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Alameda County  
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# **SOIL AND GROUNDWATER INVESTIGATION WORK PLAN**

**2520 BLANDING AVENUE  
ALAMEDA, CALIFORNIA 94501**  
Alameda County Fuel Leak Case No. RO3065  
Geo Tracker Global ID No. T1000002455

*Prepared for:*

**P.J. Smith Family Trust**

*Prepared by:*

**PACIFIC ENGINEERING AND CONSTRUCTION, INC.  
35 STILLMAN STREET, SUITE 126  
SAN FRANCISCO, CALIFORNIA 94107**

**July 24, 2012**

## **PACIFIC ENGINEERING & CONSTRUCTION, INC.**

### ***Consulting Engineers & Contractors***

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July 24, 2012

Karel Detterman, PE  
Division Chief  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

Subject: Soil & Groundwater Investigation Work Plan  
2520 Blanding Avenue, Alameda, California

Dear Ms. Detterman:

Pacific Engineering and Construction, Inc (PECI) is pleased to present this Soil & Groundwater Investigation Work Plan for the site at 2520 Blanding Avenue, Alameda, CA. PECI is providing this report to the Alameda County Environmental Health Department on behalf of the property P.J. Smith, who is a trustee of the P.J Smith Family Trust that owns the property.

Please contact the undersigned at (415) 974-1853 if you have any questions.

Sincerely,



A. Mark Waldman, P.E.  
Principal

cc: Mr. P.J. Smith

July 24, 2012

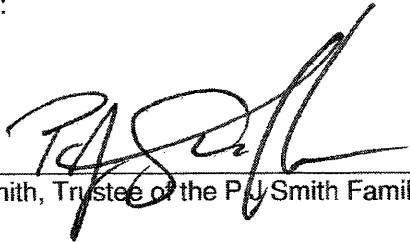
Karel Detterman, PE  
Division Chief  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

Subject: Soil & Groundwater Investigation Work Plan  
2520 Blanding Avenue, Alameda, California

Dear Ms. Detterman:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report is true and correct to the best of my knowledge.

Signed:

A handwritten signature in black ink, appearing to read 'P.J. Smith', written over a horizontal line.

P.J. Smith, Trustee of the P.J. Smith Family Trust

# SOIL AND GROUNDWATER INVESTIGATION WORK PLAN

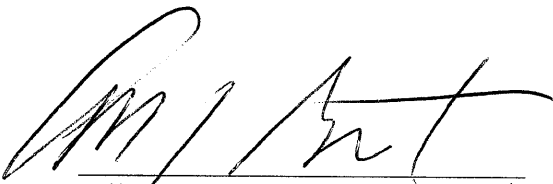
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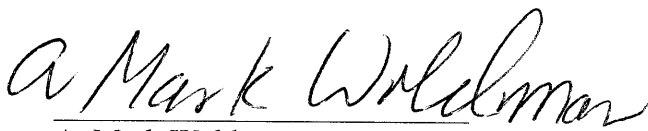
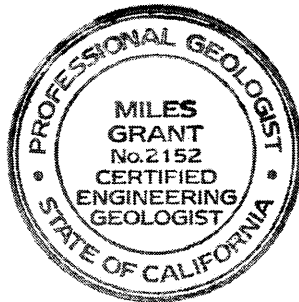
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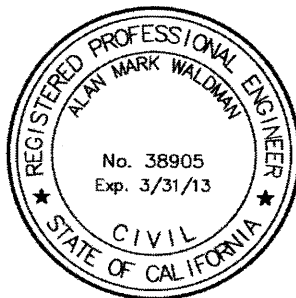
July 24, 2012



Miles Grant, C.E.G  
Project Geologist



A. Mark Waldman, P.E.  
Principal



## TABLE OF CONTENTS

	<b>Page</b>
Introduction.....	1
Background .....	1
Previous Investigations.....	2
Regulatory Considerations.....	2
Purpose and Scope .....	3
Pre-Field Activities .....	4
Soil Boring and Sampling.....	4
Schedule.....	5
References .....	5
Limitations .....	5

### FIGURES

- 1 – Site Location Plan
- 2 – Soil Boring Location

## **INTRODUCTION**

The PJ Family Trust, which is managed by Mr. PJ Smith, owns and operates a facility located at 2520 Blanding Avenue in Alameda, California. The current use of the site is light construction (construction of kitchen cabinets).

The site is shown on the Site Location Plan, Figure 1. The site is located in the northeastern part of the City of Alameda. A tidal canal connecting to the San Francisco Bay estuary lies approximately 390 feet to the north-northeast of the Site. The elevation of the site is approximately 9 to 10 feet according to the Oakland-East California Quadrangle map. The site is rectangular measuring approximately 148 feet in length and approximately 48 feet in width. The long access of the site trends N 33 West, or 33 degrees to the west of North. The site is accessed from Blanding Avenue, which lies along the northwest site boundary.

A 550 gallon gasoline underground storage tank (UST) was removed from the site between 1982 and 1984. Two investigations have previously been performed at this site. The first was performed by Olson Environmental, Inc. in November 2009, and the second was performed by Pacific Engineering and Construction, Inc. (PECI) in September 2011. Following review of the information provided in these reports, on May 2, 2012 the Alameda County Health Care Services Agency issued a request for a Soil and Groundwater Investigation Work Plan to provide more analytical detail at the site in order to develop a plan of action for site closure.

## **BACKGROUND**

A Phase 1 Environmental Site Assessment (ESA) for the Site was performed by Olson Environmental, Inc. (OEI) on October 21, 2009 (OEI, 2009a). The Phase 1 ESA indicated that according to the City of Alameda Fire Department, a 550-gallon gasoline underground storage tank (UST) was installed on the Property approximately in the year of 1931. Records were not available regarding the removal of the UST. According to the owner the UST was formerly located along the southeast property line of the Site, four feet below the existing unpaved portion of the driveway. The Owner stated that the UST was removed sometime between 1982 and 1984.

According to the foregoing information, a 550-gallon gasoline UST was in existence at the Site from approximately 1931 to between 1982 and 1984. Based upon the Site inspection, OEI (2009a) recommended that soil borings be advanced to collect soil and groundwater samples to determine whether potential leaks from the former operations have affected subsurface environmental conditions.

Historical records indicate the Site was first developed on or before 1897 as residential housing. In 1925, the current existing single story structure was constructed. City Directories show that the Site operated as Home Ice Fuel & Supply Company from approximately 1933 to 1945. In 1950, City Directories list the Site as Home Ice & Supply Company until 1962. In 1950, Auto and Storage is listed for the Site on the Sanborn Fire Insurance Map. Building Department records indicate Magic Garden Products operated on the Site from approximately 1965 to 1970. Although the City Directories list Mr. P.J. Smith as the owner from 1980 until 2000, Mr. P.J. Smith still owns the site. The current owner, Mr. Philip Smith, says that he purchased the Site in 1970. The Site is currently operated as a business called "P.J. Smith Kustom Kitchens". Since 1970, Mr. Smith has leased a portion of the Site to numerous tenants including Pacific Car Company (1996), Burleigh Computing (1996 thru 2000), Mark Schmidt Builders, Western Painting, and Kerry and Chris Smith Construction (current tenants).

## **PREVIOUS INVESTIGATIONS**

Following the recommendation contained in the Phase I report (OEI, 2009a), in November of 2009 OEI was retained by the Owner to conduct a limited soil and groundwater investigation at the Site to determine if historical onsite usage of hazardous materials, including possible release from the former UST, had impacted the subject property. This study (OEI, 2009b) concluded that there are low levels (levels below the applicable Environmental Screening Level (ESLs)) of hydrocarbon contamination in soil samples that were taken at a depth of 7 feet in the area where the UST was removed. No contamination was detected in soil samples lying 10 and 13 feet to the north-northeast (presumably and down gradient) from the contaminated area.

Grab groundwater samples in the OEI, 2009b study exhibited concentrations of gasoline, diesel, and motor oil that were above the ESLs, and low levels of volatile hydrocarbon constituents that were below the ESLs. Groundwater was first encountered at depths of 6 to 7.5 feet bgs in this study.

During the OEI, 2009b study, a possible aquitard was encountered at a depth of 6 to 8 feet. Serious consideration should be made regarding the installation of a groundwater monitoring well that would penetrate this layer and thus expose deeper aquifers to any contamination that may be present in the groundwater at the Site.

A Supplemental Groundwater Investigation was conducted in September 2011 (PECI 2011). In the case of this study, soil samples were not analyzed due to the fact that the soil contamination was at low levels (levels below the applicable ESLs) in the OEI, 2009b study.

In the 2011 study, grab groundwater samples were recovered from locations that were very close sample locations in the 2009 study that were down gradient from the assumed ground flow direction. Analytical results from the SB1 sample location (Sample SB1-2) showed that the concentration of gasoline decreased to a non-detectable level, the concentration of diesel decreased to 100 µg/L, and the concentration of motor oil decreased to 150 µg/L. Therefore, the 2011 study showed that the concentrations of diesel and motor oil are now below the applicable ESLs.

In the 2011 study, analytical results of groundwater samples in two borings that were 11 and 14 feet to the north-northeast and down gradient from SB1 (SB2-2 and SB3-2) did not contain any petroleum hydrocarbons above the reporting limits.

In the 2011 study, analytical results from the OEI, 2009b study show that Chemicals of Concern (COCs) in soil were below the Site ESLs, and analytical results from this study showed that COCs in the groundwater were below the Site ESLs. Therefore, the 2011 study showed that concentrations of soil and groundwater were below the Site ESLs.

In the 2011 study groundwater stabilized at 5.0 to 5.2 feet bgs prior to sampling.

## **REGULATORY CONSIDERATIONS**

The Applicable Relevant and Appropriate Regulations (ARARs) are discussed below, to provide a regulatory context for the interpretation of findings, and a discussion regarding regulatory site closure. The Site COCs have been identified as petroleum hydrocarbons and their associate volatile components.

The subject property is currently provided regulatory oversight by Alameda County Environmental Health (ACEH). To our knowledge, the ACEH will provide oversight through site regulatory closure.

Building zones for the subject site are established by the City of Alameda. According to the records that we reviewed the subject site is zoned as M-2, General Industrial.

The California Regional Water Quality Control Board (Water Board), San Francisco Bay Region (Water Board) published a study of land use in 1999 (Water Board, 1999). According to this study, the subject site is classified as Zone C. The Zone C classification states that groundwater at the site is "Neither Existing, Probable or Potential" with-respect-to use as drinking water.

The possible ARARs governing groundwater at the site are the Water Board and drinking water standards. The Water Board established environmental screening levels (ESLs) as conservative numerical standards for evaluating the likelihood of environmental impact (Water Board, 2008). ESLs are not cleanup criteria, however, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted. Significant exceedance of the ESLs suggests that additional investigation and/or remediation is warranted to demonstrate that there is no risk human health. Different ESLs are published for commercial/industrial vs. residential land use, whether or not groundwater is a potential source of drinking water, and whether or not the groundwater will be discharged into an existing or potential source for drinking water. The ESLs that are used for a site are determined using this criteria.

Since 1) the site is zoned as by The City of Alameda as "M-2 General Industrial", 2) groundwater is not an existing, probable or potential source of drinking water, according to the Water Board, and 3) the receiving body for groundwater discharge is an estuary (San Francisco Bay), which is not a drinking water source, in our professional opinion, the ARARs for the site are the Water Board ESLs (Water Board, 2008) and drinking water standards do not apply. Based on foregoing discussion, in our professional opinion the appropriate Water Board ESLs for the site Table B for soil and Table F1b for groundwater (Water Board, 2008).

## **PURPOSE AND SCOPE**

The purpose of the work proposed in this work plan is to characterize the limits of petroleum hydrocarbon constituents released from a former Underground Storage Tank at the site. The information from field work and analytical analysis proposed in this investigation will be used in conjunction with previous studies conducted at this site to characterize the horizontal and vertical extent of the concentrations of hydrocarbon constituents.

The scope of work for this work plan consists of the following activities:

- Advance approximately 4 borings using a hydraulic push drilling rig. The locations of the boring will be within or very close to the tank pit area where the UST was removed. The locations of the borings are shown in Figure 2, Soil Boring Location. The boring along the eastern property will probably be drilled with a hand auger in order to get as close to the property line as possible. Grab groundwater samples were collected from each borings that is drilled with the drilling rig.



- Two to four soil samples will be taken in each boring to analytically characterize the soil. Samples will be selected that will provide a vertical characterization of the COCs. Based on existing data, probable sample intervals will be 5, 7, and 9 feet.
- Soil and groundwater samples will be submitted to an analytical laboratory and analyzed for: TPH gasoline, diesel and oil range petroleum hydrocarbons, BTEX/MTBE using EPA Methods 8015B/8260B, and lead. All samples were submitted to a State Certified Laboratory using Chain of Custody Protocols.
- Evaluate the findings from the field activities, sample analyses, and prepare a report.

## **SOIL BORING AND SAMPLING**

Drilling activities will be conducted using a hydraulic push drilling rig. Prior to mobilization of the drilling rig on-site, all associated drilling and sampling equipment will be thoroughly cleaned in order to remove soil and all contaminants. The cleaning process consisted of high pressure steam cleaning of the drilling equipment and a high pressure hot water final rinse. Before drilling each boring, all drilling and sampling equipment was decontaminated using a steam cleaner. After drilling is completed in each boring, the equipment will be decontaminated by the same cleaning method.

Prior to boring at each location, the boring will be advanced with a hand auger to a depth of three feet to clear the boring of surficial underground utilities. Borings will then be advanced with a hydraulic push rig to the total depths of the borings.

Water and soil cuttings generated from the steam cleaning and spoils from the hand-auger operation will be placed in a properly labeled, sealed 55-gallon drum(s) for disposal at a later time.

Groundwater samples will be taken with a disposable bailer, and a new disposable bailer was used for each groundwater sampling event.

Due to the nature of the drilling operation (utilizing a hydraulic push rig) it is not possible to determine where groundwater will first be discovered. During the previous investigations (Olson 2009b) groundwater was first encountered between 6.0 and 7.5 feet, and groundwater stabilized at 5.0 to 5.2 feet bgs. Analytical samples will be placed in laboratory-supplied sample containers and stored in a cooler with wet ice.

All borings will be grouted using the tremie method following the completion of the drilling operation and all grouting operations will be observed by the Alameda County Public Works Agency.

## **PRE-FIELD ACTIVITIES**

The borings in this study were placed in close proximity to previous borings. These locations were cleared of being in close proximity to any underground utilities during the Olson investigation in November 2009 by Underground Service Alert (USA) (OEI, 2009b).

A drilling permit will be obtained from the Alameda County Public Works Agency.

## **SCHEDULE**

Following completion of this work plan a Soil and Groundwater Investigation report will be submitted within 90 days.

## **REFERENCES**

- Department of Toxic Substances Control (DTSC), 2004. Guidance Document for the Implementation of United States Environmental Protection Agency Method 5035: Methodologies for Collection, Preservation, Storage, and Preparation of Soils to be Analyzed for Volatile Organic Compounds. November.
- California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), 1999. East Bay Plains Beneficial Use Study, San Francisco Bay. June 15.
- California Regional Water Quality Control Board, San Francisco Bay Basin (Water Board), 2007. Water Quality Control Board (Basin Plan). January 18.
- California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, November 2007, Revised May 2008.
- Olson Environmental, Inc.(OEI) 2009a. Phase 1 Environmental Site Assessment, 2520 Blanding Avenue, Alameda, California, October 21, 2009.
- Olson Environmental, Inc. (OEI) 2009b. Limited Soil and Groundwater Investigation, 2520 Blanding Avenue, Alameda, California, November 25, 2009.
- Underground Storage Tank (UST) Program, Development of a Draft Low-Threat UST Closure Policy, July 14, 2011 (UST, 2011) Closure Policy, Available online at: [http://www.swrcb.ca.gov/ust/lt\\_cls\\_plcy.shtml](http://www.swrcb.ca.gov/ust/lt_cls_plcy.shtml) .

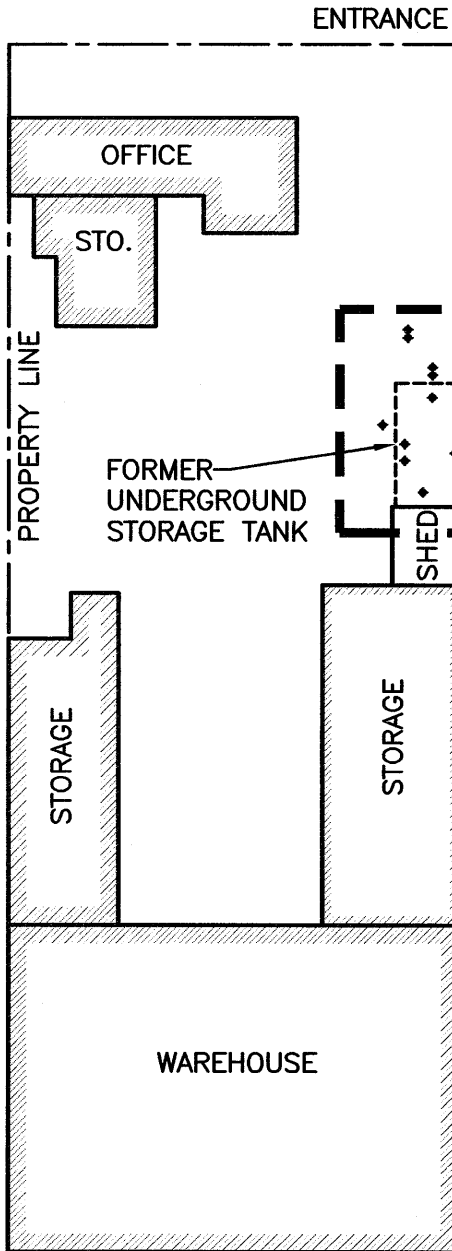
## **LIMITATIONS**

This report has been prepared by PECl according to the State and local agency suggested guidance documents for these investigations and in general accordance with the accepted standard of practice which exists in Northern California at the time the investigation was performed. The interpretations, conclusions and recommendations made herein are based upon the data and analysis for the soil and water samples collected on-site. PECl is not responsible for errors in laboratory analysis and reporting, or for information withheld during the course of the study. The purpose of this study is to screen for the presence of contaminants that may affect the use or value of the Site. As such, the evaluation of the geologic and environmental conditions on this site are made with very limited data. Judgements leading to conclusions are generally made with an incomplete knowledge of the conditions present. Additional conditions and materials could exist at the site that was not encountered during this investigation. No warranty or guarantee is expressed or implied therein.

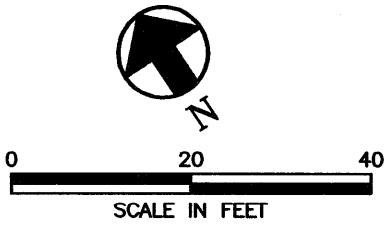
# Figures

1. Site Location Plan
2. Soil Boring Location

BLANDING AVENUE



SEE FIGURE 2 FOR ENLARGED PLAN



FIGURE

1

P: Pacific Engineering 2012 PEI 2012 Projects 2530 Blanding CAD Work Plan Site Location Plan.dwg 7/19/12 2:35pm angle

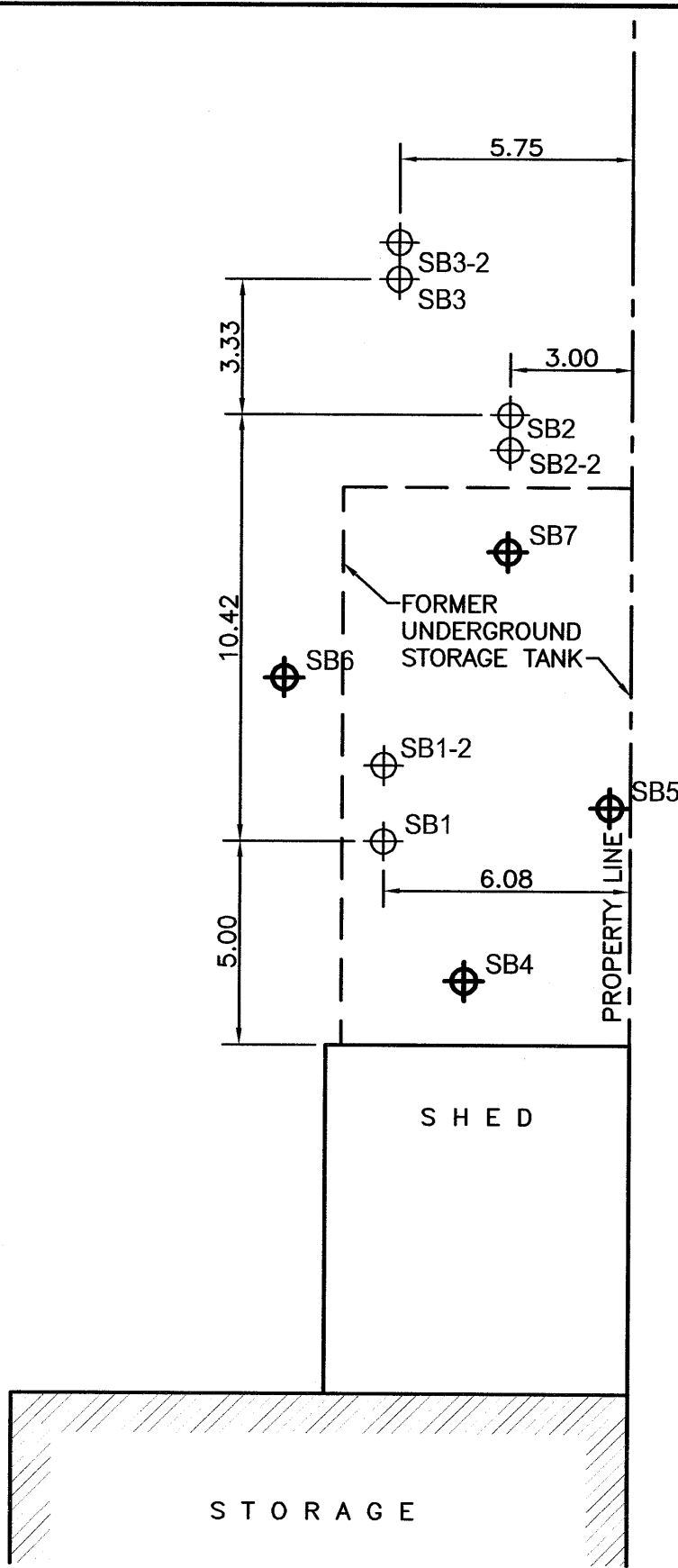


Pacific Engineering & Construction, Inc.  
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**SITE LOCATION PLAN**  
COMMERCIAL PROPERTY  
2530 BLANDING AVE., ALAMEDA, CA 94501

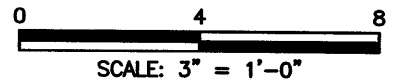
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AMA	MG		JULY 2012	



**EXPLANATION**

SB1 SOIL BORING  
SOIL BORING ID

SB1, SB2 & SB3 2009 BORINGS  
SB1-2, SB2-2 & SB3-2 2011 BORINGS  
SB4-SB7 PROPOSED BORINGS



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**SOIL BORING LOCATION**  
COMMERCIAL PROPERTY  
2530 BLANDING AVE., ALAMEDA, CA 94501

FIGURE

**2**

DRAWN AMA	DESIGN MG	APPROVED	DATE JULY 2012	REVISED DATE
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