35@18'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	90	0.52	NA	NA	NA	NA	NA	NA
S36@5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NA	NA
S36@7.5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.3	NA	NA	NA	NA	NA	NA	NA
S36@15.5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.7	NA	NA	NA	NA	NA	NA	NA
S36@18'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA
S37@3'	5/3/2016	NA	NA	<0.20	3.3	170	<0.0550	37	10	19	36	NA	NA	<0.2	48	34	81	ND
S37@7.5'	5/3/2016	NA	NA	<0.20	5.7	10	<0.0550	54	5.7	<0.650	3.7	NA	NA	<0.2	48	20	16	ND
S37@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA

**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>20</b>	<b>0.39<sup>2</sup></b>	<b>15,000</b>	<b>12</b>	<b>120,000</b>	<b>23</b>	<b>3,100</b>	<b>--</b>	<b>N/A</b>	<b>N/A</b>	<b>9.4</b>	<b>840</b>	<b>390</b>	<b>23,000</b>	<b>N/A</b>
<b>DTSC SL <sup>2</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>0.11<sup>3</sup></b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>80<sup>4</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>N/A</b>
<b>Regulatory Limit</b>		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5<sup>5</sup></b>	<b>5<sup>6</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
S37@15'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2	NA	NA	NA	NA	NA	NA	NA
S38@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	570	26	1.6	NA	NA	NA	NA	NA
S38@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.8	NA	NA	NA	NA	NA	NA	NA
S38@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	NA	NA	NA	NA	NA	NA	NA
S38@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA
S38@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.3	NA	NA	NA	NA	NA	NA	NA
S39@4'	5/3/2016	NA	NA	<0.20	5.4	11	<0.0550	53	5.5	<0.650	4.3	NA	NA	NA	46	20	16	ND
S39@8'	5/3/2016	NA	NA	<0.20	5.4	69	1.3	11	<0.055	6.2	90	0.14	NA	NA	9.8	16	210	ND
S39@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S39@15'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
S40@5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	550	3.4	NA	NA	NA	NA	NA	NA
S40@7.5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.5	NA	NA	NA	NA	NA	NA	NA
S40@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	NA	NA	NA	NA	NA	NA	NA
S40@15'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
S40@18'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	NA	NA	NA	NA	NA	NA	NA
S41@5'	5/2/2016	NA	NA	<0.20	7.4	180	<0.0550	16	<0.055	<0.650	1,200	6.4	1.5	5.6	10	17	210	ND
S41@7.5'	5/2/2016	NA	NA	<0.20	7.5	220	<0.0550	15	<0.055	69	90	0.18	NA	<0.2	29	30	180	ND
S41@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6	NA	NA	NA	NA	NA	NA	NA
S41@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	NA	NA	NA	NA
S41@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	NA	NA	NA	NA
S42@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.2	NA	NA	NA	NA	NA	NA	NA
S42@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
S42@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4	NA	NA	NA	NA	NA	NA	NA
S42@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.1	NA	NA	NA	NA	NA	NA	NA
S42@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
S43@3.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	64	7.8	0.81	NA	NA	NA	NA	NA
S43@6.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S43@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.8	NA	NA	NA	NA	NA	NA	NA
S43@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.1	NA	NA	NA	NA	NA	NA	NA
S43@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA
S44@5'	5/4/2016	NA	NA	<0.20	4.8	150	<0.0550	40	12	23	58	3	NA	<0.2	33	36	97	ND
S44@7.5'	5/4/2016	NA	NA	<0.20	2.3	340	<0.0550	20	<0.055	10	4,600	31	21	<0.2	11	14	580	ND
S44@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
S44@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.9	NA	NA	NA	NA	NA	NA	NA
S44@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	NA	NA	NA	NA	NA	NA	NA
S45@4'	5/4/2016	NA	NA	<0.20	4.5	160	<0.0550	36	15	16	63	4.7	NA	<0.2	33	42	50	ND
S45@7.5'	5/4/2016	NA	NA	<0.20	7.2	620	1.2	21	<0.055	7.9	3,500	26	2	4.7	10	15	1,000	ND
S45@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.1	NA	NA	NA	NA	NA	NA	NA
S45@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.9	NA	NA	NA	NA	NA	NA	NA
S45@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	22	1.5	NA	NA	NA	NA	NA
S46@5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	130	7.4	0.22	NA	NA	NA	NA	NA
S46@7.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,800	31	17	NA	NA	NA	NA	NA
S46@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	NA	NA	NA	NA	NA	NA	NA
S46@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S46@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	NA	NA	NA	NA	NA	NA	NA
S47@5'	5/2/2016	NA	NA	<0.2	4	280	<0.0550	13	<0.055	6	700	3.7	NA	0.2	15	13	260	ND
S47@7.5'	5/2/2016	NA	NA	<0.20	4.1	140	2.1	16	<0.055	7.1	460	2.9	NA	0.2	12	13	600	ND
S47@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	790	12	<0.1	NA	NA	NA	NA	NA
S47@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.9	NA	NA	NA	NA	NA	NA	NA
S47@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	180	22	0.53	NA	NA	NA	NA	NA
S48@5'	5/2/2016	NA	NA	<0.20	4.8	130	<0.0550	39	10	19	11	NA	NA	<0.2	57	33	41	ND

**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>20</b>	<b>0.39<sup>2</sup></b>	<b>15,000</b>	<b>12</b>	<b>120,000</b>	<b>23</b>	<b>3,100</b>	<b>--</b>	<b>N/A</b>	<b>N/A</b>	<b>9.4</b>	<b>840</b>	<b>390</b>	<b>23,000</b>	<b>N/A</b>
<b>DTSC SL <sup>2</sup></b>		<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>0.11<sup>3</sup></b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>80<sup>4</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>N/A</b>
<b>Regulatory Limit</b>		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5<sup>5</sup></b>	<b>5<sup>6</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
S48@7'	5/2/2016	NA	NA	<0.20	2.7	190	<0.0550	33	10	14	9.5	NA	NA	<0.2	29	37	23	ND
S48@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S48@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	NA	NA	NA	NA	NA	NA	NA
S48@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
S49@4'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,100	12	5.5	NA	NA	NA	NA	NA
S49@7.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	0.47	NA	NA	NA	NA	NA	NA
S49@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	63	0.54	NA	NA	NA	NA	NA	NA
S49@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.3	NA	NA	NA	NA	NA	NA	NA
S49@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S50@5'	5/4/2016	NA	NA	<0.20	3.4	270	<0.0550	22	6.6	42	870	75	2.9	<0.2	17	33	220	ND
S50@7.5'	5/4/2016	NA	NA	<0.20	4.1	110	<0.0550	18	<0.055	<0.650	520	4.2	NA	<0.2	14	20	130	ND
S50@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA
S50@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.5	NA	NA	NA	NA	NA	NA	NA
S50@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA
S51@5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	4.5	NA	NA	NA	NA	NA	NA
S51@7.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.3	NA	NA	NA	NA	NA	NA	NA
S51@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
S51@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.5	NA	NA	NA	NA	NA	NA	NA
S51@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S52@4'	5/2/2016	NA	NA	<0.20	3.9	280	<0.0550	20	<0.055	8.3	1,100	9.7	14	<0.2	21	18	330	ND
S52@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	NA	NA	NA	NA	NA	NA	NA
S52@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	110	0.81	NA	NA	NA	NA	NA	NA
S52@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.9	NA	NA	NA	NA	NA	NA	NA
S52@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	240	18	0.44	NA	NA	NA	NA	NA
S53@5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	NA	NA	NA	NA	NA	NA	NA
S53@7.5'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.8	NA	NA	NA	NA	NA	NA	NA
S53@10'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.4	NA	NA	NA	NA	NA	NA	NA
S53@15'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.2	NA	NA	NA	NA	NA	NA	NA
S53@18'	5/4/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	NA	NA	NA	NA	NA	NA	NA
S54@5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	41	NA	NA	NA	NA	NA	NA	NA
S54@7.5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA
S54@10'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
S54@15.5'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.6	NA	NA	NA	NA	NA	NA	NA
S54@18'	5/3/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.6	NA	NA	NA	NA	NA	NA	NA
S55@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
S55@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.5	NA	NA	NA	NA	NA	NA	NA
S55@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
S55@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.9	NA	NA	NA	NA	NA	NA	NA
S56@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	29	NA	NA	NA	NA	NA	NA	NA
S56@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.6	NA	NA	NA	NA	NA	NA	NA
S56@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.1	NA	NA	NA	NA	NA	NA	NA
S56@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA
S56@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
S57@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
S57@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
S57@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.9	NA	NA	NA	NA	NA	NA	NA
S57@15'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA	NA	NA	NA	NA	NA
S57@18'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1	NA	NA	NA	NA	NA	NA	NA
S58@5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NA	NA
S58@7.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
S58@10'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA

**TABLE A**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs mg/kg	Asbestos mg/kg	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		N/A	N/A	20	0.39 <sup>2</sup>	15,000	12	120,000	23	3,100	--	N/A	N/A	9.4	840	390	23,000	N/A
<b>DTSC SL <sup>2</sup></b>		N/A	N/A	--	0.11 <sup>3</sup>	--	--	--	--	--	80 <sup>4</sup>	N/A	N/A	--	--	--	--	N/A
<b>Regulatory Limit</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 <sup>5</sup>	5 <sup>6</sup>	N/A	N/A	N/A	N/A	N/A
S58@19.5'	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.8	NA	NA	NA	NA	NA	NA	NA
<b>PERIMETER SAMPLING</b>																		
P1@1'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	37	NA	NA	NA	NA	NA	NA	NA
P1@5'	9/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.4	NA	NA	NA	NA	NA	NA	NA
P2@1'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.2	NA	NA	NA	NA	NA	NA	NA
P2@4'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.5	NA	NA	NA	NA	NA	NA	NA
P3@1'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	73	7.2	<0.1	NA	NA	NA	NA	NA
P3@9'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.1	NA	NA	NA	NA	NA	NA	NA
P4@1'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	NA	NA	NA	NA	NA	NA	NA
P4@3.5'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	NA	NA	NA	NA	NA	NA	NA
P5@1'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	1.9	NA	NA	NA	NA	NA	NA
P5@4'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	NA	NA	NA	NA	NA	NA	NA
P6@1'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	NA	NA	NA	NA	NA	NA	NA
P6@5'	9/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	NA	NA	NA	NA	NA	NA	NA
<b>HISTORIC DATA</b>																		
TX1	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	NA	NA
TX2	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA
TX3	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	NA	NA	NA	NA	NA	NA	NA
TX4	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.5	NA	NA	NA	NA	NA	NA	NA
TX5	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.9	NA	NA	NA	NA	NA	NA	NA
TX6	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA
TX7	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.2	NA	NA	NA	NA	NA	NA	NA
TX8	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA	NA	NA
SP1	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.4	NA	NA	NA	NA	NA	NA	NA
SP2	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.8	NA	NA	NA	NA	NA	NA	NA
P1	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.7	NA	NA	NA	NA	NA	NA	NA
P2	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	30	NA	NA	NA	NA	NA	NA	NA
P3	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	130	NA	NA	NA	NA	NA	NA	NA
P4	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	NA	NA	NA	NA	NA	NA	NA
P5	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,000	NA	NA	NA	NA	NA	NA	NA
P6	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA
P7	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	NA	NA	NA	NA	NA	NA	NA
P8	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	NA	NA	NA	NA	NA	NA	NA
P9	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.5	NA	NA	NA	NA	NA	NA	NA
P10	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	NA	NA	NA	NA	NA	NA	NA
P11	3/10/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	130	NA	NA	NA	NA	NA	NA	NA
PX2	11/19/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	<7.5	NA	NA	NA	NA	NA	NA	NA
PX5	11/19/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	<7.5	NA	NA	NA	NA	NA	NA	NA
V1-5.5	10/24/2007	NA	NA	NA	<5	120	NA	57	NA	NA	16	NA	NA	<0.10	NA	NA	NA	NA
V1-10.5	10/24/2007	NA	NA	NA	<5	130	NA	29	NA	NA	3.2	NA	NA	<0.10	NA	NA	NA	NA
V2-5.5	10/23/2007	NA	NA	NA	<5	130	NA	28	NA	NA	11	NA	NA	<0.10	NA	NA	NA	NA
V2-10.5	10/23/2007	NA	NA	NA	<5	110	NA	36	NA	NA	3.5	NA	NA	<0.10	NA	NA	NA	NA
V3-5.5	10/23/2007	<2.5	NA	NA	<5	100	NA	39	NA	NA	7	NA	NA	<0.10	NA	NA	NA	NA
V3-10.5	10/23/2007	<0.12	NA	NA	<5	190	NA	42	NA	NA	7.5	NA	NA	<0.10	NA	NA	NA	NA
V4-5.5	10/24/2007	NA	NA	NA	<5	91	NA	33	NA	NA	7.7	NA	NA	<0.1	NA	NA	NA	NA
V4-10.5	10/27/2007	NA	NA	NA	<5	140	NA	39	NA	NA	4.7	NA	NA	<0.10	NA	NA	NA	NA
V5-5.5	10/23/2007	NA	NA	NA	<5	230	NA	53	NA	NA	200	NA	NA	0.76	NA	NA	NA	NA
V5-10.5	10/24/2007	NA	NA	NA	<5	160	NA	42	NA	NA	6.2	NA	NA	<0.10	NA	NA	NA	NA
V6-5.5	10/23/2007	NA	NA	NA	<5	200	NA	56	NA	NA	12	NA	NA	0.1	NA	NA	NA	NA
V6-10.5	10/23/2007	NA	NA	NA	<5	64	NA	63	NA	NA	5.9	NA	NA	<0.10	NA	NA	NA	NA

**TABLE A  
SUMMARY OF SOIL ANALYTICAL RESULTS: METALS, PCBs, and ASBESTOS**

Sample	Date	PCBs	Asbestos	Metals														
				Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Soluble Lead (STLC)	Soluble Lead (TCLP)	Mercury	Nickel	Vanadium	Zinc	Other Metals
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg	mg/kg	mg/kg
<b>RWQCB's Environmental Screening Levels<sup>1</sup></b>		N/A	N/A	20	0.39 <sup>3</sup>	15,000	12	120,000	23	3,100	--	N/A	N/A	9.4	840	390	23,000	N/A
<b>DTSC SL<sup>2</sup></b>		N/A	N/A	--	0.11 <sup>4</sup>	--	--	--	--	--	80 <sup>4</sup>	N/A	N/A	--	--	--	--	N/A
<b>Regulatory Limit</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 <sup>5</sup>	5 <sup>6</sup>	N/A	N/A	N/A	N/A	N/A
V7-5.5	10/23/2007	NA	NA	NA	<5	78	NA	38	NA	NA	4.6	NA	NA	<0.10	NA	NA	NA	NA
V8-10.5	10/23/2007	NA	NA	NA	<5	490	NA	41	NA	NA	5.2	NA	NA	<0.10	NA	NA	NA	NA
V8-5.5	10/23/2007	NA	NA	NA	<5	68	NA	53	NA	NA	5.8	NA	NA	<0.10	NA	NA	NA	NA
V9-5.5	10/24/2007	NA	NA	NA	<5	180	NA	29	NA	NA	4.2	NA	NA	<0.10	NA	NA	NA	NA
V9-10.5	10/24/2007	NA	NA	NA	<5	190	NA	41	NA	NA	4	NA	NA	<0.10	NA	NA	NA	NA

Notes:

NA = not analyzed

N/A =NOT APPLICABLE

ND = not detected above laboratory reporting limit

STLC = soluble threshold limit concent

TCLP = toxicity characteristic leaching procedure

<5.0 indicates result is less than the laboratory reporting limit of 5 mg/kg.

<sup>1</sup> Regional Water Quality Control Board (RWQCB)Environmental Screening Level for Shallow Soil for Residential Land Use where Groundwater is a current or potential drinking water resource (Table A-1), December 2013

<sup>2</sup> Department of Toxic Substances Control Modified Screening Levels for residential soil May 2015.

<sup>3</sup> Used for California regulated hazardous waste. Source is California Code of Regulations, Title 22, Chapter 11, Article 3. If a substance is ten times the STLC value found in the TTLC, the Waste Extraction Test (WET) is indicated. If any substance in the waste extract is equal to or greater than the STLC value, it is

<sup>4</sup> DTSC HERO HHRA Note 3 Modified Screening Levels for Soil for Residential land use, May 2015.

<sup>5</sup> Although arsenic concentrations exceed the residential screening levels, concentrations are within background concentraions observed in the San Francisco Bay Area.

<sup>6</sup> Used for Federally-regulated hazardous waste; f any substance in the waste extract is equal to or greater than the TCLP value, it is considered a RCRA hazardous waste.

All the soil samples presented in the table will be removed as a part of the planned excavation. █

**TABLE B**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: TPHs and VOCs**

Sample	Date	Oil & Grease	TPHs					VOCs																
			TPH-diesel	TPH-motor oil	TPH-gasoline	p-Isopropyltoluene	Isopropyl Benzene	n-propyl benzene	Benzene	Ethylbenzene	Toluene	Total xylenes	m,p-xylene	o-xylene	tert-butanol	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	MTBE	Napthalene	tert-Butylbenzene	sec-Butylbenzene	n-Butylbenzene	Other VOCs	
			mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>			N/A	100	100	100,000	--	--	--	44	3,300	2,900	2,300	2,300*	2,300*	--	--	--	23	1200	--	--	--	N/A
<b>DTSC SL <sup>2</sup></b>			N/A	100	100	--	--	--	--	330	--	1,100	--	--	--	--	210,000	--	--	--	2,200,000	2,200,000	1,200,000	N/A
<b>INITIAL CHARACTERIZATION</b>																								
S1@5'	4/30/2015	NA	2.2	23	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S2@6'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S2@9'	5/1/2015	NA	NA	NA	140	<10	<6.2	<7.1	<50	<4.3	<10	NA	<9.3	<3.3	<100	<5.6	<5.4	<10	<10	<10	<10	<10	<10	ND
S2@11'	5/1/2015	NA	NA	NA	47,000	<10	<310	<360	<50	<220	<10	NA	<460	190	<5200	<280	<270	<650	770	<10	<10	<10	<10	ND
S2@16'	5/1/2015	NA	NA	NA	140	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	ND	<10	<10	<10	<10	<10	ND
S2 Composite (6, 9, 11, 16)	5/1/2015	NA	1,100	2,000	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S3@5'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S3@10'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	18	<10	<10	<10	<10	<10	ND
S3@15'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S3 Composite (5, 10, 15)	4/30/2015	NA	<2.0	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S4@5'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S4@10'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S4@15'	4/30/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S4 Composite (5, 10, 15)	4/30/2015	NA	<2.0	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S5@5'	5/6/2015	NA	NA	NA	670	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S5@10'	5/6/2015	NA	NA	NA	100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S5@15'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S5@19.5'	5/6/2015	NA	<2	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S5 Composite (5, 10, 15, 19.5)	5/6/2015	NA	ND	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S6@4'	5/1/2015	NA	NA	NA	110	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S6@10'	5/1/2015	NA	NA	NA	930	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S6@13'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S6@17'	5/1/2015	NA	NA	NA	1,100	<10	<6.2	<7.1	<50	<4.3	<10	NA	<9.3	<5.0	<100	<5.6	<5.4	<10	<10	<10	<10	<10	<10	ND
S6 Composite (4, 10, 13, 17)	5/1/2015	NA	4.5	52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S7@5'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S7@10'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S7@15'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	160	<10	<10	<10	<10	<10	ND
S7@20'	5/1/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	40	<10	<10	<10	<10	<10	ND
S7 Composite (5, 10, 15, 20)	5/1/2015	NA	2.8	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8@3.5'	4/30/2015	NA	NA	NA	2,000	<10	<50	57	<50	<50	<10	NA	<50	<25	<250	<50	<50	<50	<50	<50	<50	<50	<50	ND
S8@7.5'	4/30/2015	NA	NA	NA	420,000	<10	<50	5,900	<50	1,200	<10	NA	<1000	<500	<5000	<1000	<1000	2,200	<1000	<1000	<1000	<1000	<1000	ND
S8@12'	4/30/2015	NA	NA	NA	220,000	<10	<1000	1,800	<50	4,000	<10	NA	13,000	1,500	<5000	2,400	8,800	<1000	<1000	<1000	<1000	<1000	<1000	ND
S8 Composite (3.5, 7.5, 12)	4/30/2015	NA	6.1	94	NA	<10	NA	NA	<50	NA	<10	NA	NA	<5000	NA	NA	NA	NA	NA	<10	<10	<10	<10	NA
S8@17.5'	4/30/2015	NA	NA	NA	500	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S8@21'	4/30/2015	NA	NA	NA	9,100	<10	<50	120	<50	<50	<10	NA	67	<25	<250	<50	80	<50	<50	<50	<50	<50	<50	ND
S8@25'	4/30/2015	NA	NA	NA	670,000	<10	<1000	2,900	<50	4,100	<10	NA	9,500	1,800	<5000	1,100	3,700	<1000	<1000	<1000	<1000	<1000	<1000	ND
S8 Composite (17.5, 21, 25)	4/30/2015	NA	<2.0	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S9@5'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S9@7.5'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S9@12'	5/6/2015	NA	NA	NA	110	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	120	<10	<10	<10	<10	<10	<10	<10	<10	ND
S9@15'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S9 Composite (5, 7.5, 12, 15)	5/6/2015	NA	2.3	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10@4.5'	5/6/2015	NA	NA	NA	140	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S10@11.5'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10	<10	<10	<10	<10	ND
S10@15'	5/6/2015	NA	NA	NA	<100	<10	<10	31	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	210	<10	<10	<10	<10	<10	ND
S10 Composite (4.5, 11.5, 15)	5/6/2015	NA	6.6	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11@2.5'	5/6/2015	NA	NA	NA	<100	<10	<10	<10	<50	<10	<10	NA	<10	<5.0	<50	<10	<10	<10	<10					





**TABLE B**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: TPHs and VOCs**

Sample	Date	Oil & Grease	TPHs						VOCs														
			TPH-diesel	TPH-motor oil	TPH-gasoline	p-Isopropyltoluene	Isopropyl Benzene	n-propyl benzene	Benzene	Ethylbenzene	Toluene	Total xylenes	m,p-xylene	o-xylene	tert-butanol	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	MTBE	Napthalene	tert-Butylbenzene	sec-Butylbenzene	n-Butylbenzene	Other VOCs
			mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RWQCB's Environmental Screening Levels <sup>1</sup>		N/A	100	100	100,000	--	--	--	44	3,300	2,900	2,300	2,300*	2,300*	--	--	--	23	1200	--	--	--	N/A
DTSC SL <sup>2</sup>		N/A	100	100	--	--	--	--	330	--	1,100	--	--	--	--	210,000	--	--	--	2,200,000	2,200,000	1,200,000	N/A
TX6	3/10/1998	NA	NA	NA	340,000	NA	NA	NA	440	3,300	900	15,000	NA	NA	NA	NA	NA	<2,500	NA	NA	NA	NA	NA
TX7	3/10/1998	NA	NA	NA	66,000	NA	NA	NA	<25	120	86	940	NA	NA	NA	NA	NA	460	NA	NA	NA	NA	NA
TX8	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	1,100	NA	NA	NA	NA	NA
SP1	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	5.4	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
SP2	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
P1	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
P2	3/10/1998	NA	NA	NA	450	NA	NA	NA	62	560	720	4,700	NA	NA	NA	NA	NA	520	NA	NA	NA	NA	NA
P3	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
P4	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
P5	3/10/1998	NA	NA	NA	<1,000	NA	NA	NA	<5	<5	<5	5.7	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
P6	3/10/1998	NA	NA	NA	5,700	NA	NA	NA	51	41	17	160	NA	NA	NA	NA	NA	57	NA	NA	NA	NA	NA
P7	3/10/1998	NA	NA	NA	1,200,000	NA	NA	NA	<5	24,000	2,300	55,000	NA	NA	NA	NA	NA	<12,500	NA	NA	NA	NA	NA
P8	3/10/1998	NA	NA	NA	16,000	NA	NA	NA	1,400	260	69	370	NA	NA	NA	NA	NA	8,000	NA	NA	NA	NA	NA
P9	3/10/1998	NA	NA	NA	15,000	NA	NA	NA	190	340	32	1,100	NA	NA	NA	NA	NA	300	NA	NA	NA	NA	NA
P10	3/10/1998	NA	NA	NA	18,000	NA	NA	NA	220	330	37	1,000	NA	NA	NA	NA	NA	1,800	NA	NA	NA	NA	NA
P11	3/10/1998	NA	NA	NA	1,100	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
UO1	3/10/1998	110	<1	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	110	NA	NA	NA	NA	NA
UO2	3/10/1998	91	4.8	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
UOSP1(a-d)	3/10/1998	52	3.9	NA	<1,000	NA	NA	NA	<5	<5	<5	<5	NA	NA	NA	NA	NA	<50	NA	NA	NA	NA	NA
PX2	11/19/1998	NA	NA	NA	2,920	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	39.6	NA	NA	NA	NA	NA
PX5	11/19/1998	NA	NA	NA	95,700	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA
PX7	11/19/1998	NA	NA	NA	1,190,000	NA	NA	NA	<500	NA	NA	NA	NA	NA	NA	NA	NA	<2,500	NA	NA	NA	NA	NA
PX8	11/19/1998	NA	NA	NA	<400	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	637	NA	NA	NA	NA	NA
PX9	11/19/1998	NA	NA	NA	5,210	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	138	NA	NA	NA	NA	NA
PX10	11/19/1998	NA	NA	NA	44,600	NA	NA	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	<25	NA	NA	NA	NA	NA
B14-5	6/4/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
B14-15	6/7/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B14-22	6/7/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
B17-5	6/4/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B17-15	6/6/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B17-25	6/6/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B18-5	6/4/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B18-15	6/6/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B18-25	6/6/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B19-5	6/4/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B20-5	6/4/2007	NA	NA	NA	<1,000	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B20-15	6/6/2007	NA	NA	NA	<1,001	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-6	6/7/2007	NA	NA	NA	<1,002	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-10	6/7/2007	NA	NA	NA	<1,003	NA	NA	NA	<0.5	<1	1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-15	6/7/2007	NA	NA	NA	<1,004	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-20	6/7/2007	NA	NA	NA	<1,005	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-25	6/7/2007	NA	NA	NA	<1,006	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
B21-30	6/7/2007	NA	NA	NA	<1,007	NA	NA	NA	<0.5	<1	<1	<1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
V1-5.5	10/24/2007	<1	3.1	NA	<1,000	<5	<1.0	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<5	<5	<5	<5.0	<5.0	ND
V1-10.5	10/24/2007	2,300	<0.12	2,300	19,000	<5	14	30	<5	<5	<5	NA	<5	<5	140	<5	<5	74	<5	<5	<5.0	10	ND
V2-5.5	10/23/2007	NA	3.1	<5	7,500	<5	<5	13	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5	8.5	ND
V2-10.5	10/23/2007	NA	<1	<5	<1,000	<5	<1.0	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5.0	<5.0	ND
V3-5.5	10/23/2007	NA	<1	<5	1,800	<5	1.8	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5.0	<5.0	ND
V3-10.5	10/23/2007	NA	740	<50	5,200,000	78	630	1,200	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	500	370	ND
V4-5.5	10/24/2007	NA	16	45	25,000	<5	12	40	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5.0	12	ND
V4-10.5	10/24/2007	NA	5.8	<5	17,000	<5	9	32	150	110	5.5	NA	71	<5	<50	21	15	150	7.3	<5	<5.0	12	ND
V5-5.5	10/23/2007	NA	14	48	7,800	<5	7.8	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5.0	<5.0	ND
V5-10.5	10/23/2007	NA	330	<25	2,500,000	31	18	50	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	14	13	25	65	ND
V6-5.5	10/23/2007	NA	NA	<1.0	NA	<5	<1.0	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<20	<5	<5	<5.0	<5.0	ND
V6-10.5	10/23/2007	NA	NA	<1.0	NA	<5	<1.0	<5															

**TABLE B**  
**SUMMARY OF SOIL ANALYTICAL RESULTS: TPHs and VOCs**

Sample	Date	Oil & Grease	TPHs		VOCs																		
			TPH-diesel	TPH-motor oil	TPH-gasoline	p-Isopropyltoluene	Isopropyl Benzene	n-propyl benzene	Benzene	Ethylbenzene	Toluene	Total xylenes	m,p-xylene	o-xylene	tert-butanol	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	MTBE	Napthalene	tert-Butylbenzene	sec-Butylbenzene	n-Butylbenzene	Other VOCs
			mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
<b>RWQCB's Environmental Screening Levels <sup>1</sup></b>		N/A	100	100	100,000	--	--	--	44	3,300	2,900	2,300	2,300*	2,300*	--	--	--	23	1200	--	--	--	N/A
<b>DTSC SL <sup>2</sup></b>		N/A	100	100	--	--	--	--	330	--	1,100	--	--	--	--	210,000	--	--	--	2,200,000	2,200,000	1,200,000	N/A
V9-5.5	10/24/2007	<1	NA	<1.0	<1,000	<5	<1.0	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<5	<5	<5	<5.0	<5.0	ND
V9-10.5	10/24/2007	<1	NA	<1.0	<1,000	<5	<1.0	<5	<5	<5	<5	NA	<5	<5	<50	<5	<5	<5	<5	<5	<5.0	<5.0	ND

Notes:

NA = not analyzed

N/A =NOT APPLICABLE

ND = not detected

<5.0 indicates result is less than the laboratory reporting limit of 5 mg/kg.

<sup>1</sup> Regional Water Quality Control Board (RWQCB) Environmental Screening Level for Shallow Soil for Residential Land Use where Groundwater is a current or potential drinking water resource (Table A-1), December 2013

<sup>2</sup> Department of Toxic Substances Control Modified Screening Levels for residential soil May 2015

\* Screening level presented is a sum pf m,p-xylene and o-xylene

All the soil samples presented in the table will be removed as a part of the excavation.



TABLE D - CALCULATION OF BENZO(A)PYRENE EQUIVALENT

PAH	Benzo[g,h,i]perylene			Phenanthrene			Benz[a]anthracene			Benzo[b]fluoranthene			Benzo[k]fluoranthene			Benzo[a]pyrene			Chrysene			Dibenz[a,h]anthracene			Indeno[1,2,3-cd]pyrene			Sum of BaP-Eq mg/kg
	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	Concentration mg/kg	PEF -	BaP-Eq mg/kg	
S2 Composite (6, 9, 11, 16)	0.36	0.01	0.0036	6.3	0.001	0.0063	0.36	0.1	0.036	0.36	0.1	0.036	5	0.01	0.05	0.36	1	0.36	0.36	0.001	0.00036	2.2	1	2.2	0.36	0.1	0.036	2.72826
S34@4'	0.05	0.01	0.0005	0.051	0.001	0.00051	0.054	0.1	0.0054	0.072	0.1	0.0072	0.024	0.01	0.00024	0.058	1	0.058	0.049	0.001	0.000049	0.016	1	0.016	0.041	0.1	0.0041	0.09154
S34@7.5'	0.024	0.01	0.00024	0.013	0.001	0.00013	0.0096	0.1	0.00096	0.016	0.1	0.0016	0.0065	0.01	0.000065	0.016	1	0.016	0.015	0.001	0.000015	0.0043	1	0.0043	0.014	0.1	0.0014	0.024593
S35@5'	14	0.01	0.14	11	0.001	0.011	9.7	0.1	0.97	15	0.1	1.5	5.3	0.01	0.053	12	1	12	11	0.001	0.011	2.6	1	2.6	9.8	0.1	0.98	18.265
S35@7.5'	0.0036	0.01	0.000036	0.088	0.001	0.000088	0.035	0.1	0.0035	0.015	0.1	0.0015	0.0058	0.01	0.000058	0.039	1	0.039	0.053	0.001	0.000053	0.0047	1	0.0047	0.0086	0.1	0.00086	0.049795
S37@3'	0.0036	0.01	0.000036	0.0072	0.001	0.000072	0.036	0.1	0.0036	0.036	0.1	0.0036	0.0061	0.01	0.000061	0.00144	1	0.00144	0.0036	0.001	0.0000036	0.036	1	0.036	0.036	0.1	0.0036	0.0483478
S37@7.5'	190	0.01	1.9	12	0.001	0.012	97	0.1	9.7	210	0.1	21	6.5	0.01	0.065	180	1	180	140	0.001	0.14	4.1	1	4.1	150	0.1	15	231.917
S39@4'	2.3	0.01	0.023	1.3	0.001	0.0013	1.2	0.1	0.12	1.6	0.1	0.16	1.6	0.01	0.016	1.6	1	1.6	1.9	0.001	0.0019	0.024	1	0.024	1.4	0.1	0.14	2.0862
S39@8'	0.0085	0.01	0.000085	0.024	0.001	0.000024	0.012	0.1	0.0012	0.012	0.1	0.0012	0.0046	0.01	0.000046	0.011	1	0.011	0.013	0.001	0.000013	0.036	1	0.036	0.007	0.1	0.0007	0.050268
S41@5'	12	0.01	0.12	2.2	0.001	0.0022	8.6	0.1	0.86	16	0.1	1.6	4.6	0.01	0.046	14	1	14	12	0.001	0.012	2.7	1	2.7	8.6	0.1	0.86	20.2002
S41@7.5'	23	0.01	0.23	8.3	0.001	0.0083	10	0.1	1	22	0.1	2.2	8	0.01	0.08	20	1	20	15	0.001	0.015	6	1	6	15	0.1	1.5	31.0333
S44@5'	0.00576	0.01	0.0000576	0.15	0.001	0.00015	0.23	0.1	0.023	0.29	0.1	0.029	0.28	0.01	0.0028	0.24	1	0.24	0.32	0.001	0.00032	0.072	1	0.072	0.0064	0.1	0.00064	0.3679676
S44@7.5'	3.6	0.01	0.036	0.61	0.001	0.00061	0.76	0.1	0.076	2.3	0.1	0.23	0.74	0.01	0.0074	3.4	1	3.4	1.2	0.001	0.0012	1.3	1	1.3	2.8	0.1	0.28	5.33121
S45@4'	0.0036	0.01	0.000036	0.088	0.001	0.000088	0.035	0.1	0.0035	0.036	0.1	0.0036	0.036	0.01	0.00036	0.039	1	0.039	0.053	0.001	0.000053	0.036	1	0.036	0.0036	0.1	0.00036	0.082997
S45@7.5'	0.03	0.01	0.0003	0.07	0.001	0.00007	0.033	0.1	0.0033	0.043	0.1	0.0043	0.018	0.01	0.00018	0.034	1	0.034	0.037	0.001	0.000037	0.0086	1	0.0086	0.0036	0.1	0.00036	0.051147
S47@5'	0.0089	0.01	0.000089	0.0072	0.001	0.000072	0.0063	0.1	0.00063	0.0073	0.1	0.00073	0.036	0.01	0.00036	0.0056	1	0.0056	0.0071	0.001	0.000071	0.004	1	0.004	0.0036	0.1	0.00036	0.0117833
S47@7.5'	0.0042	0.01	0.000042	0.0072	0.001	0.000072	0.0041	0.1	0.00041	0.0039	0.1	0.00039	0.036	0.01	0.00036	0.0031	1	0.0031	0.004	0.001	0.000004	0.036	1	0.036	0.0036	0.1	0.00036	0.0406732
S48@5'	0.066	0.01	0.00066	0.024	0.001	0.000024	0.062	0.1	0.0062	0.071	0.1	0.0071	0.067	0.01	0.00067	0.054	1	0.054	0.072	0.001	0.000072	0.035	1	0.035	0.055	0.1	0.0055	0.109226
S48@7'	0.0092	0.01	0.000092	0.0042	0.001	0.000042	0.0078	0.1	0.00078	0.0072	0.1	0.00072	0.004	0.01	0.00004	0.0054	1	0.0054	0.0079	0.001	0.000079	0.0049	1	0.0049	0.0058	0.1	0.00058	0.0125241
S50@5'	0.016	0.01	0.00016	0.93	0.001	0.00093	0.68	0.1	0.068	0.0116	0.1	0.0116	0.72	0.01	0.0072	0.67	1	0.67	0.99	0.001	0.00099	0.032	1	0.032	0.46	0.1	0.046	0.82644
S50@7.5'	0.0036	0.01	0.000036	0.028	0.001	0.000028	0.012	0.1	0.0012	0.012	0.1	0.0012	0.0052	0.01	0.000052	0.0092	1	0.0092	0.015	0.001	0.000015	0.036	1	0.036	0.0065	0.1	0.00065	0.048381
S52@4'	0.36	0.01	0.0036	0.064	0.001	0.000064	0.16	0.1	0.016	0.3	0.1	0.03	0.11	0.01	0.0011	0.3	1	0.3	0.23	0.001	0.00023	0.062	1	0.062	0.22	0.1	0.022	0.434994

Notes:  
 PAH = polynuclear aromatic hydrocarbon  
 PEF = Potency Equivalency Factor (DTSC, Benzo(a)pyrene Cancer Toxicity Criteria Updates: Implications for Human Health Risks)  
 BaP-Eq = Benzo(a)pyrene Equivalents  
 The laboratory reporting limit has been used for samples which were reported as non-detects.

**TABLE E -  
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**

Sample	Date	Total Oil & Grease	VOCs													SVOCs		Metals							
			TPH-g	Benzene	Toluene	Ethylbenzene	m,p-xylene	o-xylene	Isopropyl benzene	n-propyl benzene	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	Naphthalene	MTBE	TAME	Other VOCs	Benzoic Acid	Other SVOCs	Barium	Cobalt	Molybdenum	Nickel	Selenium	Zinc	Other metals
			mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
<b>EBMUD Wastewater Discharge Limits<sup>1</sup></b>		<b>100</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	N/A	5	N/A	
<b>RWQCB ESL (Table F-1a)<sup>2</sup></b>		<b>N/A</b>	<b>100</b>	<b>1</b>	<b>40</b>	<b>30</b>	N/A	N/A	N/A	N/A	N/A	N/A	<b>6.1</b>	<b>5</b>	N/A	N/A	N/A	N/A	<b>1</b>	<b>0.003</b>	<b>0.078</b>	<b>0.0082</b>	<b>0.005</b>	<b>0.081</b>	N/A
GW-1	4/30/2015	<5.6	<50	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	3.8	<0.5	ND	<26	ND	0.106	<0.005	<0.009	<b>0.0123</b>	<b>0.0267</b>	0.0195	ND
GW-4	4/30/2015	<8.3	<100	0.94	0.96	1.3	2	0.58	0.26	0.9	0.22	0.88	0.62	<1	<1	ND	<28	ND	0.0641	<b>0.0212</b>	<0.009	<b>0.0364</b>	<0.019	0.0153	ND
GW-7	5/1/2015	<7.1	89	<0.68	<0.68	<0.68	<1.4	<0.68	<0.68	<0.68	<0.68	<0.68	<1.4	140	2.2	ND	<33	ND	0.0938	<b>0.0213</b>	0.0264	<b>0.0552</b>	<0.0190	0.0123	ND
GW-11	5/6/2015	<5	<50	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	ND	19	ND	0.104	<b>0.00995</b>	<0.0096	<b>0.0335</b>	<0.0203	0.0224	ND

Notes:

N/A = not applicable

ND = not detected

<0.5 indicates result is less than the laboratory reporting limit of 0.5 µg/L.

<sup>1</sup> East Bay Municipal Utility District (EBMUD) Wastewater Control Ordinance, August 22, 2013.

<sup>2</sup> Regional Water Quality Control Board (RWQCB), Groundwater Screening Levels where groundwater is a current or potential drinking water resource (Table F-1a), December 2013.

**TABLE F -  
SUMMARY OF SOIL GAS ANALYTICAL RESULTS**

Sample ID	Date	VOCs															
		TPH-g	Benzene	Toluene	Ethyl benzene	Xylenes	Acetone	Carbon Disulfide	Isopropyl benzene	MTBE	n-propyl benzene	tert butyl benzene	TBA	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	4 - ethyl toluene	Other VOCs
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>4</sup>	µg/m <sup>5</sup>	µg/m <sup>6</sup>	µg/m <sup>7</sup>	µg/m <sup>8</sup>	µg/m <sup>9</sup>
<b>RWQCB ESLs (Table E-3)<sup>1</sup></b>		<b>590,000</b>	<b>840</b>	<b>310,000</b>	<b>970</b>	<b>100,000</b>	<b>3.2E+07</b>	<b>-</b>	<b>-</b>	<b>9,400</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>N/A</b>
G-1	10/18/2007	<50,000	55	940	100	550	340	16	<500	<500	<500	<500	260	32	120	34	ND
G-2	10/18/2007	<b>20,000,000</b>	<500	<500	<500	<500	<5,000	<500	<500	4,700	<500	<500	<5,000	<500	<500	NA	ND
G-3	10/18/2007	<b>28,000,000</b>	<500	<500	<500	<500	<5,000	<500	1,200	<500	<500	<500	<5,000	<500	<500	<500	ND
G-4	10/18/2007	<b>32,000,000</b>	<10,000	<10,000	<10,000	<10,000	<100,000	<10,000	18,000	<10,000	15,000	<10,000	<5,000	<10,000	<10,000	NA	ND
G-5	10/18/2007	<b>48,000,000</b>	<10,000	<10,000	<10,000	<10,000	<100,000	<10,000	<10,000	<10,000	<10,000	<10,000	<100,000	<10,000	<10,000	NA	ND
G-6	10/18/2007	<b>12,000,000</b>	<500	<500	<500	<500	<5,000	<500	4,100	<500	2,800	660	<5,000	<500	<500	NA	ND
G-7	10/18/2007	<b>11,000,000</b>	<10,000	<10,000	<10,000	<10,000	<100,000	<10,000	<10,000	<b>28,000</b>	<10,000	<10,000	<100,000	<10,000	<10,000	NA	ND
G-8	10/18/2007	<b>20,000,000</b>	<10,000	<10,000	<10,000	<10,000	<100,000	<10,000	<10,000	<b>18,000</b>	<10,000	<10,000	<100,000	<10,000	<10,000	NA	ND
G-9	10/18/2007	<b>15,000,000</b>	<b>23,000</b>	<10,000	<b>99,000</b>	43,000	<100,000	<10,000	18,000	<b>19,000</b>	17,000	<10,000	<100,000	<10,000	<10,000	NA	ND
G-10	10/18/2007	<b>21,000,000</b>	<b>54,000</b>	<500	<500	<500	<5,000	<500	4,300	<500	2,800	890	<5,000	<500	<500	NA	ND
G-11	10/18/2007	<b>2,300,000</b>	<500	<500	<500	<500	<5,000	<500	3,900	<500	3,500	840	<5,000	<500	<500	NA	ND
G-12	10/18/2007	<b>780,000</b>	<500	<500	800	1,400	<5,000	<500	800	<500	860	<500	<5,000	<500	<500	NA	ND
G-13	10/18/2007	<b>910,000</b>	<b>1,300</b>	<500	<500	<500	<5,000	<500	830	<500	720	<500	<5,000	<500	<500	NA	ND

Notes:

N/A = not applicable

ND = not detected

<500 indicates result is less than the laboratory reporting limit of 500 µg/m<sup>3</sup>.

<sup>1</sup> Regional Water Quality Control Board (RWQCB), Ambient and Indoor Air Screening Levels for Residential Exposure with an attenuation factor of 0.001 for future residential land use (volatile chemicals only) (Table E-3), December 2013.

**APPENDIX B**

**Site Action Level Calculations  
Dust Control Plan**

$$\text{Chemical Conc. in Air} = (\text{Total Dust Conc. in Air})(\text{Maximum Soil Conc.})(CF)$$

$$\frac{\text{mg Chemical}}{m^3} = \left( \frac{\text{mg Dust}}{m^3} \right) \left( \frac{\text{mg Chemical}}{\text{kg soil}} \right) \left( \frac{1 \text{ kg soil}}{1 \times 10^6 \text{ mg soil}} \right)$$

<b>ANALYTE</b>	<b>MAX. SOIL CONC. (mg/kg)</b>	<b>FENCELINE ACTION LEVEL (mg/m<sup>3</sup>)</b>	<b>SOURCE</b>	<b>SITE ACTION LEVEL FOR TOTAL DUST (mg/m<sup>3</sup>)</b>
Lead	5,000	5E-03 <sup>1</sup>	ATSDR Int. Inhalation MRL	1
Benzo(a)pyrene	232	5E-03 <sup>2</sup>	ATSDR Int. Inhalation MRL	21.6

Using the formula and the ATSDR acute MRL as the fenceline action level, a site action level of 1.09 was calculated for lead with a maximum concentration of 5,000 mg/kg.

Using the formula and the ATSDR acute MRL as the fenceline action level, a site action level of 21.6 was calculated for benzo(a)pyrene [B(a)p] with a maximum equivalent concentration of 232 mg/kg.

<sup>1</sup> U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Public Health Service, Agency for Toxic Substances and Disease Registry (ASTSDR), Toxicological Profile for Lead, April 2007.

<sup>2</sup> U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Public Health Service, Agency for Toxic Substances and Disease Registry (ASTSDR), Toxicological Profile for Polycyclic Aromatic Hydrocarbons, August 1995.



## **1.0 DUST CONTROL PLAN**

This section details potential dust control measures that the Contractor will implement to minimize dust emissions during the remedial action. Dust emissions may result from activities during remedial action and from wind erosion. These sources are most effectively controlled using wet suppression. A high wind threshold will also be established to minimize wind erosion during extreme meteorological conditions. Stockpiles will be covered unless being loaded, water will be sprayed on areas, which have already been excavated and are subject to wind erosion. Dust control measures will be performed in accordance with applicable Bay Area Air Quality Management District standards.

## **2.0 DUST MITIGATION**

The main mechanism for the control of fugitive dust emissions from construction activities and wind erosion is by watering, which leads to the formation of a surface crust to reduce the available reservoir of dust. In addition to water, a wide variety of chemical dust suppressants are available to enhance the formation of a surface crust. The effectiveness of wet suppression is dependent on the type of activities occurring, the frequency of watering, and the meteorological conditions. The watering schedule will be determined by an evaluation of the meteorological data, site conditions and site activities.

## **3.0 GENERAL DUST CONTROL METHODS**

General dust control methods discussed in this document fall into the nine elements listed below and are briefly discussed in the following sections.

1. Track-out prevention and control measures.
2. Traffic control over unpaved areas.
3. Controls for offsite handling of excavated soil.
4. Controls during earthwork activities.
5. Protection of active soil stockpiles.
6. Protection of inactive stockpiles and disturbed soil areas.
7. Excavation areas.
8. Loading operations.
9. Post-construction stabilization of disturbed areas.

Control methods for fugitive dust generated by soil disturbance or excavation include:

- Dust entrained during onsite travel on paved and unpaved surfaces.
- Dust entrained during site grading, excavation and backfilling at the Property.
- Dust entrained during aggregate and soil stockpiling, loading and unloading operations.
- Wind erosion of area disturbed during construction activities.

### **3.1 TRACK-OUT PREVENTION AND CONTROL MEASURES**

- Track-out occurs when vehicles and equipment exiting the Property carry soil and rock debris beyond the Property boundary. Each egress location shall contain a facility to control track-out of loose materials and will include gravel pads. The gravel pads shall be installed according to the specifications provided in the Erosion and Sediment Control Plan of the Storm Water Pollution Prevention Plan (SWPPP), provided under separate cover, for the project. Prior to entering the paved road areas, traffic shall traverse gravel ramps at least 50 feet long to prevent track-out. The track-out control measures shall be applied to any vehicles, including personal and delivery that enter areas disturbed by grading activity.
- Whenever soil from the project is deposited on the public roadway, the contractor shall also employ wet sweeping as necessary to control soil on the roadway. The sweeping effort shall be sufficient to remove soil from public roadways and shall not result in runoff being discharged into the stormwater collection system or onto any neighboring properties.

### **3.2 TRAFFIC CONTROL OVER UNPAVED AND PAVED AREAS**

For the project, the grading contractor shall post signage and enforce a vehicle and equipment speed limit of 15 miles per hour (mph). Contractor shall conduct tailgate meetings at the jobsite as required to achieve work force compliance of the 15 mph speed limit. The grading contractor shall prohibit workers and visitors from parking on bare soil surfaces. All onsite parking areas shall be gravel covered.

Unpaved roads within the Property shall be watered at the beginning of the workday, prior to the start of any personnel or equipment traveling on the unpaved surfaces, as well as at the end of the workday. The unpaved roads shall also be watered every 2 hours or frequently enough to maintain adequate wetness, at least three times daily. The frequency of watering can be reduced or eliminated, as appropriate, during periods of precipitation. Implementation of erosion control measure identified in the SWPPP, prepared under separate cover, will aide in control of fugitive dust emissions from public roadways and parking areas. An environmentally safe dust palliative may be applied to well-traveled haul roads upon approval by the Qualified SWPPP Practitioner.

For paved areas within the construction site, including but not limited to haul routes, parking and staging areas, the roadways shall be swept as necessary to control soil on roadway. In addition, at least the first 500 feet of any public roadway exiting from the construction site shall be monitored daily and swept as appropriate to control soil on roadway. Construction areas adjacent to and above grade from any paved roadway shall be treated with Best Management Practices, as specified in the SWPPP.

### **3.3 CONTROLS FOR OFFSITE TRANSPORT**

All vehicles that are used to transport solid bulk material shall cover loads with a tarp cover, or sufficiently wet materials and load onto trucks that provide an adequate freeboard to prevent loss of materials. Although not anticipated, all trucks carrying loose soil or sand shall cover loads

before leaving the construction site, and onsite vehicle speed will be limited to 15 miles per hour as discussed above.

Vehicles shall be checked to ensure that they are tarped and to remove any excess material from exterior surfaces of the cargo compartment. All haul trucks coming from offsite shall access the site via entrances conforming to track-out prevention as discussed above.

### **3.4 CONTROLS DURING EARTHWORK ACTIVITIES**

During clearing and grubbing activities, surface soils shall be wetted to the depth of anticipated cut prior to equipment operation. If compaction is not to take place immediately following clearing and grubbing, the surface soil shall be stabilized with dust palliative and water to form a crust on the soil.

The grading contractor shall use the application of water to suppress dust during earthwork activities. The contractor's water application shall be subject to approval of the Geotechnical Engineer regarding soil moisture conditions. Contractor's activities shall prohibit the presence of visible dust beyond the property boundaries. If the application of water is insufficient to prevent visible dust from being windblown beyond the property boundaries, the contractor shall suspend grading operations until dust suppression activities are successful. For construction of fill areas that have an optimum moisture content for compaction, completion of the compaction process will be performed as expeditiously as possible to minimize fugitive dust.

### **3.5 PROTECTION OF ACTIVE SOIL STOCKPILES**

Active stockpiles are those that remain in use, with no more than 14 consecutive days of inactivity. Stockpiled soil shall be treated to prohibit the spread of materials. Stockpiles shall be protected from losses due to windblown dust using one or more of the following methods:

- Covering with a tarp or plastic sheeting
- Wetting using water spray

Plastic sheeting or tarps shall be of sufficient thickness to prohibit tearing by wind or rapid degradation by sunlight. Stockpile covers shall be secured to prevent flapping or uncovering by wind and weather.

Wetting methods may be used for active stockpiles or as an alternative to covering. Whenever wetting is employed, the amount of water added shall be controlled and no runoff shall be allowed as a result of wetting activities, and shall be applied at least twice daily.

### **3.6 PROTECTION OF INACTIVE STOCKPILES AND DISTURBED AREAS**

Soil stockpiles and disturbed soil areas that will be inactive for more than 14 days shall be protected. In the event that a disturbed surface area or storage piles are inactive for more than 14 days, the implementation of one or more of the following shall be employed:

1. Adequate wetting of the disturbed area or stockpile surface. Wetting methods shall be subject to approval of the Geotechnical Engineer.
2. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations.
3. Use of tarp(s) or vegetative cover.
4. Any other measure as effective as the measures listed above.

### **3.7 EXCAVATION AREAS**

Excavation areas shall be visually monitored daily for the generation of fugitive dust. The area of excavation shall be wetted prior to mobilization of equipment. Additional water shall be added during active excavation, material handling and loading as necessary to reduce the generation of dust. Active excavation areas shall be wet a minimum of twice daily during dry weather, or more frequently as needed. The height from which the excavated soil is dropped either onto stockpiles or into other equipment shall be minimized.

### **3.8 LOADING OPERATIONS**

Material to be moved during loading operations shall be adequately wetted during the loading process to minimize fugitive dust generation. Loader buckets shall be emptied slowly and the drop height from the loader bucket shall be minimized. In addition, loading activities shall be halted during periods of sustained strong winds (25 miles per hour).

### **3.9 POST-CONSTRUCTION STABILIZATION OF DISTURBED AREAS**

All unpaved, non-landscape, or undeveloped areas disturbed during site activities shall be stabilized when construction activities are halted for an extended period of time and following the completion of site activities. The disturbed surfaces shall be stabilized with Best Management Practices, as specified in the SWPPP.

### **4.0 METEOROLOGICAL STATION AND DUST MONITORING**

A MiniRAM dust meter or equivalent will be used to measure real-time dust levels at a minimum of one upwind and two downwind locations. The meters will be mounted on surveyor's tripods approximately five feet above the ground surface. Dust meters will be equipped with data recorders, which will be periodically downloaded. Meters will be checked hourly to record PM10 readings. The location of the monitors will be adjusted throughout the day based on wind direction data from the on-site meteorological station. As per typical industry standards and discussions with YCAMD personnel, the action level for the project will be based on a 50  $\mu\text{g}/\text{m}^3$  differential between upwind and downwind measurement stations. If the action level is exceeded for a period greater than 15 minutes, work operations will cease until adequate dust mitigation measures can be implemented.

## **5.0 GENERAL AEROSOL AND GASEOUS BY-PRODUCT CONTROL METHODS**

Construction equipment exhaust has the ability to produce aerosols and gaseous by-products. As such, the construction contractor shall implement the following measures to reduce off-road exhaust emissions during grading and construction activities. To assure compliance, the City of Lafayette shall verify that these measures have been implemented during normal construction site inspections:

- Large off-road construction equipment with horsepower (hp) ratings of 50 hp or higher shall meet the United States Environmental Protection Agency-Certified emission standard for Tier 3 off-road equipment or higher. Tier 3 engines between 50 and 750 horsepower are available for 2006 to 2008 model years and Tier 4 equipment was phased in for off-road fleets between 2008 and 2014 and may be available. A list of construction equipment by type and model year shall be maintained by the construction contractor onsite.
- All construction equipment shall be properly serviced and maintained to the manufacturer's standards to reduce operational emissions.
- Nonessential idling of construction equipment shall be limited to no more than 5 consecutive minutes. The California Air Resources Board defines "essential" and "nonessential" idling as part of the Airborne Toxics Control Measures in the California Code of Regulations (Title 13). Essential idling is idling necessary for testing, service, repairs, idling is necessary to accomplish work for which the vehicle was designed, idling is necessary to operate defrosters, heaters, air conditioners, or other equipment to ensure the safety or health of the driver or passengers, etc.
- Construction activities that require use of large off-road equipment (50 hp or greater) shall be suspended on "Spare the Air" days.

## **6.0 RECORD KEEPING**

The remedial action contractor will be responsible for maintaining a field logbook, which will serve to document meteorological conditions, and dust mitigation measures implemented. This documentation will be included in the final report.

## **APPENDIX C**

### **Health & Safety Plan**

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## GLOSSARY

APR	Air Purifying Respirator
ACGIH	American Conference Governmental Industrial Hygienists
AIHA	American Industrial Hygiene Association
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
CCR	California Code of Regulations
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern
CPR	Cardiopulmonary resuscitation
CRZ	Contaminant Reduction Zone
dBA	Decibels on the A scale
DOT	Department of Transportation
DTSC	California Department of Toxic Substance Control
EPA	U.S. Environmental Protection Agency
<sup>0</sup> F	Degrees Fahrenheit
eV	Electron Volt
EZ	Exclusion Zone
FEV	Forced expiratory volume
FVC	Forced vital capacity
GISO	General Industry Safety Order
GPS	Global Positioning System
HEPA	High Efficiency Particulate Air
HSM	Health and Safety Manager
mg/m <sup>3</sup>	Milligrams per cubic meter
MSDS	Material Safety Data Sheets
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
ppb	Parts per Billion
PPE	Personal Protective Equipment
ppm	Parts per million
PSHM	Program Safety and Health Manager
ROPS	Roll over protection structure
RV	Reserve volume
HASP	Health and Safety Plan
SSO	Site Safety and Health Officer
SVOC	Semi-volatile organic compound
TLV	Threshold Limit Value
TWA	Time Weighted Average
VOC	Volatile Organic Compound

## **DISCLAIMER**

This Health and Safety Plan (HASP) was prepared for the proposed development activities at the Site located at 2630 Broadway in Oakland, California (the “Site”). The Plan was prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present on the Site and for the execution of the proposed scope of work. It is not possible in advance to discover, evaluate, and protect against all possible hazards, which may be encountered during the duration of this project. Therefore, this HASP may not be appropriate if the work is not performed by or using the methods presently anticipated. In addition, as the work is performed, conditions different from that anticipated may be encountered and this HASP may have to be modified.

Adherence to the requirements of this HASP will significantly reduce, but not eliminate, the potential for occupational injury and illness at the Site. The guidelines contained in this HASP were developed specifically for the soil removal project at the Site described herein and should not be used at any other site without the review and approval of a qualified health and safety professional.

## **1.0 INTRODUCTION**

This Health and Safety Plan (HASP) sets forth the minimum health, safety, and emergency response requirements for activities involving, or potentially involving, employee exposure to physical or chemical health hazards associated with the demolition and construction activities for the project site located at 2630 Broadway, Oakland, California (the Site). The proposed development is known as 27<sup>th</sup> and Broadway.

The Site is currently occupied by a vacant one large circular structure (formerly used as a restaurant), along with parking space used by an automotive dealership. It is bounded by Broadway to the west, 27<sup>th</sup> Street to the north/northeast, and 26<sup>th</sup> Street to the south. The proposed mixed-use redevelopment will consist of a podium-type structure with retail and commercial spaces in a 20-foot-high first story, which will be topped by six stories of residential units. The approximate depth of the excavation is 40 feet below ground surface. This HASP supplements the Site Management Plan (SMP) prepared for the Site.

The purpose of the SMP is to provide the proposed procedures and protocols to address potential soil impacts that may be encountered during demolition and site grading activities.

### **1.1 PLANNED ACTIONS**

The purpose of this SMP is to describe the procedures and protocols that may be needed if soil impacts and other environmental conditions are encountered at the Site during demolition and grading activities. Implementation of the SMP will manage residual contaminants in the subsurface at the Site in a manner that is both protective of human health and the environment and compatible with current and future land uses.

The proposed soil mitigation consists of the removal of impacted soil (any soil exhibiting discoloration/staining or olfactory evidence of contaminant impacts), if any, encountered during demolition/construction that represents a significant risk to future human occupants.

As a part of the proposed development plan for this Site, the approximate depth of the excavation is 40 feet below ground surface. Excavated soil will be off-hauled to an appropriate facility for disposal. All appropriate dust control and stormwater best management practices (BMPs) will be implemented during the soil mitigation activities.

## **2.0 SITE SAFETY REGULATORY REQUIREMENTS**

Work performed under this HASP will comply with applicable Federal, State of California, and local safety and occupational health laws and regulations. Applicable regulations include, but are not limited to, Occupational Safety and Health Administration (OSHA) Standards 29 CFR, Part 1910.120, "Hazardous Waste Site Operations and Emergency Response"; 29 CFR 1910.1025, General Industry Standards; 8 CCR 5216, General Industry Standard 29 CFR 1926.62, Lead in the Construction Industry; and 8 CCR 1532.1, Lead in the Construction Industry. Where the

requirements of these specifications, applicable laws, criteria, ordinances, regulations and referenced documents vary, the most stringent will apply.

### **3.0 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES**

#### **3.1 GENERAL**

This section of the HASP outlines the organizational structure and Site personnel responsible for the safety and health of personnel during the proposed work. The replacement of any member of the Health and Health Staff requires the acceptance of the Project Manager. Replacement requests will include the names, qualifications, duties, and responsibilities of each proposed replacement.

#### **3.2 PROJECT MANAGER**

The Project Manager (PM) for ENGEO is Mr. Shawn Munger. Mr. Munger is responsible for:

- Oversight of Site activities required to implement this HASP.
- Directing work performed under this contract.
- Verifying that work is completed in accordance with the project workplan.

#### **3.3 HEALTH AND SAFETY MANAGER (HSM)**

The Site Health and Safety Manager (HSM) is Ms. Divya Bhargava. Ms. Bhargava is responsible for:

- Implementing and enforcing of the HASP.
- Providing the initial and periodic site-specific training.
- Monitoring of remediation activities.
- Coordinating activities in the event of an onsite emergency.
- Evaluating air monitoring data and changes to engineering controls, work practices, and personal protection equipment (PPE) that may be warranted.
- Receiving onsite accident reports.

#### **3.4 SITE SAFETY OFFICER (SSO)**

The Site Safety Officer is Mr. Robert Peck. Mr. Peck is responsible for:

- Conduct onsite training and the day to day onsite implementation and enforcement of the HASP.

- Be assigned to the site on a full-time basis for the duration of field activities.
- Have authority to ensure Site compliance with specified safety and health requirements, Federal and State of California OSHA regulations and all aspects of the HASP including, but not limited to, activity hazard analyses, air monitoring, use of PPE, decontamination of personnel and equipment, site control, standard operating procedures used to minimize hazards, safe use of engineering controls, the emergency response plan, confined space entry procedures, spill containment-program, and preparation of records by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log.
- Have the authority to stop work if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.
- Consult with proper authorities and coordinate any modifications to the HASP with the Project Manager.
- Serve as a member of ENGEO's quality control staff on matters relating to safety and health.
- Conduct accident investigations and prepare accident reports (Attachment A).
- Review results of daily quality control inspections and document safety and health findings into the Project Manager's Daily Log (Attachment B).
- In coordination with site management recommend corrective actions for identified deficiencies and oversee the corrective actions.

### **3.5 PERSONS CERTIFIED IN FIRST AID AND CPR**

CPR, if needed, will be conducted by trained personnel, or offsite emergency responders (i.e. paramedics, fire fighters). Many personnel with 40-hour Hazardous Waste Operations and Emergency Response training will have completed CPR and first aid courses as part of their training. The consultant/contractor is responsible for identifying and informing workers of designated first aid trained personnel. These persons may perform other duties but will be immediately available to render first aid when needed. The identity of these persons will be posted and made known to all personnel involved in this project.

## **4.0 HAZARD/RISK ANALYSIS**

### **4.1 IDENTIFIED TASKS**

The tasks identified for the conduct of this removal project include the following:

- Mobilization/demobilization
- Excavation of stockpiled soil

- Sampling of stockpiled soil
- Loading and off haul of stockpiled soil
- Surface soil confirmation sampling
- Backfilling and compaction

## **4.2 POTENTIAL HAZARDS**

### **4.2.1 General Safety Hazards**

Potential safety hazards will include, but are not limited to, general construction hazards, such as:

- Physical contact with heavy equipment.
- Physical contact with motor vehicles.
- Slips/trips/falls due to unstable surfaces, or uneven terrain.
- Exposure to site contaminants including dust.
- Equipment noise.
- Buried utility lines and energized overhead and underground power lines.
- Heat stress and cold stress.
- Lifting heavy objects.
- Sunburn.
- Biological hazards.

These hazards are described below.

#### **4.2.1.1 Noise**

Noise exposures will be controlled to levels below the permissible noise exposure levels, which are equivalent to an 8-hour time weighted average (TWA) level of 85 decibels (dBA). Reduction of exposures may be by engineering controls or adequate hearing protection. Engineering controls will include isolation of the noise source by their enclosure and reduction of noise transmission by application of noise absorbing materials.

Most work site noise will originate from heavy equipment. As a result, equipment operators and observers will be required to use hearing protection when exposed at or above 85 decibels. A copy of the OSHA Occupational Noise Standard, 29 CFR 1910.95 will be available and copies will be made available to employees upon request.

#### **4.2.1.2 Heat Stress**

A worker's risk for developing heat stress is greatly increased when wearing impermeable clothing or respirators. This type of clothing interferes with the body's normal cooling mechanisms by preventing the evaporation of perspiration. For workers who wear permeable clothing, work/rest schedules recommended in the current ACGIH Threshold Limit Values (TLV) for Heat Stress will be followed. For workers who wear semi-permeable or impermeable clothing, technical guidelines in "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" will be

followed. Monitoring of personnel wearing impermeable clothing will commence when the ambient temperature is above 70 degrees Fahrenheit. Monitoring frequency will increase as the ambient temperature increases or as slow recovery rates are observed. A shady rest area and an adequate supply of cool drinking water will be provided for the workers.

#### 4.2.1.3 Cold Stress

Cold stress may be an exposure hazard during the project based on the current work schedule and anticipated weather conditions. Exposure to cold weather can lead to frost bite and/or hypothermia. The signs and symptoms of excessive exposure to cold are listed in Table 4.2.1.3-1.

**TABLE 4.2.1.3-1**  
Different Levels of Cold Exposure and Associated Symptoms

<b>Condition</b>	<b>Signs and symptoms</b>
Hypothermia - A condition when a person's body loses heat faster than it can be produced.	Vague, slow, slurred speech, impaired judgment, forgetfulness, memory lapses, drowsiness, inability to use the hands.
Frostbite - A condition where a part of the body is frozen	Loss of the sensation of touch, pressure and pain in the affected part of the body. This may occur without awareness of any numbness. Just before freezing, the skin becomes bright red and at freezing, small patches of white appear on the skin.

When weather conditions are cold, wet and windy, the following precautions will be instituted:

- Field personnel should wear layered clothing. Mittens, heavy socks, hats, jackets/vests, long underwear, glove liners or other suitable clothing should be worn when air temperatures fall below 40°F. Chemical protective clothing will be worn over the warm garments when protective clothing is required by the field operations.
- At temperatures below 30°F, temperature insulating suits and gloves should be considered.
- Protective outerwear should be used to prevent wetting of work shoes and feet, when appropriate.
- Additional clothing worn in layers allows gradual removal as work activities generate metabolic heat.
- At temperatures below 35°F, raingear should be worn if an employee could become wet on the job.



- At temperatures below 35°F, employees shall be provided with warm (65°F or above) break areas. If appropriate, space heaters will be provided to warm hand and feet.
- Hot liquids such as soups and warm drinks should be consumed during break periods. Caffeine beverages should be limited due to attendant diuretic and circulatory effects.
- A buddy system shall be practiced at all times. An employee that is observed shivering or showing signs of frostbite shall leave the cold area immediately.
- Work should be arranged to avoid sitting or standing for long periods.
- All employees who work in cold areas should be trained in the following subjects:
  - Proper first aid treatment for cold stress
  - Proper clothing practices
  - Proper eating and drinking habits
  - Recognition of impending adverse health effects due to cold
  - Safe work practices

#### 4.2.1.4 Sunburn

Sunburn is caused by overexposure to ultraviolet light (sunshine). The symptoms of exposure are not usually apparent until two to four hours after the exposure ceases. Depending upon the severity of the exposure, the symptoms can range from reddening of the skin, accompanied by mild discomfort, to painful deep burns and blisters. Although light-haired, fair-skinned, blue-eyed personnel are at the greatest risk of sunburn, all complexion types can develop sunburn.

The physical hazard of sunburn can be controlled by: (1) providing a shady rest area; (2) wearing appropriate clothing (long pants and tee shirts, i.e. no tank tops); (3) wearing sunscreen with an appropriate protection factor, as appropriate; and (4) working in shifts.

#### 4.2.1.5 Heavy Equipment Operation

The contractor is responsible for all personnel associated with heavy equipment operation. Equipment operators should maintain a constant awareness of their surroundings and associated hazards. Constant visual or verbal contact between the equipment operators and laborers will facilitate such awareness. When operating heavy equipment near an embankment, a spotter shall be present at all times to observe the soil behavior on which the unit is situated. All heavy equipment shall be equipped with a roll over protection structure (ROPS) and seat belts. Operators shall use seat belts at all times when in the cab of operating equipment. All personnel will wear high visibility safety vests and hearing protection if appropriate.

#### 4.2.1.6 Slip/Trip/Fall Hazards

Prevention of slips/trips and fall hazards can be reduced to a minimum if employees use caution when working on slick, uneven or unsteady surfaces. The risk of injury will be minimized by

implementing proper site control measures such as daily safety meetings, proper footwear and by keeping the work area free of obstructions.

#### 4.2.1.7 Lifting Hazards

Field operations often require that heavy physical labor tasks be performed. All employees will be instructed by the SSO and contractor in proper lifting techniques through safety meetings and demonstration. Additionally, employees will be instructed to not attempt to lift objects heavier than 60 pounds without mechanical assistance or the assistance of a fellow worker.

#### 4.2.1.8 Tool and Equipment Hazards

Improper tool handling and inadequate tool maintenance will increase risk of injury during their use. Management of these hazards requires rigorous maintenance of tools and equipment. The contractor is responsible for effective training of employees in the proper use of the tools. Hand tools that are damaged shall be tagged and removed from the work area. Equipment in need of maintenance or repair shall be tagged and removed from operation until repairs or replacement is accomplished. Only tools with immediate use will be present onsite. Unused tools shall be assembled at a collection point and removed from underfoot and immediate use.

#### 4.2.1.9 Fire Hazard Control

Caution will be used to prevent sparks or open flames within the vicinity of vegetation. When welding or cutting, be sure hot sparks or slag does not come in contact with flammables. An approved A or B fire extinguisher, sufficient in size, will be immediately available (usually 25 feet) when welding or cutting. All heavy equipment (drill rigs, loaders, backhoes, dozers, etc.) shall have a minimum of one 5-pound AB fire extinguisher mounted on it. A minimum of one AB fire extinguisher shall be at each remediation site. Only approved containers will be used for storing flammable liquids. Oily rags and waste will be placed in appropriate containers. Fire protection equipment will be used for firefighting only. The proper use and location of fire extinguishers will be known by all employees. Gasoline or other flammable liquids will not be used for cleaning. All fire hazards will be reported to the site superintendent immediately. Fire and emergency access lanes will be kept clear at all times in order to facilitate equipment entry and exit.

### **4.3 BIOLOGICAL HAZARDS**

Biological Hazards have not been identified but the following discussions may be relevant to activities. Potential biological hazards may consist of bees, wasps, snakes, spiders, ticks, fleas, poisonous plants such as poison oak and poison ivy, Hantavirus, and bird excrement.

#### **4.3.1 Ants, Bees, Wasps, Hornets and Yellow Jackets**

Nests and hives for ants, bees, wasps, hornets and yellow jackets often occur in ground, trees, brush and overhangs on buildings. The area will be checked for obvious nests and hives before it is cleared. If a nest or hive is detected, the PM or site SHO will be contacted before the nest is disturbed. If necessary a Pest management consultant will be brought onsite to recommend

procedures for by passing or moving the nest. Workers with identified insect allergies will not be allowed to work in the area of a nest or hive. If simple first aid measures do not alleviate the symptoms of a sting, the victim will be taken to the nearest medical center for consultation with a physician. An attempt will be made to kill the offending insect and take it to the emergency room with the victim if this can be done quickly and without endangering personnel.

#### **4.3.2 Spiders, Snakes and Fleas**

These insects exist in cool dark moist areas. The potential for encounters exist when reaching into dark covered places. Suggestions for control include using a long stick to break apart webs or loosen soil from certain areas. A flashlight should also be used before reaching into a dark area. Field personnel shall be aware of their surrounding and avoid contact with all insects.

#### **4.3.3 Rattlesnakes and Scorpions**

These creatures are indigenous to many parts of the United States, although are not expected to be encountered at the Site. The SSO will inform field team members at the daily tailgate safety meetings to be on the look-out for rattlesnakes and scorpions. It should be noted that the American Red Cross does not advocate the use of snakebite kits for snakebite injuries. Rather, experience has shown that the victim has a better chance of recovery without permanent damage when the site of the wound is immobilized and the victim rushed to the closest emergency medical facility (preferably within thirty (30) minutes).

#### **4.3.4 Poisonous Plants**

Plants such as poison ivy and poison oak grow wild in shady, moist area and at the base of surrounding seedling or adult trees. Many individuals are prone to break out in dermal (skin) rashes upon contact with the plant oil. A visual site inspection and identification of the plants should be completed prior to each work shift so that all individuals are aware of the potential exposure.

#### **4.3.5 Hantavirus**

Hazards associated with Hantavirus are not expected.

#### **4.3.6 Bird Excrement and Amplified Fungal Growth**

Hazards associated with bird excrement and/or amplified fungal growth are not expected

### **4.4 CHEMICAL HAZARDS**

During soil removal activities, site workers, visitors, and the surrounding community may be exposed to contaminated soils and resulting dusts. The concentrations expected in nuisance dusts are expected to be below regulatory action levels; however, dust suppression measures will be used to minimize migration of nuisance dust.

Analytes detected at concentrations exceeding their corresponding residential screening levels included TPH-g, TPH-d, TPH-mo, VOCs (including MTBE, naphthalene, ethylbenzene, m,p-xylene, o-xylene), metals, and SVOCs (benzo[k]fluoranthene and dibenz[a,h]anthracene).

## 5.0 SAFETY AND HEALTH TRAINING

### 5.1 CERTIFICATION OF TRAINING

Certification of 40- or 24-hour OSHA initial training by the consultant/contractor(s) must be provided to ENGEO before work on the site. Certification records must indicate the type and time period of training. Certification of supervised field experience must also be provided for previous work. If not available, supervised field experience may be obtained at the Site. In addition, workers must demonstrate the completion of annual 8-hour refresher training, as necessary. Employee training information and certifications may be found in Attachment C of this document. Requirements for initial training in hazardous substances and supervised field experience contained in 29 CFR 1910.120 and 8 CCR 5192 vary with the degree of anticipated exposure to hazardous substances. The initial training requirements for workers involved in the investigation and remediation activities that may involve exposure to contaminated soils are summarized in the following table:

**TABLE 5.1-1**  
**OSHA Initial Training and Field Experience Requirements**

Activity	Function	Initial Training (hours)	Supervised Field Experience (days)
Excavation and Drilling	Equipment operator and laborer	24	3
Site Safety Officer	Consultant—onsite during operations	24	3
Health and Safety Manager Project Manager	Consultant— onsite part time	40	3

### 5.2 TAILGATE SAFETY MEETINGS

At a minimum, daily tailgate health and safety meetings will be held and documented at the site for all field personnel. The SSO will be responsible for scheduling and conducting this safety meeting. All personnel will be required to attend. Hands-on refresher training on PPE, decontamination procedures, work practices, changes in work-tasks, schedule changes, results of air monitoring, and review of safety discrepancies noted will be discussed. Should an operation change affect the onsite fieldwork, a meeting prior to implementation of the change will be convened to explain the changes to all concerned.

## **6.0 PERSONAL PROTECTIVE EQUIPMENT**

### **6.1 LEVELS OF PPE**

All personnel working on the project site will wear the appropriate level of protection as described herein. It is anticipated that EPA level D modified will be required as the initial level of protection. The SSO, in consultation with the HSM may upgrade or downgrade levels of protection. In general, all onsite work will be conducted in Modified Level D PPE. Level A, B or C work is not anticipated for the project. A description of the PPE ensembles is presented below.

#### **6.1.1 Level D**

- Hearing Protection - custom fitted or disposable ear plugs/ear muffs (85dBA or above)
- Hard hat (meets ANSI requirements)
- Safety glasses with side shields (meets ANSI requirements)
- Safety shoes or boots
- Coveralls or long pants and orange shirts or high visibility safety vests
- Leather work gloves

#### **6.1.2 Level D Modified**

- Hearing protection as described above
- Work clothing, as dictated by the weather
- Safety shoes or boots
- Hard hat
- Tyvek (or equivalent) coveralls
- Nitrile gloves (when handling or contact may occur with contaminated soils or materials)
- Safety glasses with side shields
- High Visibility Safety vest

#### **6.1.3 Level C**

This level of protection is not anticipated for the Scope of Work assigned to this project.

#### **6.1.4 Level B**

This level of protection is not anticipated for the Scope of Work assigned to this project.

#### **6.1.5 Level A**

This level of protection is not anticipated for the Scope of Work assigned to this project.

## **6.2 INSPECTION OF PPE**

Specific procedures recommended by equipment manufacturers should be followed for inspection of PPE. A general inspection checklist for PPE before use includes:

- Determining that the clothing material is correct for the specified task at hand.
- Visually inspect for imperfect seams, non-uniform coatings, tears, closure malfunctions, hold up to light and check for pinholes.
- Hard Hats - Head harness is intact and installed properly. Check for cracks.
- Safety Glasses/Goggles - Lenses are clear and free of scratches. Side shields are present.
- Safety Shoes/Boots - Free of holes, damage, soles have ample thread, and laces are adequate.
- Air Purifying Respirators, if appropriate - Parts to respirators are intact and in place. Inspect for malfunctions, tears or disfigurement of the mask, proper cartridges, valves are not torn or warped, head and neck straps have ample elasticity.

## **7.0 SAFETY PROCEDURES, ENGINEERING CONTROLS, AND WORK PRACTICES**

### **7.1 GENERAL SITE RULES/PROHIBITIONS**

During soil removal work, all employees, subcontractors or persons entering the work site shall sign in with the SSO and shall sign out upon departing. Employees, subcontractors or persons who will be engaged in hazardous materials or waste operations or have the potential to be exposed to hazardous materials will be informed of the nature, and level of exposure. Each person engaged in such operations will be required to indicate they have been informed of the associated hazards and requirements by signing the Project Manager's notification form.

#### **7.1.1 Buddy System**

Contractor personnel will not conduct work activities alone at any of the sites. The "Buddy System", as specified in 29 CFR 1910.120 and 8 CCR Section 1532.1 will be implemented. The buddy teams working at the site will maintain visual and audible contact so that they may provide emergency assistance to each other. Both members of the buddy team need not be in the same site zone, but each member must be wearing adequate PPE to assist the other member.

#### **7.1.2 Engineering Controls and Work Practices**

Engineering controls are not anticipated for the proposed activity. Work practices to minimize exposure to nuisance dust will include the wetting down of dusty operations and relocating employees upwind of dusty areas, if necessary.

### **7.1.3 Employee Rotation**

A schedule of employee rotation will not be implemented as a means of compliance with permissible exposure.

### **7.1.4 Work Practices and Procedures**

The following health precautions will be implemented:

- Avoid skin contact and ingestion of stockpiled soil.
- Avoid excessively dusty areas
- Keep work areas clean and well ventilated
- Clean up spills promptly

## **7.2 MATERIALS HANDLING**

### **7.2.1 Spill and Discharge Control**

Should a spill or discharge of petroleum products or contaminated soil occur, the following measures will be taken:

- Take immediate measures to control and contain the spill to the smallest area possible.
- Keep unnecessary people away, isolate the hazardous area, deny entry to unauthorized people, do not allow unauthorized people to touch spilled material.
- Stay upwind.
- Keep out of low areas.
- Keep combustibles away from the spilled material.
- Use a water spray to reduce vapor or dust generation being cautious not to cause the migration of water outside the set boundaries.
- If necessary, take samples for analysis to determine adequate clean-up was performed.
- Remove or retrieve any discharged liquids or slugs. Absorb discharged materials with absorbents such as commercial pillows, kitty litter, sand, clean fill, or other noncombustible absorbent material. Place the absorbent/spill mixture into leak proof containers and dispose per EPA and DOT requirements.

### **7.2.2 Notification of Spills and Discharges**

If the spill or discharge is reportable, and/or human health or the environment is threatened, notify the National Response Center, Contra Costa County Environmental Health Department, San Jose Police and Fire Department non-emergency line, and the Project Manager. Spills or leaks, regardless of their quantity will be reported to the Project Manager immediately following discovery. A follow-up written report will be submitted to the Project Manager within seven (7) days after the initial report. The written report will be in narrative form and as a minimum include the following:

- A description of the material spilled including identity and quantity. Photographs showing the location and extent of the spill.
- A statement as to whether the amount spilled is EPA/State reportable and when and to whom it was reported.
- Exact time and location of the spill, including a description of the area involved.
- Containment procedures initiated and a full description of the cleanup measures taken, or to be taken, including disposal location of the spill residue.

### **7.2.3 Material Storage, and Disposal**

Employees will be trained in and will use proper lifting techniques. Material handling devices will be available for the material handling needs of an activity. Whenever heavy or bulky material is to be moved, the material handling needs will be evaluated in terms of weight, size, and distance and path of move. The following hierarchy will be followed in selecting a means for material handling:

- Elimination of material handling need by engineering controls
- Movement by mechanical device (e.g. lift truck, backhoe, loader, etc.)
- Movement by manual means with handling aid (e.g. dolly or cart)
- Movement by manual means with protective equipment (e.g. lifting belt or lifting monitor)

Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects. Where the movement of materials may be hazardous to personnel, taglines or other devices will be used to control the loads being handled by hoisting equipment. These devices will be nonconductive when used near energized lines.

Non-compatible materials will be segregated in storage.

Work areas and means of access will be maintained safe and orderly. Sufficient personnel and equipment will be provided to insure compliance with all housekeeping requirements. Work areas will be inspected daily for adequate housekeeping and findings recorded on daily inspection reports. Work will not be allowed in those areas that do not comply with the requirements of this section.



Waste material and rubbish, if generated, will be placed in suitable containers. Waste material and rubbish will not be stored in areas that are away from the general work areas. Separate covered, non-flammable/non-reactive containers will be provided for the collection of garbage, oily, flammable, and dangerous wastes. The containers will be labeled with a description of their contents. The contents will be properly disposed of on a scheduled basis.

Hazardous material waste (i.e. vehicle and equipment oils and lubricants, containers and drums for solvents, adhesives, etc.) will be collected, stored, and disposed of in accordance with Federal, state, and local agencies.

### **7.3 TEMPORARY FACILITIES**

Temporary facilities, including toilettes and hand wash facilities, will be located onsite. The facilities will be located in a central location, preferably upwind of soil removal activities.

### **7.4 FIRE PROTECTION AND PREVENTION PLAN**

The following are the elements of the Fire Protection and Prevention Plan:

- Portable fire extinguishers will be provided at each work site. Extinguishers shall be inspected weekly and tagged with inspection dates.
- Fire extinguishers will be suitably placed at each work site, distinctly marked, readily accessible, and maintained in a fully charged and operable condition.
- A fire extinguisher, rated not less than 20-AB will be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the work site. This requirement does not apply to the integral fuel tanks of motor vehicles.
- At least one portable fire extinguisher having a rating of not less than 20-AB will be located not less than 25 feet, nor more than 75 feet, from any bulk flammable liquid storage area. This requirement does not apply to the integral fuel tanks of motor vehicles.
- At least one portable fire extinguisher not less than 20-ABC will be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids.
- Each service or fueling area will be provided with at least one fire extinguisher having a rating of not less than 20-AB located so that an extinguisher will be within 50 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service area.
- At least one portable fire extinguisher not less than 5-ABC shall be mounted and accessible in each commercial vehicle and piece of heavy equipment.
- Fire extinguishers listed or approved by the California Fire Marshal and/or a nationally recognized testing laboratory will be used.

## **7.5 HAZARD COMMUNICATION**

All personnel must follow established work practices to safely handle hazardous materials and chemicals. A hazardous chemical is broadly defined as a chemical that is a health hazard, a physical hazard or both. A hazard communication program has been developed to limit the risks of personnel exposures, damage to equipment, and the unplanned release of hazardous materials and chemicals to the environment due to normal operations. The written program includes protocols for:

- Assessment of the hazards associated with chemicals onsite.
- Inventory and labeling of chemicals and their containers.
- Communication of hazards to the employee through Material Safety Data Sheets (MSDSs) for chemical products and tailgate meetings to discuss hazards of impacted environmental media, such as impacted soil or water.
- Training on the safe handling of chemicals.
- Acquisition, transportation and handling of chemicals.
- Emergency response to releases of chemicals.

The requirements of this program will apply to consultant/contractor in the event that they need to store hazardous materials and/or chemicals such as equipment, fuel, caustic compounds for sample preservation, or solvents for equipment decontamination on the site. The consultant/contractor will be responsible for coordinating the inventory of hazardous materials and chemicals used or stored at the site. The inventory will be utilized for reporting and emergency response purposes. Data contained in the inventory will include the name, quantity, and location of the chemical. Material Safety Data Sheets shall be readily available onsite for reference.

## **7.6 SANITATION**

### **7.6.1 Potable Water**

An adequate supply of drinking water will be supplied from sources approved by Federal, State, or local health authorities. Drinking water will be dispensed by means, which prevent contamination between the consumer and source. Approved potable water systems will only be used for the distribution of drinking water.

### **7.6.2 Non-Potable Water**

Outlets for non-potable water, such as water for fire-fighting purposes, will be identified to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes. Non-potable water will be conspicuously posted: "CAUTION -- WATER UNFIT FOR

DRINKING.” There will be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

### **7.6.3 Toilets**

One toilet per 20 work site personnel will be provided at the job site and within 5 minutes walking distance in accordance with OSHA requirements. Each toilet will be equipped with a metal, plastic, or porcelain urinal trough and hand washing facilities. Toilets will be so constructed that the occupants will be protected against weather and falling objects. All cracks will be sealed and the door will be tight-fitting, self-closing and latchable. Seat boxes will be vented to the outside (minimum vent size four inches inside diameter) with vent intake located one inch below the seat. Toilets will be constructed so that the interior is lighted. Adequate ventilation will be provided and all windows and vents screened. Provisions for routinely servicing and cleaning all toilets and disposing of the sewage will be established through a contracted source.

### **7.6.4 Washing Facilities**

Washing facilities will be provided onsite to maintain healthful and sanitary conditions. The washing facility will be maintained in a sanitary condition and provided with water, soap, individual means of drying, and covered receptacles for waste. An eye wash station will be provided at the work site.

## **7.7 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN**

The work will be performed without damage or contamination of adjacent work or surrounding areas. Where such work or surrounding area is damaged or contaminated it will be restored to its original condition and decontaminated at no additional expense to the client as deemed appropriate by the Project Manager. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated, work may proceed.

## **7.8 MACHINERY AND MECHANIZED EQUIPMENT**

Before any machinery or mechanized equipment is placed in use, the contractor is responsible for the inspection and testing by a competent person and certified to be in safe operating condition. Inspections and tests will be in accordance with manufacturer's recommendations and will be documented in the daily logs. Records of tests and inspections will be maintained at the site, and will be made available upon request of the designated authority.

Daily/shift inspections and tests:

- All machinery and equipment will be inspected daily (when in use) to ensure safe operating conditions. The Site Superintendent will designate competent persons to conduct the inspections. These inspections will be documented and incorporated into the field logs.

- Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition and that all required safety devices are in place and functional.

Whenever any machinery or equipment is found to be unsafe, or whenever a deficiency, which affects the safe operation of equipment, is observed, the equipment will be tagged and immediately taken out of service until the unsafe condition(s) have been corrected. The tag will indicate the equipment will not be operated. The tag will not be removed and will be placed in a conspicuous location on the equipment. The tag will remain in its attached location until it is demonstrated to the individual dead lining the equipment that it is safe to operate. When corrections are complete, the machinery or equipment will be re-tested and re-inspected prior to being returned to service.

Machinery and mechanized equipment will be operated only by designated qualified personnel. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded. Getting off or on any equipment where it is in motion is prohibited. Machinery and equipment will be operated in accordance with the manufacturer's instructions and recommendations. Inspections or determinations of road conditions and structures will be made in advance to assure that clearances and load capacities are safe for the passage or placing of any machinery or equipment.

Mobile equipment, operating within an off-highway job site not open to public traffic, will have a service brake system and a parking brake system capable of stopping and holding the equipment while fully loaded on the grade of operation. In addition, it is recommended that heavy-duty hauling equipment have an emergency brake system, which will automatically stop the equipment upon failure of the service brake system. This emergency brake system should be manually operable from the driver's position.

Preventive maintenance procedures recommended by the manufacturer will be followed. All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or maintenance is being done. Equipment designed to be serviced while running are exempt from this requirement. All repairs on machinery or equipment will be made at a location, which will protect repair personnel from traffic. Heavy machinery, equipment, or parts thereof which are suspended or held apart by slings, hoist, or jacks also will be substantially blocked or cribbed before personnel are permitted to work underneath or between them. Only, authorized factory trained personnel shall do repairs to heavy equipment. Routine daily lubrication, fueling, etc. shall be conducted by the operator.

All vehicles which will be parked or moving slower than normal traffic on haul roads will have a yellow flashing light or four-way flashers visible from all directions.

All industrial trucks will meet the requirements of design, construction, stability, inspection, testing, maintenance, and operation, defined in ANSI/ASME B56.1, Safety Standards for Low Lift and High Lift Trucks.

Self-propelled construction equipment, whether moving alone or in combination, will be equipped with a reverse signal alarm. Equipment designed and operated so that the operator is always facing the direction of motion does not require a reverse signal alarm. Reverse signal alarms will be audible and sufficiently distinct to be heard under prevailing conditions. Alarms will operate automatically upon commencement of backward motion. Alarms may be continuous or intermittent (not to exceed 3-second intervals) and will operate during the entire backward movement. Reverse signal alarms will be in addition to requirements for signal persons. A warning device or signal-person will be provided where there is danger to persons from moving equipment, swinging loads, buckets, booms, etc.

All belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating or moving parts of equipment will be guarded when exposed to contact by persons or when they otherwise create a hazard. All hot surfaces of equipment, including exhaust pipes or other lines, will be guarded or insulated to prevent injury and fire. All equipment having a charging skip will be provided with guards on both sides and open end of the skip area to prevent persons from walking under the skip while it is elevated. Platforms, foot walks, steps, handholds, guardrails, and toe boards will be designed, constructed, and installed on machinery and equipment to provide safe footing and access. Equipment will be provided with suitable working surfaces of platforms, guard rails, and hand grabs when attendants or other employees are required to ride for operating purposes outside the operator's cab or compartment. Platforms and steps will be of nonskid material. Substantial overhead protection will be provided for the operators of forklifts and similar material handling equipment.

Fuel tanks, if any, will be located in a manner, which will not allow spills or overflows to run onto engine, exhaust, or electrical equipment. Exhaust or discharges from equipment will be so directed that they do not endanger persons or obstruct view of operator.

All points requiring lubrication during operation will have fittings so located or guarded to be accessible without hazardous exposure.

## **7.9    CONFINED SPACE OPERATIONS**

All work will be performed at or above current grades at the site. No work within trenches or other confined spaces will occur during the course of the proposed project.

## **7.10   SITE ILLUMINATION**

All work will be performed during daylight hours. No work will be performed within structures. No special illumination devices will be necessary to perform the proposed scope of work. Vehicular headlights will be required in the event that vehicular transport operations are required outside of daylight hours or during times of limited visibility (i.e. fog, rain). Additionally site workers will be required to use vehicular headlights in accordance with State of California motor vehicle laws during onsite or offsite transport.

## **8.0 SITE CONTROL MEASURES**

All employees and personnel entering the site during soil removal work will be required to report to the Site Safety Officer and sign in and out on the site control log. In addition, all workers will be required to complete the worker/visitor acknowledgment form informing them of the potential hazards onsite. Copies of both the site control log and the worker/visitor acknowledgment form are presented in Attachments F and G. The purpose of the site control measures is to prevent the spread of contamination, control the flow of personnel, vehicles, and materials into and out of work areas. Procedures for preventing the spread of contamination include maintaining a site control log, developing a communications program, and implementing site security measures are presented below.

### **8.1 SITE CONTROL LOG**

ENGEO will maintain documentation of sign-in/out forms, employee training records, PPE use and applicable medical surveillance records. In addition, any unsafe conditions present or work practices that have been identified and action taken to correct the identified unsafe conditions and work practices will be identified by the SSO and documented on the site control log. Record keeping will be performed in accordance with the following.

ENGEO will maintain logs and reports covering the implementation of the HASP. If necessary the format will include training logs and bi-weekly reports. The training log will include the following information for both initial training and refresher training sessions:

- Date and place.
- Area (specific zone) checked.
- Employees in a particular area.
- Equipment being utilized by employees named.
- Protective clothing being worn by employees named.
- Protective devices being used by employees named and area assignment.

Should this project be extended, the bi-weekly reports will include the following information:

- Summary sheet covering the range of work being done.
- Any incidents of nonuse of protective devices in an area where required, nonuse of protective clothing, disregard of buddy system, violation of eating, smoking, and chewing in prohibited areas, instances of job-related injuries and illness, and monitoring results.
- Copies of medical certificates for employees and the waivers of visitors.

## **8.2 DECONTAMINATION**

### **8.2.1 Personnel**

Decontamination will consist of the removal or disposal of protective coverings (i.e. gloves, coveralls) and washing of skin surfaces that may have been exposed or soiled during operations. Additionally, all onsite personnel will be required to wash hands or any other potentially exposed or soiled skin surface prior to breaks, leaving the site, and at the end of daily operations.

### **8.2.2 Equipment**

Equipment, including but not limited to, excavators, backhoes and loaders will have visible soil deposits removed prior to equipment being transported offsite.

## **9.0 EMERGENCY EQUIPMENT**

The following items, at a minimum, will be maintained onsite and available for immediate use:

- First aid equipment and supplies.
- Emergency eyewashes which comply with ANSI Z358.1 will be located near the work areas.
- Fire extinguishers with a minimum rating of 5-A, B, or C will be carried in all vehicles and heavy equipment. Fire extinguishers will also be available at any site where flammables or combustible materials present a fire risk.
- Spill response kit.

## **10.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES**

### **10.1 PRE-EMERGENCY PLANNING**

Emergency response agencies will be contacted, and notified of upcoming site activities and potential emergency situations. The capabilities and commitment of the local agencies will be ascertained and obtained. ENGEO will verify that this Emergency Response Plan is compatible and integrated with disaster, fire, and emergency response plans of the local, state, and federal agencies.

### **10.2 LINES OF AUTHORITY**

The HSM and SSO are responsible for overall site safety. In the case of a site safety concern, emergency or accident, the SSO should be contacted immediately. Upon notification, the SSO will make appropriate decision regarding the incident

### **10.3 EMERGENCY RECOGNITION AND PREVENTION**

The recognition and prevention of hazards and potential emergencies are discussed in detail elsewhere in this plan. In general, emergency situations occur when personnel are seriously injured and require first aid or hazardous or potentially hazardous materials are spilled or released to the environment. Attachment E provides a checklist for critical information and procedures in cases of emergency.

### **10.4 PROCEDURES FOR SITE EVACUATION**

#### **10.4.1 Emergency Equipment**

The following items, as a minimum will be immediately available for onsite use:

- First aid equipment and supplies
- Spill control materials and equipment
- Fire extinguishers
- Telephone

#### **10.4.2 Adverse Weather Conditions**

In the event of adverse weather conditions, the SSO will assess if work can continue without sacrificing the health and safety of any field workers. Items to be considered prior to assessing if work should continue include:

- Potential for heat stress and heat-related injuries
- Limited visibility
- Potential for electrical storms
- Potential for high winds resulting in contaminant transport

#### **10.4.3 Earthquakes**

This guidance assumes that personnel will be outdoors. In the event of a major earthquake:

- Field personnel should immediately evacuate any trenches, excavations or elevated positions in machinery, heavy equipment or structures.
- Field personnel should move away from structures or overhead electrical transmission poles and wires or any other objects or structures that might topple over or collapse.
- Personnel should move to an area where there is the least chance of something falling from above.



- Personnel should assume a position of low center of gravity to avoid being thrown or falling to the ground. A position on “all fours” can minimize shaking.
- Personnel should remain alert for rolling or traveling objects to avoid injury.
- The buddy system shall be maintained in the event of earthquake.

#### **10.4.4 Evacuation Routes and Places of Refuge**

Prior to access into the work areas and during soil removal work, workers will be instructed as to designated evacuation routes and procedures. A route map detailing directions to the emergency medical facility will be posted conspicuously at the job site. Additionally, each support vehicle should be equipped with copies of this map and each driver should be familiar with the route and travel time to that facility. A copy of the hospital route map is included as Attachment G.

Workers will be instructed during the preliminary and subsequent tailgate meetings to proceed away from the hazard in a direction of 90° to the prevailing wind for at least 50 feet prior to heading up wind of the hazard should an emergency evacuation occur. A place of refuge will be identified. The purpose of the place of refuge is to provide an offsite meeting place in the event that site evacuation is required. The actual place of refuge will be determined during the weekly onsite safety meetings.

#### **10.4.5 Site Security and Control**

Areas onsite where hazardous substances are known to exist will be secured through demarcation tape and warning signs. Access to the work area will be restricted, and all personnel (regardless of status) requesting entry the work area will be required to report to the site safety officer and sign in on the site control log. All visitors will be briefed onsite-specific safety and health issues. The gated site will be kept closed and locked during hours of non-operation.

### **10.5 NEAREST HOSPITAL**

The nearest hospital is located in Oakland, approximately one mile from the project site. Attachment F provide a map and directions to the nearest hospital. The address and telephone numbers are as follows:

Oakland Medical Center  
3600 Broadway  
Oakland  
Ph.: 510-752-1000

## **10.6 EMERGENCY ALERTING AND RESPONSE PROCEDURES**

### **10.6.1 Emergency Alerting Procedures**

If physical injury or illness due to accidental exposure to hazardous materials or waste occurs, uninjured/unaffected personnel should do the following:

- Evacuate all non-essential personnel.
- Remove injured/exposed person(s) from the work zone.
- Remove protective gear from injured/exposed person(s).
- Decontaminate exposed person(s).
- Render first aid if necessary.
  
- **Call 911.**
  
- *If medical assistance is urgent, decontamination of the victim may not be practical or required.*
  
- Evacuate other onsite personnel to a safe place until the SSO determines that it is safe to resume work.
  
- The senior person present will notify the SSO and superintendent and advise them of the incident and the steps taken to prevent recurrence.
- Submit a written report on the incident to the contracting officer or representative within 24 hours. The report will be made part of the final closure file.
  
- Accident reporting records and investigative reports will be maintained at the site office and ENGEO's corporate office as part of the Department of Labor record keeping requirements.

Following any emergency response, an evaluation of procedures will be performed. The evaluation should include cause and proposed remedy for subsequent incident prevention. Should an emergency situation develop the site superintendent will notify work site personnel by hand held radio. Work activities shall be stopped if necessary.

### **10.6.2 Emergency Telephone Numbers**

The universal emergency response number is 911. When 911 is dialed, a public safety answering service will ascertain the type of assistance needed and quickly summon the appropriate emergency service (Fire Department, Police Department, emergency medical or paramedics, ambulance, etc.) to the site. A complete listing of emergency telephone numbers for project personnel is provided In Table 10.6.2-1 below.

**TABLE 10.6.2-1**  
**Emergency Contact Telephone Numbers**

<b>Name</b>	<b>Telephone number</b>	<b>Alternate Number</b>
National Emergency Response Center	1-800-424-8802	
Alameda County Environmental Health Department	510-567-6700	
National Poison Control	1-800-876-4766	
Oakland Police Department	510-777-3333	911
Oakland Fire Department	510-238-3856	911
Project Manager, Shawn Munger	916-416-9000	925-866-9000
Health and Safety Manager, Divya Bhargava	925-395-2559	650-804-2402
Site Safety Officer , Robert Peck	925-570-8110	

## **10.7 COMMUNITY ALERT PROGRAM**

The universal emergency response number is 911. When 911 is dialed, a public safety answering service will ascertain the type of assistance needed and quickly summon the appropriate local and/or municipal emergency service (Fire Department, Police Department, emergency medical or paramedics, ambulance, etc.) to the site.

## **10.8 PROCEDURES FOR INCIDENT REPORTING**

In the event that an incident such as an explosion or fire, or a spill or release of toxic material occurs during the course of the project, the appropriate government agencies will immediately notified. ENGEO will notify Cal/OSHA, EPA, and the contractor/subcontractor supervisor(s). A written notification shall be forwarded to the contracting officer within 24 hours. The report should include the following items:

- Name, organization, telephone number, and location.
- Name and title of the person(s) reporting.
- Date and time of the incident.
- Location of the incident, i.e. site location, facility name.
- Brief summary of the incident giving pertinent details including type of operation ongoing at the time of the incident.
- Cause of the incident, if known.
- Casualties (fatalities, disabling injuries).

- Details of any existing chemical hazard or contamination.
- Estimated property damage, if applicable.
- Nature of damage, effect on contract schedule.

## **11.0 CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGMENT**

A copy of a certificate of worker/visitor acknowledgment will be completed and submitted for each visitor allowed to enter the work site during soil removal work.

## **12.0 REPORTING**

### **12.1 LOGS, REPORTS, AND RECORDKEEPING**

The following logs, reports, and records will be developed, retained, and submitted to the contracting officer when requested:

- Training logs (site specific and visitor)
- Daily inspection logs
- Equipment Safety and Maintenance Logs
- Employee/visitor register (Site Control Log)
- Environmental and personal exposure monitoring/sampling results

**ATTACHMENT A**  
**ACCIDENT/INJURY/ILLNESS INVESTIGATION**

Job Site: \_\_\_\_\_

*Please Print - complete all items - submit immediately*

PART I – SUPERVISOR			
Employee	Employee #	Phone # ( )	
Address	City	State	Zip
Date of Birth / /	Age	Sex	Social Security #
Shift <input type="checkbox"/> Day <input type="checkbox"/> Evening <input type="checkbox"/> Night	Date of Hire / /	Occupation	
Date of Injury / /	Time of Injury	: AM	: PM
Location of Incident			
Date Reported / /	Time Reported	Reported to Whom?	

PART II - SUPERVISOR			
(1) Was employee given First-Aid?	Yes <input type="checkbox"/> No <input type="checkbox"/>	(3) Was Employee Placed on	Yes <input type="checkbox"/> No <input type="checkbox"/>
(2) Sent to: Emergency Room	Yes <input type="checkbox"/> No <input type="checkbox"/>	Transitional Duty?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Preferred Provider	Yes <input type="checkbox"/> No <input type="checkbox"/>	(4) Will Employee lose time/work?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Personal Physician	Yes <input type="checkbox"/> No <input type="checkbox"/>	(5) If lost time, approx. days _____	
Company Nurse	Yes <input type="checkbox"/> No <input type="checkbox"/>	(6) Was treatment refused?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other	Yes <input type="checkbox"/> No <input type="checkbox"/>		
Name & Address of Clinic	Phone number of clinic		

*Attach statement of all witnesses*

PART III – SUPERVISOR		
Name of Witness	Address	Phone
(1)		
(2)		
Describe in detail what employee was doing at the time of injury (what, how why)		
Did employee wear protective equipment? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, specify		

*Part of body (check) indicate right or left when applicable*

1 <input type="checkbox"/> Head	5 <input type="checkbox"/> Mouth	9 <input type="checkbox"/> Arm	13 <input type="checkbox"/> Knee	17 <input type="checkbox"/> Toe	21 <input type="checkbox"/> Groin
2 <input type="checkbox"/> Face	6 <input type="checkbox"/> Heart	10 <input type="checkbox"/> Wrist	14 <input type="checkbox"/> Leg	18 <input type="checkbox"/> Hip	22 <input type="checkbox"/> None
3 <input type="checkbox"/> Eye	7 <input type="checkbox"/> Back	11 <input type="checkbox"/> Hand	15 <input type="checkbox"/> Ankle	19 <input type="checkbox"/> Neck	23- <input type="checkbox"/> other _____
4 <input type="checkbox"/> Ear	8 <input type="checkbox"/> Trunk	12 <input type="checkbox"/> Finger	16 <input type="checkbox"/> Foot	20 <input type="checkbox"/> Shoulder	

*Type of injury (check)*

1 <input type="checkbox"/> Reaction to foreign substances/objects	6 <input type="checkbox"/> Fracture
2 <input type="checkbox"/> Puncture	7 <input type="checkbox"/> Amputation
3 <input type="checkbox"/> Laceration	8 <input type="checkbox"/> Sprain/Strain
4 <input type="checkbox"/> Contusion	9 <input type="checkbox"/> Other
5 <input type="checkbox"/> Burn	

What type of training has been conducted to prevent recurrence?

Describe what acts or conditions may have contributed to the incident. (Analyze all the facts concerned. If either the injured person, a machine or other physical condition was involved, find out How. Use the Possible Worker's Compensation Accident Causes on the back of this form to complete this section.)

Corrective Action(s) taken:


Investigated by: \_\_\_\_\_ Date: \_\_\_\_\_

PART IV - MANAGEMENT REVIEW	
Are you satisfied with your review of Part I-III that the accident has been thoroughly investigated? <input type="checkbox"/> Yes <input type="checkbox"/> No If NO, return for a more detailed report.	
As a result of your review, have you identified any additional reasons why the accident occurred: <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, list the reasons:	
Corrective action(s) you are taking?	
Who have you made responsible for corrections?	
Signature of Superintendent	Date:
Manager Comments	

As a result of the Foreman's investigations and my comments above, I am satisfied that the accident has been thoroughly investigated. Corrective actions will be personally followed up by me until complete.

Signature of Manager \_\_\_\_\_ Date: \_\_\_\_\_

### POSSIBLE WORKER'S COMPENSATION ACCIDENT CAUSES

UNSAFE ACT - PERSONAL FACTORS	UNSAFE CONDITION
Making safety devices inoperable	Inadequate guards or protection
Failure to use guards provided	Defective tools or equipment
Using defective equipment	Unsafe condition of machine
Servicing equipment in motion	Congested work area
Failure to use proper tools or equipment	Poor housekeeping
Operating machinery or equipment at unsafe speed	Unsafe floors, ramps, stairways, platforms
Failure to use personal protective equipment	Improper material storage
Operating without authority	Inadequate warning system
Lack of skill or knowledge	Fire or explosion hazards
Unsafe loading or placing	Hazardous atmosphere: gases, dust, fumes, vapors
Improper lifting, lowering or carrying	Hazardous substances
Taking unsafe position	Inadequate ventilation
Unnecessary haste	Radiation exposures
Influence of alcohol or drugs	Excessive noise
Physical limitation or mental attitude	Inadequate lighting
Unaware of hazards	
Unsafe act or other	

THE PURPOSE OF THIS INVESTIGATION FORM IS NOT TO PLACE FAULT OR BLAME. ITS PURPOSE IS TO INVESTIGATE ALL POSSIBLE CAUSES OF THE ACCIDENT TO TAKE NECESSARY CORRECTIVE ACTIONS AND CONTINUALLY IMPROVE PROJECT SAFETY.



**ATTACHMENT C**

Employee Training Forms  
And  
Certifications

**To be Provided upon Selection of Contractor**



**ATTACHMENT D**

Worker/ Visitor Entry and Exit Control Log

Name	Date	Time	In	Out

SSO Signature \_\_\_\_\_ Date \_\_\_\_\_

**ATTACHMENT E**  
**JOB SITE EMERGENCY PROCEDURES**

Job Site: \_\_\_\_\_ Date: \_\_\_\_\_

**EMERGENCY TELEPHONE NUMBERS:**

FIRE \_\_\_\_\_  
POLICE \_\_\_\_\_  
AMBULANCE \_\_\_\_\_  
HOSPITAL \_\_\_\_\_

**IN CASE OF FIRE:**

- exit the site using the evacuation route
- call the fire department
- go immediately to the assembly point

**EVACUATION ROUTE:**

\_\_\_\_\_  
\_\_\_\_\_

**ASSEMBLY POINT:** \_\_\_\_\_

**IN CASE OF SERIOUS INJURY:**

- immediately contact first aid trained personnel
- call for medical assistance

Job site first aid trained personnel:

\_\_\_\_\_  
\_\_\_\_\_

Trained personnel will take immediate charge of the emergency situation. (Supervision to perform accident investigation)

***In case of natural disaster: (check)***

- Tornado: Seek inside shelter, preferably underground. Stay away from windows. If outside, move away from the tornado's path at a right angle, or lie flat in a ditch or ravine
- Earthquake: Evacuate the building and go directly to the designated assembly point for instructions.
- Other: \_\_\_\_\_

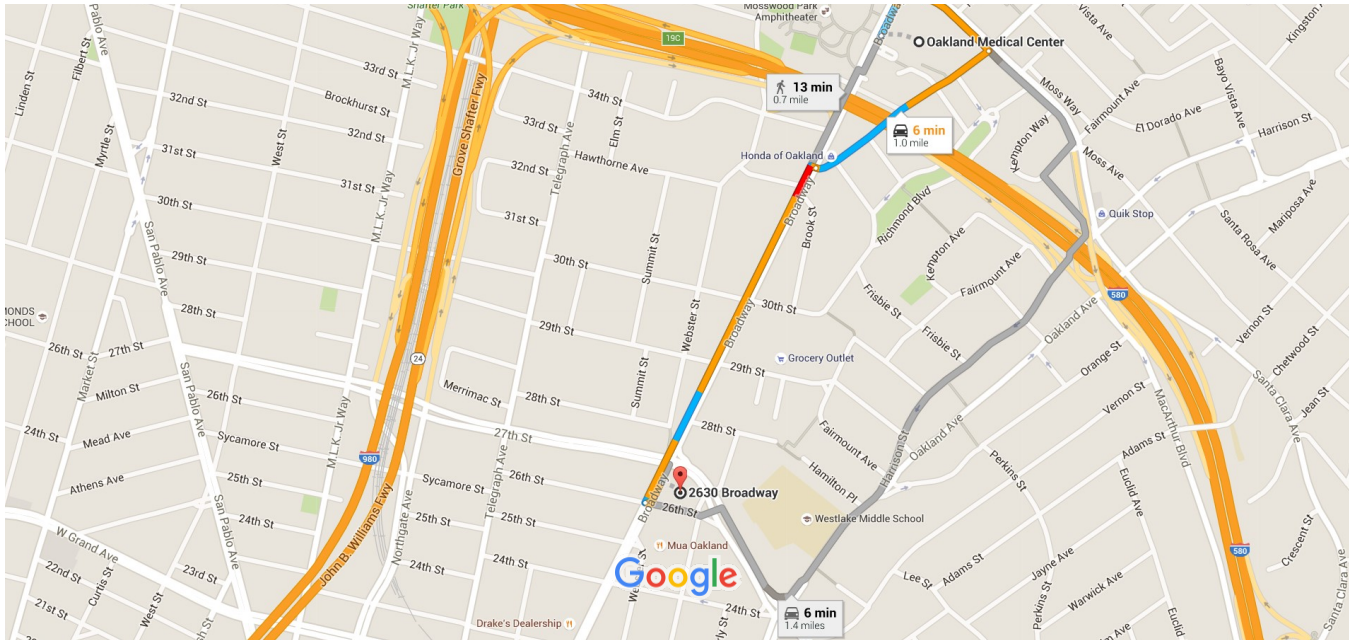
**ATTACHMENT F**

Hospital Map



Oakland Medical Center to 2630 Broadway,  
Oakland, CA 94612

Drive 1.0 mile, 6 min



Map data ©2016 Google 500 ft

## Oakland Medical Center

3600 Broadway, Oakland, CA 94611

- ↑ 1. Head northeast on Broadway toward W MacArthur Blvd  


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361 ft
- ↘ 2. Turn right at the 1st cross street onto W MacArthur Blvd  


---

0.1 mi
- ↘ 3. Turn right onto Piedmont Ave  


---

0.3 mi
- ↶ 4. Use any lane to turn left onto Broadway  


---

0.5 mi
- ↶ 5. Make a U-turn at 26th St  
i Destination will be on the right  


---

197 ft

## 2630 Broadway

Oakland, CA 94612

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the

map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

## Google Maps