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Alameda County Department of  
Environmental Health  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, CA 94502

Attention: Keith Nowell

Subject: Report of Soil and Groundwater Investigation  
3924 Market Street, Oakland, California  
**ACEH RO# 0000490; Global ID: T0600101187**

Ladies and Gentlemen:

Attached please find a copy of the *Report of Soil and Groundwater Investigation* prepared by Gribi Associates. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Very truly yours,



Scott Atthowe  
Scott C. Atthowe Trust  
3924 Market Street  
Oakland, CA 94608

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**REPORT OF SOIL AND GROUNDWATER  
INVESTIGATION**

**Former San Francisco French Bread UST Site  
3924 Market Street, Oakland, California  
ACDEH Fuel Leak Case: RO 0000490**

Prepared for:

Scott Atthowe  
Scott C. Atthow Trust  
3924 Market Street  
Oakland, CA 94608

December 30, 2013



**GEOLOGIC & ENVIRONMENTAL CONSULTING SERVICES**

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Ladies and Gentlemen:

Gribi Associates is pleased to submit this soil and groundwater investigation report on behalf of Mr. Scott Atthowe for the underground storage tank (UST) site located at 3924 Market Street, Oakland, California (Site). The soil and groundwater investigation included the drilling and sampling of nine soil borings, B-1 through B-9, on the Site. This goal of the investigation will be to further define the extent of heavy-range petroleum hydrocarbon impacts on the Site. This report also includes a Conceptual Site Model (CSM), as well as recommendations for a data gaps investigation.

We appreciate the opportunity to present this report for your review. Please call if you have any questions or require additional information.

Very truly yours,

A handwritten signature in black ink, appearing to read 'James E. Gribi', is written over a light blue circular stamp.

James E. Gribi  
Registered Geologist  
California No. 5843



JEG/ct

M:\Departments\Projects\Active Projects\Atthowe Fine Art\3924 Market St\2013 Soil Boring Investigation\Report Docs\Atthow SBI Report v1.wpd

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## EXECUTIVE SUMMARY

Gribi Associates is pleased to submit this soil boring investigation report on behalf of Mr. Scott Atthowe for the underground storage tank (UST) site located at 3924 Market Street, Oakland, California (Site). The soil and groundwater investigation included the drilling and sampling of nine soil borings, B-1 through B-9, on the Site. This goal of the investigation will be to further define the extent of heavy-range petroleum hydrocarbon impacts on the Site. This report also includes a Conceptual Site Model (CSM), as well as recommendations for a data gaps investigation.

Investigative borings B-1 through B-9 were drilled and sampled on November 21 and 22, 2013. All activities were conducted in accordance with applicable guidelines and statutes. Soils encountered in the borings were generally similar, consisting of dark grey to brown clays to approximately 14 feet in depth, followed by poorly sorted sands and silts to 20 feet, the total depth investigated.

### Results of Investigation

Slight to moderate hydrocarbon odors and staining were encountered in the sand layer below 14 feet in depth in borings B-1, B-3, B-4, and B-6. In boring B-2, located near the entrance to the covered loading dock, slight to moderate hydrocarbon odors and staining were encountered in clays from approximately eight feet to 14 feet in depth, and also in the uppermost sand from approximately 14 to 16 feet in depth. In boring B-5, located inside the covered loading dock area, slight hydrocarbon odors and staining were encountered from approximately four feet to 17 feet in depth. No significant hydrocarbon sheens were noted in water samples from any of the nine borings.

Slight to moderate concentrations (over 100 milligrams per kilogram, mg/kg) of TPH-D and TPH-MO were encountered in soil samples at about 15 feet depth in borings B-1, B-3, B-4, and B-6. Slight to moderate concentrations of TPH-D and TPH-MO were also encountered at about nine feet in depth in boring B-2. No detectable concentrations of Benzene were reported in any soil samples from the nine soil borings.

Moderate levels (over 1,000 micrograms per liter, ug/L) of TPH-D and TPH-MO were encountered in the grab groundwater samples from B-3 and B-4. Also, a moderate concentration (9,900 ug/L) of TPH-G was reported in the grab groundwater sample from boring B-4. No detectable concentrations of Benzene were reported in any of the groundwater samples from the nine soil borings.

### Conceptual Site Model

Based on this and previous investigative results, we posit the following conceptual site model (CSM) relative relative to hydrocarbon impacts identified in soil and groundwater beneath the Site. This CSM has been developed to assist in risk-based decision making. In developing the CSM, we have evaluated actual and potential contaminant sources, migratory pathways, and

environmental receptors. Note that this CSM is based on our understanding of currently-available data; where data is not available or is not representative, a data gap is noted.

- **Contaminants of Concern:** Contaminants of concern (COCs) identified in both soil and groundwater in investigative borings and monitoring wells on the Site are limited primarily to Total Petroleum Hydrocarbons as Diesel (TPH-D) and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO). Note that previous review of TPH-D/MO chromatograms for the hydrocarbon product in Site wells clearly demonstrates that the TPH-D and TPH-MO detections are related to a single heavy fuel oil (HFO) product in the C<sub>20</sub>-C<sub>40</sub> carbon range. HFO is relatively viscous and insoluble in groundwater, and would not be expected to contain significant amounts of lighter end hydrocarbon components.
- **Source of Contaminants:** Based on field and laboratory analytical results, the source of COCs appears to have been a fuel oil UST (or USTs) located in the vicinity of borings B-2 and B-5. Relative to potential secondary sources (residual soil contamination or free product), the relatively low soil and groundwater hydrocarbon impacts identified during this investigation do not indicate a significant secondary source, either in soil or groundwater. Further, it is clear from current and previous investigative results that the apparent free product present in Site wells MW-1, MW-2, and MW-3 represents residual (sorbed) product, and not mobile or migrating product. The apparent LNAPL in Site wells is clearly stable and incapable of migration. Also, as evidenced by the limited magnitude and extent of dissolved-phase hydrocarbon impacts, the apparent LNAPL has not acted as a secondary source for dissolved-phase hydrocarbon impacts in groundwater beneath the Site.
- **Nature and Extent of Impacts:** Soil hydrocarbon impacts are limited primarily to a fairly thin layer within the sand layer below 14 feet in depth. These soil hydrocarbon impacts extend at least 75 feet to the south-southwest beneath Market Street and towards 39<sup>th</sup> Street. The lateral extent of soil impact is not fully defined to the south. The groundwater hydrocarbon plume is smaller than the soil hydrocarbon plume, extending perhaps 20 to 25 feet west-southwest from the presumed source area. The limited extent of groundwater hydrocarbon impacts is clearly due to the nature of the contaminants, which have low solubility in groundwater. Given the configuration of relatively large soil hydrocarbon plume and small groundwater hydrocarbon plume, it appears likely that: (1) Releases associated with these plumes occurred many decades ago; (2) At the time of these releases, the fuel oil was more mobile (less viscous) and, as such, able to migrate laterally; (3) These hydrocarbons subsequently degraded over several decades, losing mobility and effectively “locking” them in place.
- **Fate and Transport of Impacts:** Given the assumed distant age of the release and the nature and extent of hydrocarbon impacts, we would not expect the current configuration of the soil and groundwater hydrocarbon plumes to change significantly, except to degrade slowly back towards the source. As evidenced by the relatively low dissolved phase groundwater hydrocarbon impacts (even in borings with moderate soil hydrocarbon impacts), it is clear that partitioning between residual (sorbed) phase and dissolved (groundwater) phase is very limited. There is no reasonable expectation that these conditions will change significantly in the future.

- **Potential Environmental Receptors:** Results of our preliminary risk evaluation indicate that possible complete exposure pathways exist relative to air exposure, soil exposure, and groundwater ingestion pathways. However, the potential risk associated with the air exposure pathway is minimal, given that soil and groundwater hydrocarbon impacts show no detectable levels of Benzene. Also, low permeability clay-dominated soils are present down to approximately 14 feet in depth. Relative to soil exposure, no significant shallow soil hydrocarbon impacts have been identified and TPH-D/MO are generally below direct exposure ESLs. Relative to groundwater ingestion, the only water supply well identified in the immediate vicinity of the Site is an old, nonoperational well located beneath a desk in the Atthowe Fine Arts offices. This well has been unused for several decades and, given the 54 feet of conductor casing, would not be expected to be impacted from the identified Site hydrocarbon impacts.

### Recommendations for Data Gaps Investigation

Given the nature of the hydrocarbon impacts associated with this site (tarry, viscous hydrocarbons with no volatile range hydrocarbons that cannot be removed except by excavation), it is likely that closure of this site will not involve remedial measures, but rather will involve insuring that the residual hydrocarbons are fully defined and do not pose a significant human health risk. With this in mind, we recommend the following additional investigative activities at the Site.

- Drill and sample four additional borings, B-10 through B-13, on the site to attempt to fully characterize soil and groundwater hydrocarbon impacts. Two borings, B-10 and B-11, will be located on the upgradient (northeast) side of the hydrocarbon plume, and two borings, B-12 and B-13, will be located on the downgradient side of the hydrocarbon plume. These borings will be drilled and sampled in accordance with the previously-approved March 26, 2012 workplan.
- Collect two soil gas samples, SG-1 and SG-2, adjacent to the Site building to assess potential vapor intrusion concerns. The two soil gas samples will be collected in accordance with DTSC guidelines and will generally include: (1) Hand augering borings to approximately five feet in depth; (2) Installing a temporary vapor sampling well at approximately five feet in depth; (3) Conducting leak monitoring of the temporary wells using helium and a field helium detector; (4) Purging the vapor wells and allowing them to stabilize; (5) Collecting vapor samples at a maximum of 250 ml/minute flow in a one liter Summa canister; and (6) Analyzing the soil gas samples for TPH-G/BTEX using method TO-15 and Helium (leak detection compound).
- Decommission of the unused Site water supply well in accordance with Alameda County Public Works permit requirements.

If results of these additional activities are favorable (low to nondetectable hydrocarbons in borings and soil gas samples), then this Site should be granted regulatory closure using either standard closure criteria or Low-Threat Closure Policy guidelines.



## **1.0 INTRODUCTION**

Gribi Associates is pleased to submit this soil and groundwater investigation report on behalf of Mr. Scott Atthowe for the underground storage tank (UST) site located at 3924 Market Street, Oakland, California (Site) (see Figure 1 and Figure 2). The soil and groundwater investigation included the drilling and sampling of nine soil borings, B-1 through B-9, on the Site. This goal of the investigation will be to further define the extent of heavy-range petroleum hydrocarbon impacts on the Site. This report also includes a Conceptual Site Model (CSM), as well as recommendations for a data gaps investigation.

### **1.1 Scope of Work**

Gribi Associates was contracted by Mr. Scott Atthowe to conduct the following scope of work.

- **Task 1 Conduct prefield activities.**
- **Task 2 Conduct drilling and sampling activities.**
- **Task 3 Conduct laboratory analyses.**
- **Task 4 Prepare report of findings.**

These tasks were conducted in accordance with the approved workplan and with generally accepted sampling guidelines and protocols.

### **1.2 Limitations**

The services provided under this contract as described in this report include professional opinions and judgments based on data collected. These services have been provided according to generally accepted environmental protocol. The opinions and conclusions contained in this report are typically based on information obtained from:

1. Observations and measurements made by our field staff.
2. Contacts and discussions with regulatory agencies and others.
3. Review of available hydrogeologic data.

## **2.0 SITE BACKGROUND**

### **2.1 General Site Description**

According to the USGS Oakland, West, California 7.5-Minute Quadrangle Map, the Site lies on a gently southwest-sloping plain approximately one mile east from San Francisco Bay. The elevation at the project site is approximately 60 feet above mean sea level. The Site is located in a mixed commercial, light industrial, and residential area of north Oakland. Based on site topography and location, we would expect groundwater flow in the site area to generally be to the west towards San Francisco Bay.

The Site comprises a nominally square-shaped land parcel measuring approximately 200 feet by 200 feet. The Site includes an irregularly-shaped building that covers most of the parcel and actually comprises an amalgamation of an older two-story brick building on the northwest side of the site and more recent single story concrete block building additions on the northeast and southeast sides of the site. The site building has concrete slab flooring throughout. The slab flooring is slightly variable in elevation due to the different ages of construction. A few small concrete patches, possible floor drain remnants, are present in the concrete slab flooring. A partially-finished basement is present beneath the western side of the site building. This basement, which is currently used for storage, has concrete slab flooring. A floor drain is present in the basement that appears to have been part of a drainage system that transmitted water from various floor drains throughout the bakery northward to the storm drain or sewer beneath Market Street.

A covered loading dock located on the southwest side of the site has a concrete-slabbed ramp that extends approximately two to three feet below surface grade at the loading dock. The parking/loading yard on the southwest side of the Site is concrete-paved.

The Site is currently occupied by Atthowe Fine Arts Services, which uses the Site to pack, crate, and store fine art pieces. Most of the Site building is subdivided into different areas used to store variously-sized crated art pieces.

## 2.2 Site Environmental Conditions

Available site documents indicates the following past activities and environmental conditions:

- The Site operated as a bakery from perhaps the mid-1920s until 1987. This facility included one 500-gallon fuel underground storage tank (UST), located in the Market Street sidewalk. A fuel dispenser associated with the UST was located adjacent to the Site building immediately east of the UST. The age of the UST is not known.
- In March 1991, the 500-gallon UST and associated piping and dispenser were removed. Two soil samples collected from the UST excavation cavity at about 9 feet in depth and one soil sample at 2 feet below removed piping showed low levels (less than 25 milligrams per kilogram, mg/kg) of Total Petroleum Hydrocarbons as Gasoline and Diesel (TPH-G and TPH-D) and low levels (less than 0.5 mg/kg) of gasoline constituents Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).
- In June 1991, the UST excavation cavity was over excavated vertically to about 14 feet in depth. Five soil samples were collected at about 13 feet in depth and showed no detectable TPH-D, up to 210 mg/kg of TPH-G, and low levels (less than 5 mg/kg) of BTEX. The over excavation cavity was backfilled with imported pea gravel.
- In May and June 1995, three groundwater monitoring wells (MW-1, MW-2, and MW-3) were installed on the Site. MW-1 is located in an expected downgradient (west) groundwater flow direction from the former fuel dispenser, and wells MW-2 and MW-3 are located crossgradient and downgradient, respectively, from the former UST. Soil samples collected at about 10 feet in depth in each of the three wells showed very low to non-detectable levels of gasoline- and diesel-range hydrocarbons. Boring logs for the

three wells show sand and gravel soils below approximately 14 feet in depth. Brown staining with moderate to strong odors are indicated below approximately 12 feet in depth on all three well boring logs, particularly in well boring MW-1. Quarterly groundwater sampling of the three wells for one year in 1995 and early 1996 showed very low to non-detectable levels of gasoline-range hydrocarbons and low to moderate levels of diesel-range hydrocarbons in the wells.

- In August 1999, thick, black oily product was encountered in well MW-1, and in April 2000, this product was noted in all three wells. Laboratory analysis of the black oily product indicated it to be in the diesel- to motor oil-range, perhaps representing Bunker C heating oil. The report documenting these activities included a work scope to conduct historical records review to try to identify a heating oil source on the Site.
- On April 12, 2001, the Alameda County Environmental Health (ACEH) issued a letter requesting a report summarizing the historical records review and a workplan to determine the extent of the apparent heating oil release.
- ACEH issued follow-up directive letters on July 3, 2008, July 28, 2009, and September 10, 2010, generally requesting that the previously-requested workplan be submitted.

## 2.3 Workplan to Conduct Soil Boring Investigation

On March 26, 2012, Gribi Associates submitted the *Workplan to Conduct Soil Boring Investigation* for the Site. As part of the workplan preparation Gribi Associates conducted the following activities: (1) Groundwater monitoring of Site wells to check free product thicknesses; (2) An electromagnetic survey to identify potential buried tanks and to develop a below-ground utilities map for the Site and immediate site vicinity; and (3) A review of standard historical records to assess potential sources for the Site hydrocarbons.

### 2.3.1 Groundwater Monitoring Activities

On January 17, 2012, Gribi Associates personnel attempted to measure product thicknesses in the three site wells. However, the oily product in the three wells was too viscous to measure using both a water/product interface probe and a disposable bailer. In both cases, the tool (interface probe or bailer) would not sink through the residue, but would simply come to rest on top of it. With the bailer, only after dropping the bailer repeatedly from several feet above the residue, were we able to slowly extend the bailer into the product.

In all three wells, the dark brown to black viscous residue had a thickness of approximately 1.5 feet, and the groundwater beneath the sludge was clear. The residue had a crude oil hydrocarbon odor. In order to assess this residue, we collected a sample of product and water from MW-2 in a pint canning jar with sealing lid. This sample was labeled and chilled for transport to the laboratory under formal chain of custody. Because the product was semi-solid, the lab results were reported in milligrams per kilogram (mg/kg). Results of the lab analysis showed 890 mg/kg of TPH-G, 20,000 mg/kg of TPH-D, and 29,000 mg/kg of TPH-MO, with no detectable BTEX, SVOCs, or VOCs except 0.65 mg/kg of sec-Butylbenzene. The laboratory chromatogram for this sample indicates a very heavy hydrocarbon (C<sub>20</sub> -C<sub>40</sub> range).

### **2.3.2 Electromagnetic Survey**

On February 23, 2012, ForeSite conducted an electromagnetic survey to assess whether or not underground storage tanks (USTs) or other underground anomalies were present inside or outside the Site building. This survey identified no evidence of possible USTs or other large metal structures under the Site. Thus, it appears that the fuel oil UST (or USTs), if present in the past, was removed and is no longer present on the Site.

### **2.3.3 Historical Records Review**

In order to assess potential historical sources for the black residue product in the site wells, Gribi Associates reviewed historical aerial photos, historical Sanborn Maps, and a city directories abstract for the site and site vicinity. Our review of historical records did not uncover a specific, well defined source for the heavy-range hydrocarbons in the Site parking lot. However, Mr. Atthowe, the Site owner, did recall being told by representatives from the previous Site owner, Toscana Bakery, that a fuel oil UST was formerly located in the Site parking lot and that this UST was removed in the past.

## **2.4 Project Approach**

Based on both field and laboratory data, it appears likely that the thick fuel oil residue in the three wells originated from a former fuel oil UST (or USTs) located close to all three monitoring wells (i.e. in the southwest parking lot on the Site). Further, it is likely, based on the apparent high viscosity of the oil residue, that it has not migrated a significant distance from the source and that the residue product plume is not laterally extensive.

In order to attempt to test these hypotheses and better define the lateral and vertical extent of the heavy hydrocarbon product in the three site wells, the March 26, 2013 workplan proposed the drilling and sampling of approximately eight soil borings (B-1 through B-8) on and adjacent to the southwest Site parking lot. The borings will be drilled using direct-push coring equipment. Because the well boring logs indicated dark hydrocarbon staining below the groundwater table, these eight borings would be drilled to approximately 20 feet in depth, approximately ten feet below the groundwater table. In addition, soil samples from the eight borings would be collected below the groundwater table.

On October 17, 2013, Alameda County Environmental Health (ACEH) issued a letter approving the workplan with the provision that a ninth boring, B-9, be drilled south of MW-2 such that B-9 form a transect with borings B-1 and B-5.

## **3.0 DESCRIPTION OF FIELD ACTIVITIES**

Investigative soil borings were cored and sampled by Cascade Drilling (C-57 License No. 938110) on Thursday and Friday, November 21 and 22, 2013. All activities were conducted in accordance with applicable guidelines and statutes.

### **3.1 Prefield Activities**

Prior to beginning field activities, a drilling permit was obtained from the Alameda County Department of Public Works. In addition, an excavation permit was obtained from the City of Oakland. Copies of regulatory permits are provided in Appendix A.

Prior to implementing field activities, all drilling locations were marked with white paint, and Underground Services Alert (USA) was notified at least 48 hours prior to drilling. Also, a private underground utility locator was retained to conduct an independent clearance of the proposed well locations.

Prior to initiating drilling activities, a Site Safety Plan was prepared, and a tailgate safety meeting was conducted with all site workers.

### **3.2 Location of Borings**

The locations of soil borings B-1 through B-9 are shown on Figure 3. Borings B-1 through B-4 were sited along a transgradient transect within and adjacent to the expected location of the former fuel oil UST. Boring B-5 was sited in an expected upgradient (northeast) direction, and borings B-6, B-7, B-8, and B-9 were sited in an expected downgradient (southwest) groundwater flow direction from the expected former fuel oil UST location.

### **3.3 Drilling and Sampling of Investigative Soil Borings**

The nine soil borings, B-1 through B-9, were drilled to approximately 20 feet in depth using direct-push coring equipment. For all borings, continuous soil cores were collected to 20 feet in depth using a dual-tube system, whereby an outer core barrel remained in the boring while a smaller diameter core barrel was pushed beyond the outer core depth, allowing for collection of continuous soil bores to total boring depth. The continuous soil cores were collected in a clear plastic acetate tube, nested inside the inner stainless steel core barrel. After each four-foot core barrel was brought to the surface and exposed, the core was first sliced open lengthwise along the length of the acetate tube, allowing full examination and logging of the soil core prior to sampling. Soil samples were then collected from specific zones of interest in an acetate liner, which was cut to the desired length (typically four to six inches), capped with teflon tape and plastic end caps, labeled and placed in cold storage pending transport to a laboratory under formal chain-of-custody.

One grab groundwater sample was collected from each of the borings. After reaching total boring depths, open hole grab groundwater samples were collected by placing 3/4-inch diameter PVC well casing in the boring and allowing groundwater to enter the casing. Note that groundwater did not enter boring B-9 after approximately 30 minutes; hence, the groundwater sample for B-9 was collected after hydropunching from 20 to 24 feet in depth in a separate boring adjacent to the initial boring. Groundwater was then sampled using a clean small diameter bailer and poured directly into laboratory-supplied containers. Each sample container was then tightly sealed, labeled, and placed in cold storage for transport to the laboratory under formal chain-of-custody.

All coring and sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing first with water, then with dilute liquinox solution, and finally with distilled water. Soil cuttings were contained onsite in sealed drums pending laboratory results. After completion, the three soil borings were grouted to match existing surface grade using a cement/sand slurry.

### **3.4 Laboratory Analysis of Soil and Water Samples**

A total of 27 soil samples (three per boring) and nine water samples (one per boring) were analyzed for the following parameters.

USEPA 8015M Total Petroleum Hydrocarbons ad Diesel/Motor Oil (TPH-D/MO)  
USEPA 8015M Total Petroleum Hydrocarbons ad Gasoline (TPH-G)  
USEPA 8020 Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)

All samples were analyzed by Sunstar Labs, a state-certified laboratory, with standard turn around on laboratory results.

## **4.0 RESULTS OF INVESTIGATION**

### **4.1 General Subsurface Conditions**

Soil boring logs for the nine investigative borings are contained in Appendix B. Soils encountered in the borings were generally similar, consisting of dark grey to brown clays to approximately 14 feet in depth, followed by poorly sorted sands and silts to 20 feet, the total depth investigated.

Slight to moderate hydrocarbon odors and staining were encountered in the sand layer below 14 feet in depth in borings B-1, B-3, B-4, and B-6. In boring B-2, located near the entrance to the covered loading dock, slight to moderate hydrocarbon odors and staining were encountered in clays from approximately eight feet to 14 feet in depth, and also in the uppermost sand from approximately 14 to 16 feet in depth. In boring B-5, located inside the covered loading dock area, slight hydrocarbon odors and staining were encountered from approximately four feet to 17 feet in depth. No significant hydrocarbon sheens were noted in water samples from any of the nine borings.

### **4.2 Results of Laboratory Analyses**

Soil and groundwater laboratory analytical results are summarized in Table 1 and on Figure 4. The laboratory data report and chain of custody records are contained in Appendix C.

Slight to moderate concentrations (over 100 milligrams per kilogram, mg/kg) of TPH-D and TPH-MO were encountered in soil samples at about 15 feet depth in borings B-1, B-3, B-4, and B-6. Slight to moderate concentrations of TPH-D and TPH-MO were also encountered at about nine feet in depth in boring B-2. No detectable concentrations of Benzene were reported in any soil samples from the nine soil borings.

Moderate levels (over 1,000 micrograms per liter, ug/L) of TPH-D and TPH-MO were encountered in the grab groundwater samples from B-3 and B-4. Also, a moderate concentration (9,900 ug/L) of TPH-G was reported in the grab groundwater sample from boring B-4. No detectable concentrations of Benzene were reported in any of the groundwater samples from the nine soil borings.

## **5.0 CONCEPTUAL SITE MODEL**

Based on this and previous investigative results, we posit the following conceptual site model (CSM) relative to hydrocarbon impacts identified in soil and groundwater beneath the Site. This CSM has been developed to assist in risk-based decision making. In developing the CSM, we have evaluated actual and potential contaminant sources, migratory pathways, and environmental receptors. Note that this CSM is based on our understanding of currently-available data; where data is not available or is not representative, a data gap is noted.

### **5.1 Contaminants of Concern**

Contaminants of concern (COCs) identified in both soil and groundwater in investigative borings and monitoring wells on the Site are limited primarily to Total Petroleum Hydrocarbons as Diesel (TPH-D) and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO). Soil and groundwater samples showed no significant concentrations of BTEX constituents or MTBE. Note that the grab groundwater sample from B-4 showed a moderate concentration of Total Petroleum Hydrocarbons as Gasoline (TPH-G). This TPH-G detection appears to be related to the former gasoline UST located in the Market Street sidewalk just south of B-4 and is isolated and does not indicate a significant impact.

Note that previous review of TPH-D/MO chromatograms for the hydrocarbon product in Site wells clearly demonstrates that the TPH-D and TPH-MO detections are related to a single heavy fuel oil (HFO) product in the C<sub>20</sub>-C<sub>40</sub> carbon range. HFO is relatively viscous and insoluble in groundwater, and would not be expected to contain significant amounts of lighter end hydrocarbon components<sup>1</sup>.

### **5.2 Source of Contaminants**

Based on field and laboratory analytical results, the source of COCs appears to have been a fuel oil UST (or USTs) located in the vicinity of borings B-2 and B-5. Mr. Scott Atthowe, the current site owner, recalls being told by representatives from the previous Site owner, Toscana Bakery, that a fuel oil UST was formerly located in the Site parking lot and that this UST was removed in the past. Sanborn Fire Insurance Maps show three large ovens to have been located in the middle of the Site building from at least the 1950s to the 1970s (no fuel oil USTs or ASTs are shown on the Sanborn Maps). It is likely that the former fuel oil UST (or USTs) were used by the bakery in the distant past.

Relative to potential secondary sources (residual soil contamination or free product), the relatively low soil and groundwater hydrocarbon impacts identified during this investigation do

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<sup>1</sup> “How to Effectively Recover Free Product at Leaking Underground Storage Tank Sites: A Guide for State Regulators”, (EPA 510-R-960111) September 1996.

not indicate a significant secondary source, either in soil or groundwater. Further, it is clear from current and previous investigative results that the apparent free product present in Site wells MW-1, MW-2, and MW-3 represents residual (sorbed) product, and not mobile or migrating product. Free product (or light non-aqueous phase liquid (LNAPL) can exist as either residual (immobile) LNAPL, mobile LNAPL, or migrating LNAPL<sup>2</sup>. The referenced State Water Quality Control Board guidance states that “the term free product is primarily equivalent to migrating LNAPL (a subset of mobile LNAPL)” and “LNAPL must be removed to the point that its migration is stopped and the LNAPL extent is stable.” The apparent LNAPL in Site wells is clearly stable and incapable of migration. Also, as evidenced by the limited magnitude and extent of dissolved-phase hydrocarbon impacts, the apparent LNAPL has not acted as a secondary source for dissolved-phase hydrocarbon impacts in groundwater beneath the Site.

### **5.3 Nature and Extent of Impacts**

As shown on Figures 4, 5, and 6, soil hydrocarbon impacts are limited primarily to a fairly thin layer within the sand layer below 14 feet in depth. These soil hydrocarbon impacts extend at least 75 feet to the south-southwest beneath Market Street and towards 39<sup>th</sup> Street. The lateral extent of soil impact is not fully defined to the south.

The groundwater hydrocarbon plume is smaller than the soil hydrocarbon plume, extending perhaps 20 to 25 feet west-southwest from the presumed source area. The limited extent of groundwater hydrocarbon impacts is clearly due to the nature of the contaminants, which have low solubility in groundwater.

Given the configuration of relatively large soil hydrocarbon plume and small groundwater hydrocarbon plume, it appears likely that: (1) Releases associated with these plumes occurred many decades ago; (2) At the time of these releases, the fuel oil was more mobile (less viscous) and, as such, able to migrate laterally; (3) These hydrocarbons subsequently degraded over several decades, losing mobility and effectively “locking” them in place.

### **5.4 Fate and Transport of Impacts**

Given the assumed distant age of the release and the nature and extent of hydrocarbon impacts, we would not expect the current configuration of the soil and groundwater hydrocarbon plumes to change significantly, except to degrade slowly back towards the source. As evidenced by the relatively low dissolved phase groundwater hydrocarbon impacts (even in borings with moderate soil hydrocarbon impacts), it is clear that partitioning between residual (sorbed) phase and dissolved (groundwater) phase is very limited. There is no reasonable expectation that these conditions will change significantly in the future.

### **5.5 Potential Environmental Receptors**

Results of our preliminary risk evaluation of all potential exposure pathways for this UST site are summarized below.

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<sup>2</sup> “Technical Justification for Groundwater Media-Specific Criteria”, State Water Resources Control Board, Final, 04-24-2012; supplement to Low-Threat Underground Storage Tank (UST) Case Closure Policy.



Exposure Pathway	Complete?	Risk Level	Discussion
<b>Air Exposure Pathway</b>			
Surface soil volatilization to ambient air	Possible	Low	Limited identified shallow hydrocarbon impacts; no soil TPH-G/BTEX in soils.
Subsurface soil volatilization to ambient air	Possible	Low	No soil TPH-G/BTEX in soils.
Subsurface soil volatilization to enclosed space	Possible	Low	No soil TPH-G/BTEX in soils.
Groundwater volatilization to ambient air	Possible	Low	No soil TPH-G/BTEX in groundwater.
Groundwater volatilization to enclosed space	Possible	Low	No soil TPH-G/BTEX in groundwater.
<b>Soil Exposure Pathway</b>			
Dermal contact/ingestion of surface soils	Possible	Low	Construction worker only; limited identified shallow hydrocarbon impacts; soil TPH-D/MO impacts generally below ESLs.
Dermal contact/ingestion of subsurface soils	Possible	Low	Construction worker only; soil TPH-D/MO impacts generally below ESLs.
<b>Groundwater Exposure Pathway</b>			
Soil leaching to groundwater, ingestion	Possible	Low	Only nearby water supply wells is nonoperational Site well with 54 ft of conductor casing.
Dissolved/free phase groundwater ingestion	Possible	Low	Only nearby water supply wells is nonoperational Site well with 54 ft of conductor casing.
<b>Surface Water Exposure Pathway</b>			
Soil leaching to surface water	No	None	No nearby surface water bodies.
Groundwater plume discharge to surface water	No	None	No nearby surface water bodies.

As the table above illustrates, possible complete exposure pathways exist relative to air exposure, soil exposure, and groundwater ingestion pathways. However, the potential risk associated with the air exposure pathway is minimal, given that soil and groundwater hydrocarbon impacts show no detectable levels of Benzene. Also, low permeability clay-dominated soils are present down to approximately 14 feet in depth. Relative to soil exposure, no significant shallow soil hydrocarbon impacts have been identified and TPH-D/MO are generally below direct exposure ESLs.

Relative to groundwater ingestion, the only water supply well identified in the immediate vicinity of the Site is an old, nonoperational well located beneath a desk in the Atthowe Fine Arts offices. According to the well log for this well (included in Appendix D), this well was installed for Toscani Bakery in 1928. The well includes 54 feet of 10-inch diameter conductor casing, and 108 feet of 8-inch diameter casing with 50 feet of machined perforations. The well boring indicates primarily clays down to 108 feet, with a “cement gravel” from 82 to 83 feet and a “gravel” from 97 to 102 feet in depth. This well has been unused for several decades and, given the 54 feet of conductor casing, would not be expected to be impacted from the identified Site hydrocarbon impacts.

## 6.0 RECOMMENDATIONS FOR DATA GAPS INVESTIGATION

Given the nature of the hydrocarbon impacts associated with this site (tarry, viscous hydrocarbons with no volatile range hydrocarbons that cannot be removed except by excavation), it is likely that closure of this site will not involve remedial measures, but rather will involve insuring that the residual hydrocarbons are fully defined and do not pose a significant human health risk. With this in mind, we recommend the following additional investigative activities at the Site.

- Drill and sample four additional borings, B-10 through B-13, on the site to attempt to fully characterize soil and groundwater hydrocarbon impacts (see Figure 7). Two borings, B-10 and B-11, will be located on the upgradient (northeast) side of the hydrocarbon plume, and two borings, B-12 and B-13, will be located on the downgradient side of the hydrocarbon plume. These borings will be drilled and sampled in accordance with the previously-approved March 26, 2012 workplan.
- Collect two soil gas samples, SG-1 and SG-2, adjacent to the Site building to assess potential vapor intrusion concerns. The two soil gas samples will be collected in accordance with DTSC guidelines and will generally include: (1) Hand augering borings to approximately five feet in depth; (2) Installing a temporary vapor sampling well at approximately five feet in depth; (3) Conducting leak monitoring of the temporary wells using helium and a field helium detector; (4) Purging the vapor wells and allowing them to stabilize; (5) Collecting vapor samples at a maximum of 250 ml/minute flow in a one liter Summa canister; and (6) Analyzing the soil gas samples for TPH-G/BTEX using method TO-15 and Helium (leak detection compound).
- Decommission of the unused Site water supply well in accordance with Alameda County Public Works permit requirements.

If results of these additional activities are favorable (low to nondetectable hydrocarbons in borings and soil gas samples), then this Site should be granted regulatory closure using either standard closure criteria or Low-Threat Closure Policy guidelines.

## TABLES

**Table 1**  
**SUMMARY OF SOIL AND GROUNDWATER LABORATORY ANALYTICAL RESULTS**  
3924 Market Street UST Site

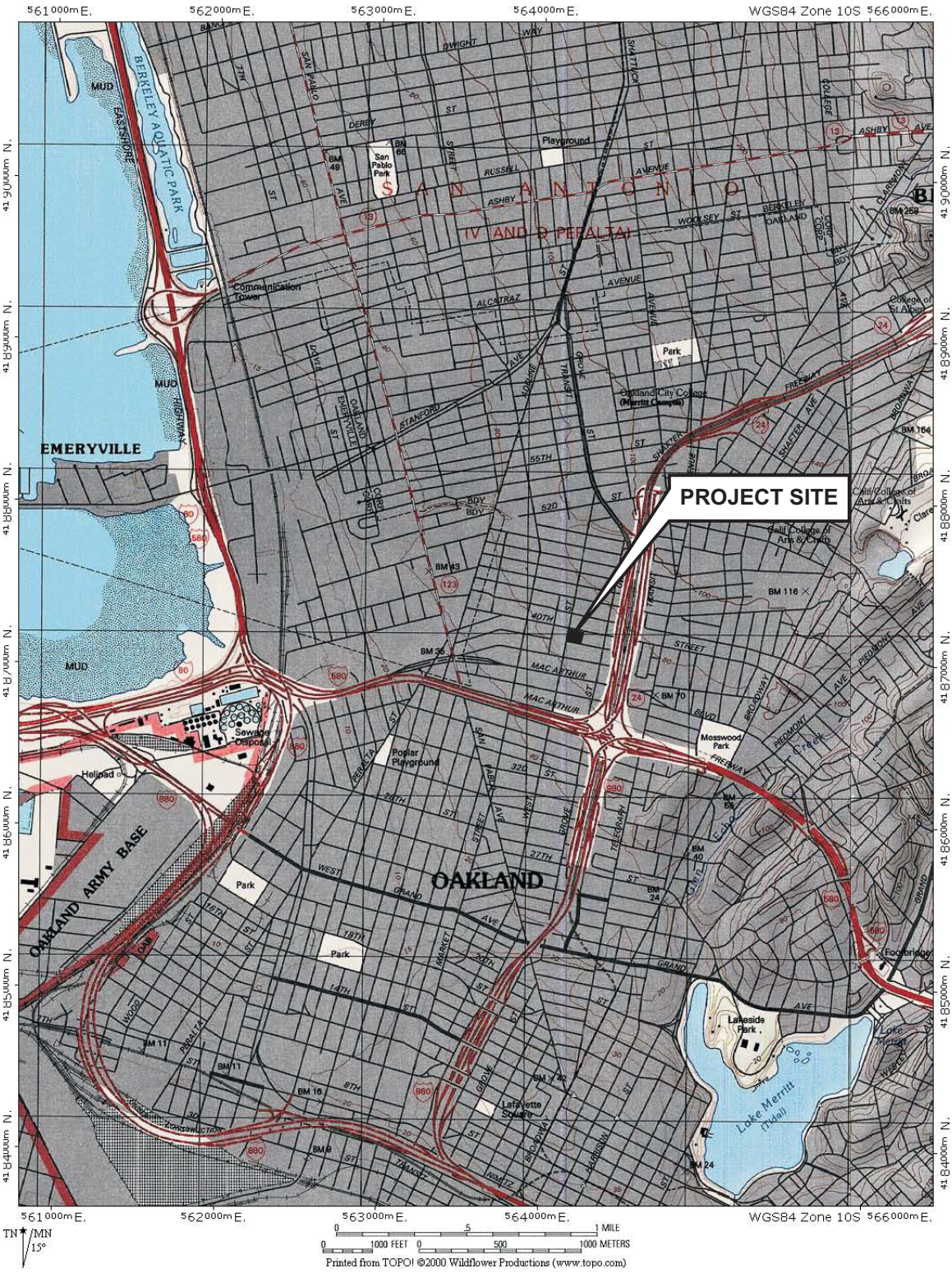
Sample ID	Sample Matrix	Sample Depth	Soil concentrations in milligrams per kilogram (mg/kg) Groundwater concentrations in micrograms per liter (ug/l)						
			TPH-G	TPH-D	TPH-M	B	T	E	X
B-1-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-1-12.0	Soil	12.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-1-16.0	Soil	16.0 ft	<b>0.73</b>	<b>190</b>	<b>250</b>	<0.005	<0.005	<0.005	<0.010
<i>B-1-GW</i>	<i>Water</i>	<i>(16.5 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-2-9.0	Soil	9.0 ft	<b>1.2</b>	<b>290</b>	<b>280</b>	<0.005	<0.005	<0.005	<0.010
B-2-12.0	Soil	12.0 ft	<b>0.59</b>	<b>43</b>	<10	<0.005	<0.005	<0.005	<0.010
B-2-15.0	Soil	15.0 ft	<b>0.84</b>	<10	<10	<0.005	<b>0.0069</b>	<0.005	<0.010
<i>B-2-GW</i>	<i>Water</i>	<i>(15.5 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-3-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-3-12.0	Soil	12.0 ft	<0.5	<b>43</b>	<10	<0.005	<0.005	<0.005	<0.010
B-3-15.0	Soil	15.0 ft	<b>1.2</b>	<b>280</b>	<b>290</b>	<0.005	<0.005	<0.005	<0.010
<i>B-3-GW</i>	<i>Water</i>	<i>(16.5 ft)</i>	<i>84</i>	<i>2,400</i>	<i>3,100</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-4-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-4-12.0	Soil	12.0 ft	<0.5	<b>11</b>	<10	<0.005	<0.005	<0.005	<0.010
B-4-15.0	Soil	15.0 ft	<b>1.1</b>	<b>490</b>	<b>570</b>	<0.005	<0.005	<0.005	<0.010
<i>B-4-GW</i>	<i>Water</i>	<i>(15.5 ft)</i>	<i>9,900</i>	<i>4,700</i>	<i>5,100</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>1.0</i>
B-5-7.0	Soil	7.0 ft	<b>0.69</b>	<b>70</b>	<10	<0.005	<0.005	<0.005	<0.010
B-5-12.0	Soil	12.0 ft	<b>0.58</b>	<b>18</b>	<10	<0.005	<0.005	<0.005	<0.010
B-5-15.0	Soil	15.0 ft	<b>1.6</b>	<b>11</b>	<10	<0.005	<0.005	<0.005	<0.010
<i>B-5-GW</i>	<i>Water</i>	<i>(16.5 ft)</i>	<i>87</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-6-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-6-12.0	Soil	12.0 ft	<0.5	<b>10</b>	<10	<0.005	<0.005	<0.005	<0.010
B-6-15.0	Soil	15.0 ft	<b>2.4</b>	<b>740</b>	<b>910</b>	<0.005	<0.005	<0.005	<0.010
<i>B-6-GW</i>	<i>Water</i>	<i>(14.0 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-7-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-7-12.0	Soil	12.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-7-16.0	Soil	16.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
<i>B-7-GW</i>	<i>Water</i>	<i>(15.0 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-8-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-8-12.0	Soil	12.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-8-16.0	Soil	16.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
<i>B-8-GW</i>	<i>Water</i>	<i>(15.0 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
B-9-8.0	Soil	8.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-9-12.0	Soil	12.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
B-9-16.0	Soil	16.0 ft	<0.5	<10	<10	<0.005	<0.005	<0.005	<0.010
<i>B-9-GW</i>	<i>Water</i>	<i>(20-24 ft)</i>	<i>&lt;50</i>	<i>&lt;500</i>	<i>&lt;500</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;1.0</i>	<i>&lt;2.0</i>
Shallow Soil ESL			<b>500</b>	<b>500</b>	<b>2,500</b>	<b>1.2</b>	<b>9.3</b>	<b>4.7</b>	<b>11</b>
<i>Groundwater ESL</i>			<i>500</i>	<i>640</i>	<i>640</i>	<i>46</i>	<i>130</i>	<i>43</i>	<i>100</i>

**Table Notes:**

TPH-G: Total petroleum hydrocarbons as gasoline  
TPH-D: Total petroleum hydrocarbons as diesel  
TPH-M: Total petroleum hydrocarbons as motor oil  
B: Benzene  
T: Toluene  
E: Ethylbenzene  
X: Xylenes

<0.5: Not detected above the expressed detection level.  
ESL: Environmental Screening Levels, as contained in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, Interim Final, May 2013; Table D (non-drinking water, commercial land use)

## FIGURES



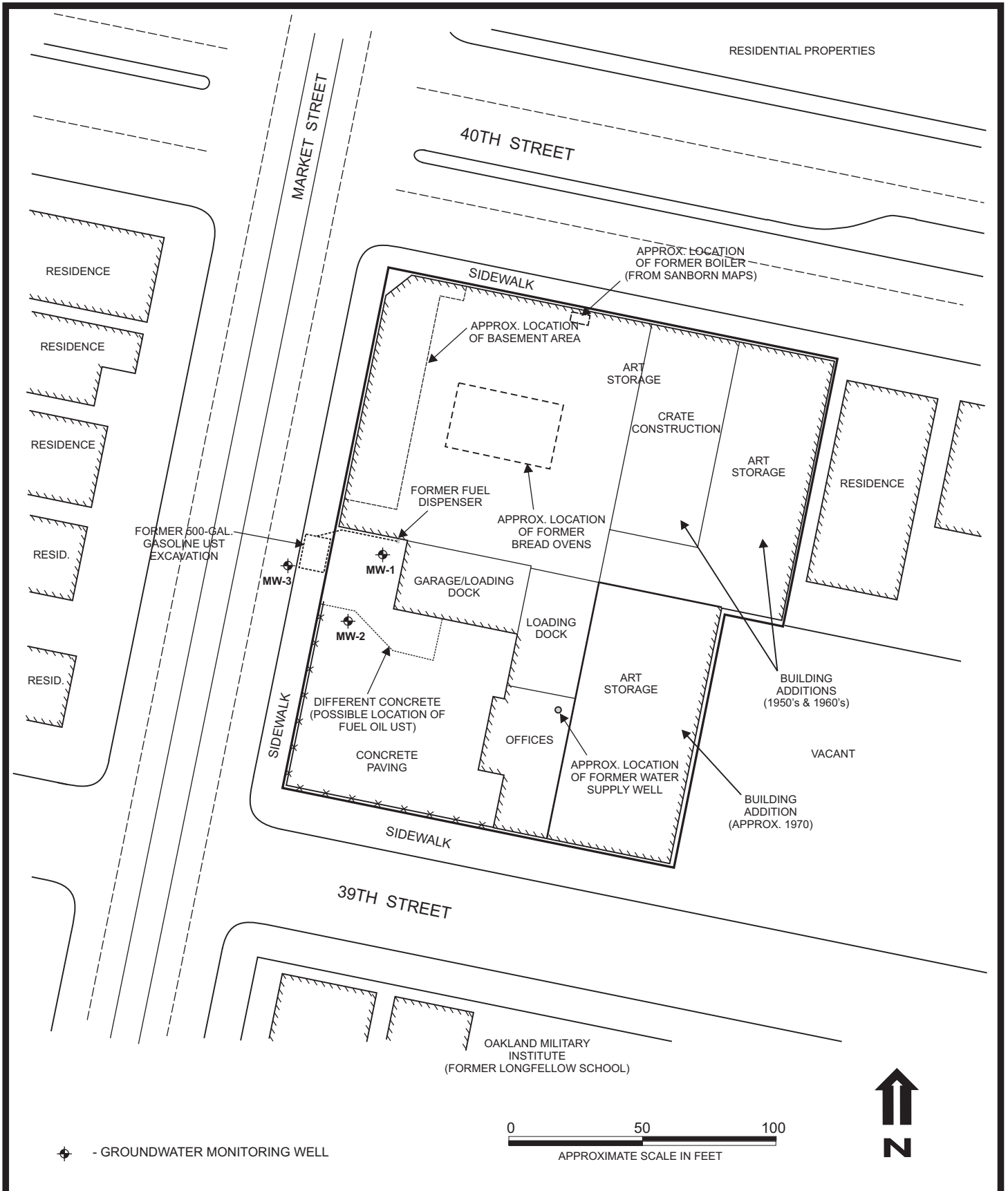
DESIGNED BY:	CHECKED BY: JEG
DRAWN BY: JEG	SCALE:
PROJECT NO:	

**SITE VICINITY MAP**

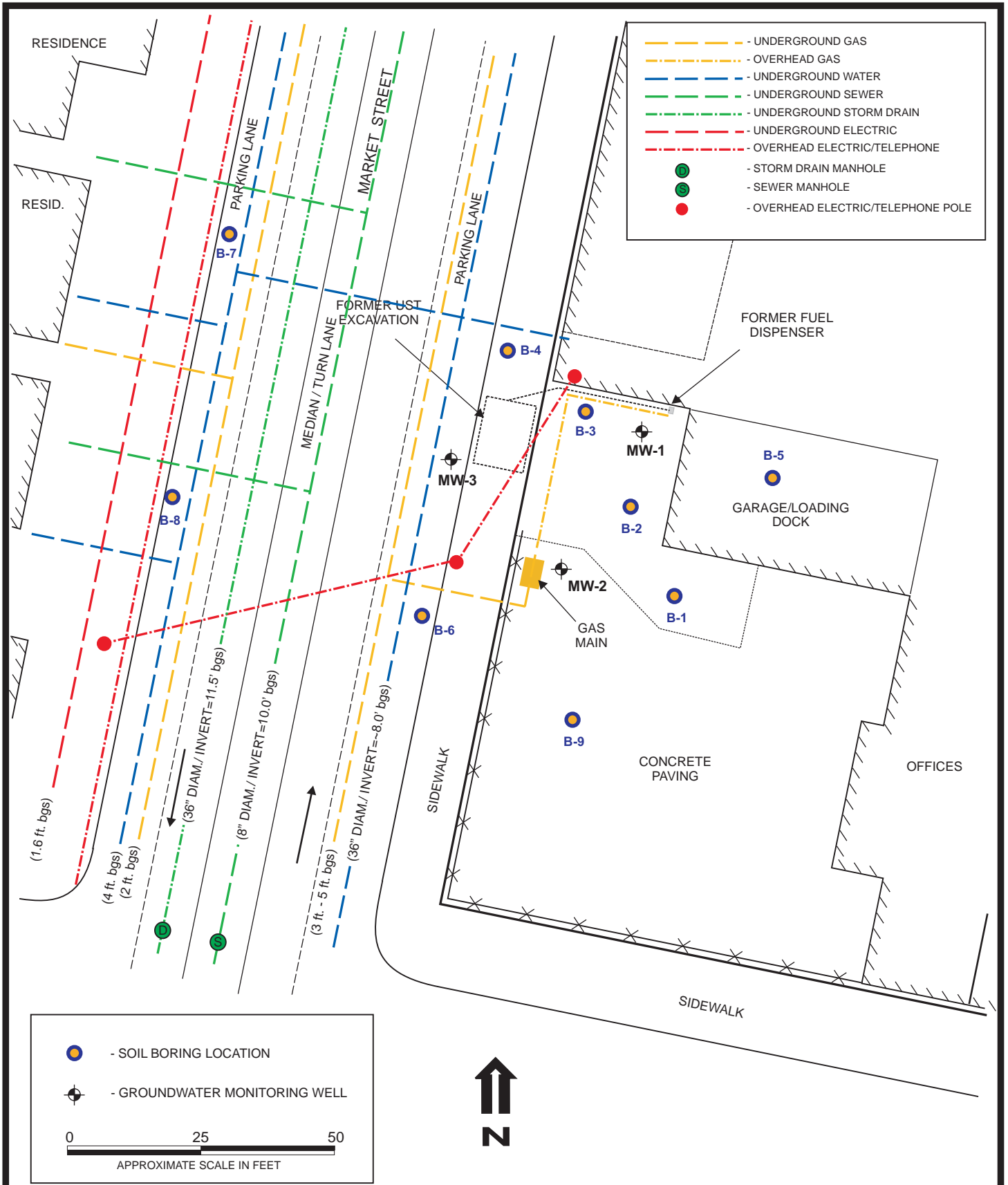
3924 MARKET STREET  
OAKLAND, CALIFORNIA

DATE: 12/30/2013      FIGURE: 1



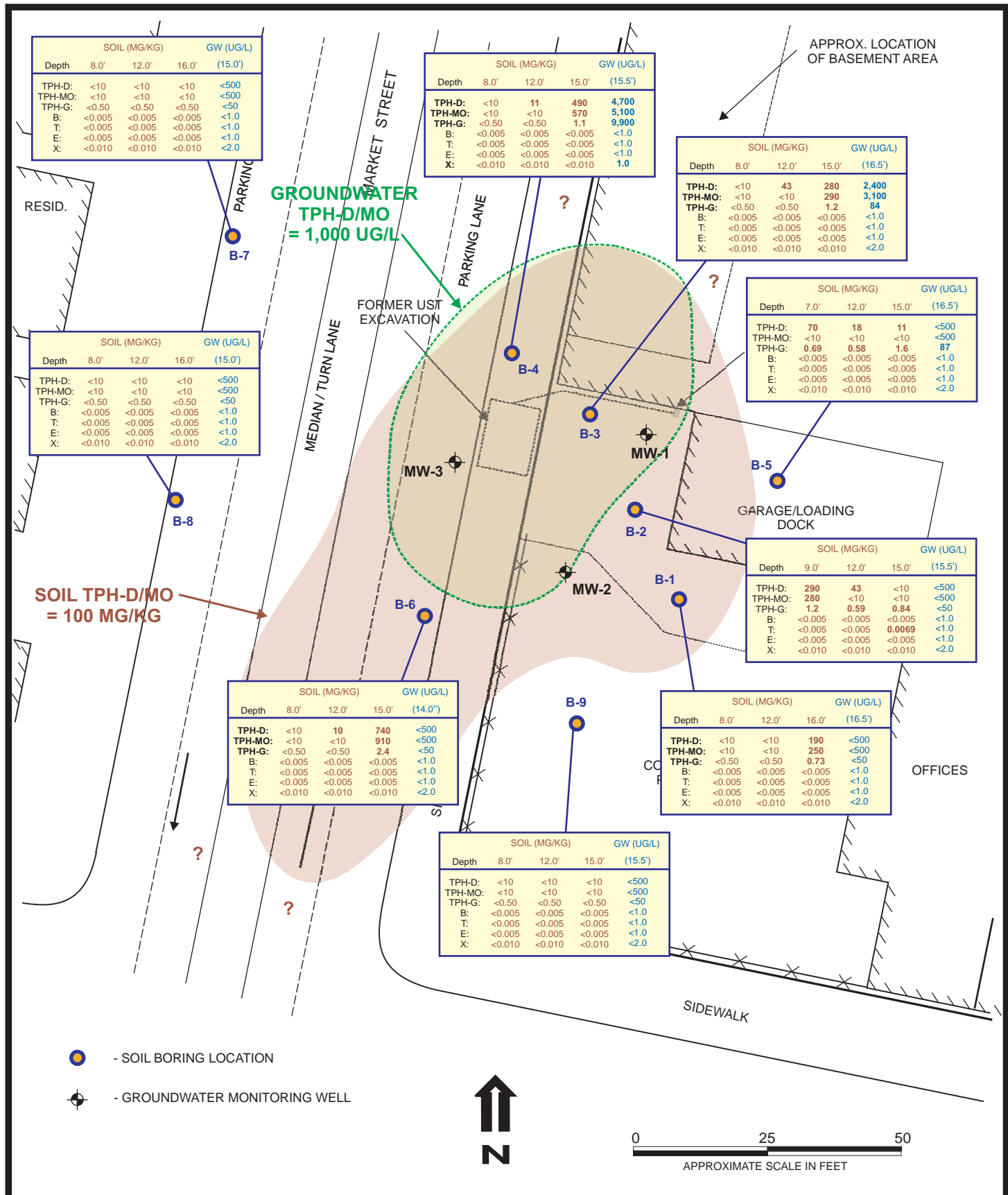


DESIGNED BY:	CHECKED BY: JEG	<b>SITE PLAN</b>	DATE: 12/30/2013	FIGURE: 2
DRAWN BY: JEG	SCALE:		<b>GRIBI</b>	
		3924 MARKET STREET OAKLAND, CALIFORNIA		



DESIGNED BY:	CHECKED BY: JEG	<b>SOIL BORING LOCATIONS</b>	DATE: 12/30/2013	FIGURE: 3
DRAWN BY: JEG	SCALE:		<b>GRIBI</b>	
		3924 MARKET STREET OAKLAND, CALIFORNIA		





DESIGNED BY: \_\_\_\_\_ CHECKED BY: JEG

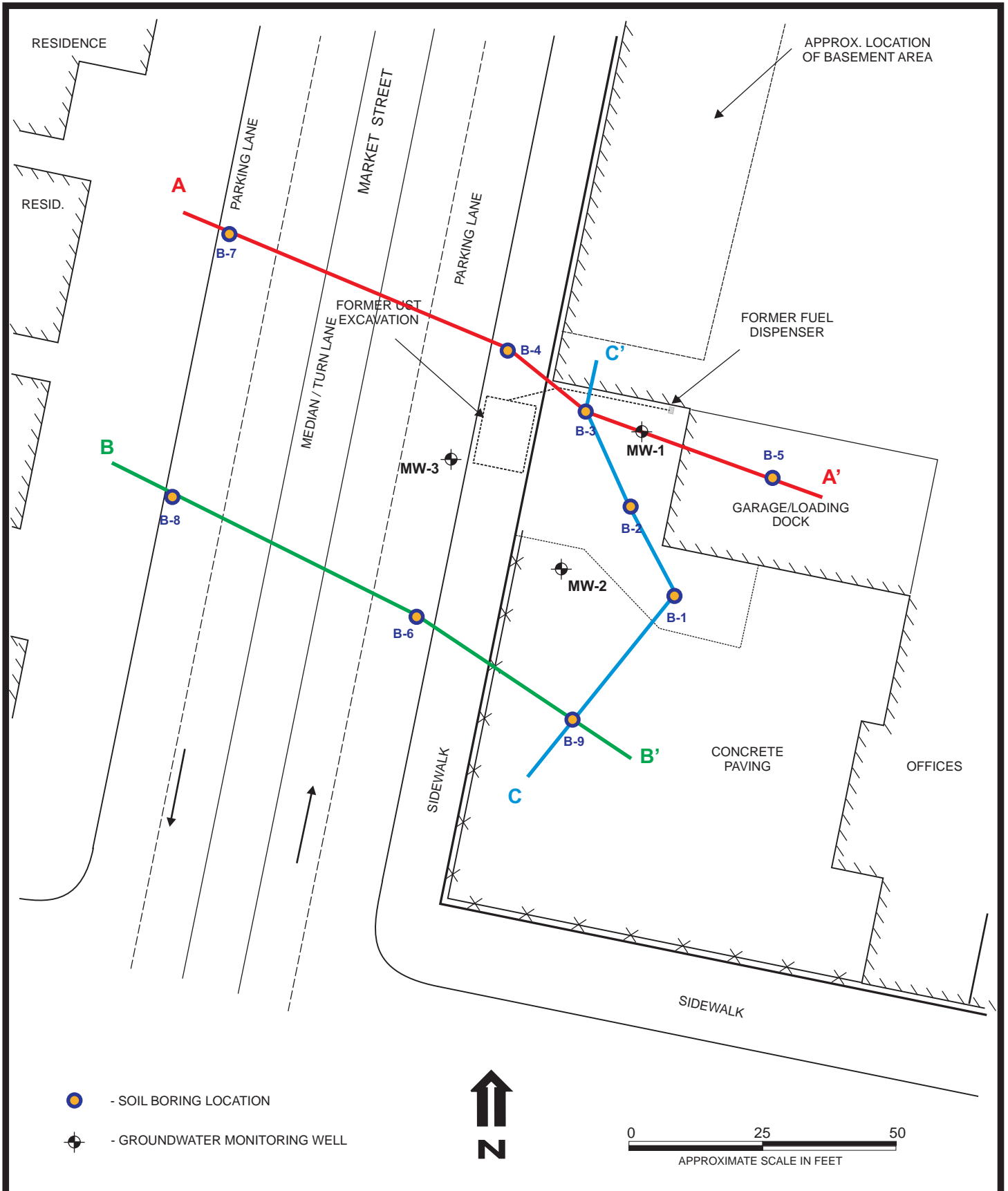
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**SOIL & GROUNDWATER HYDROCARBON RESULTS**

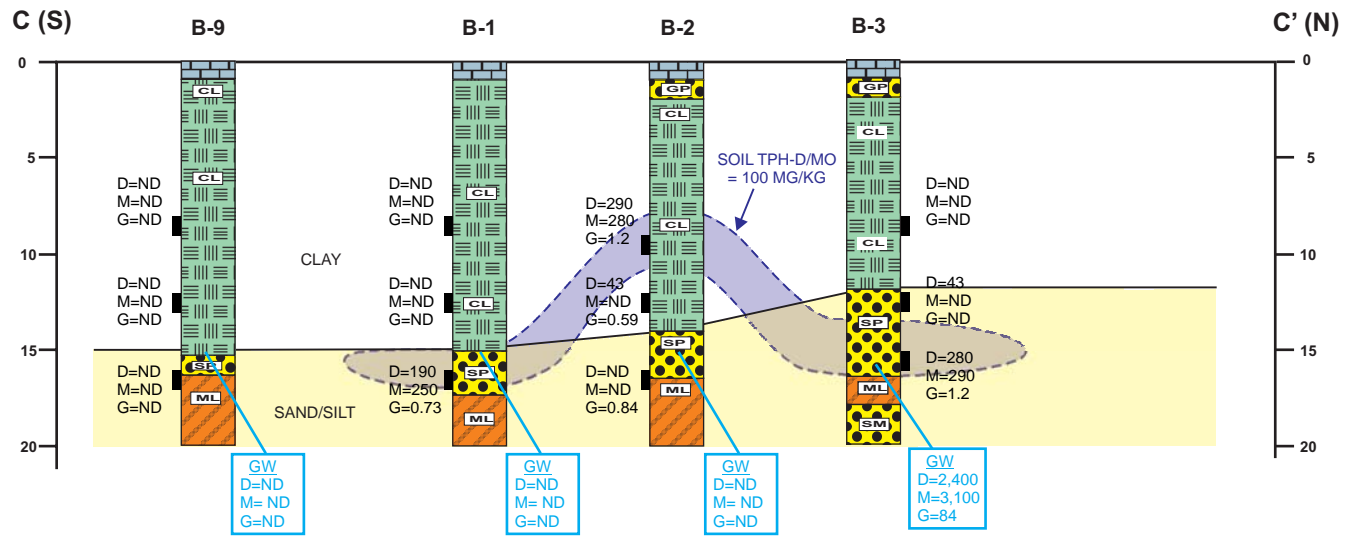
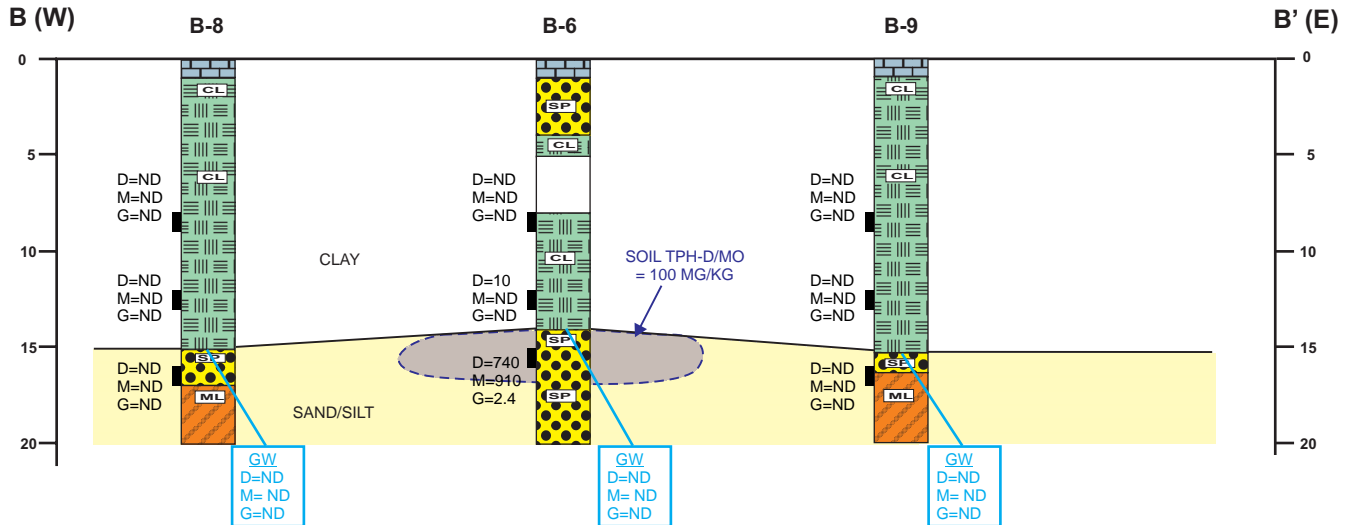
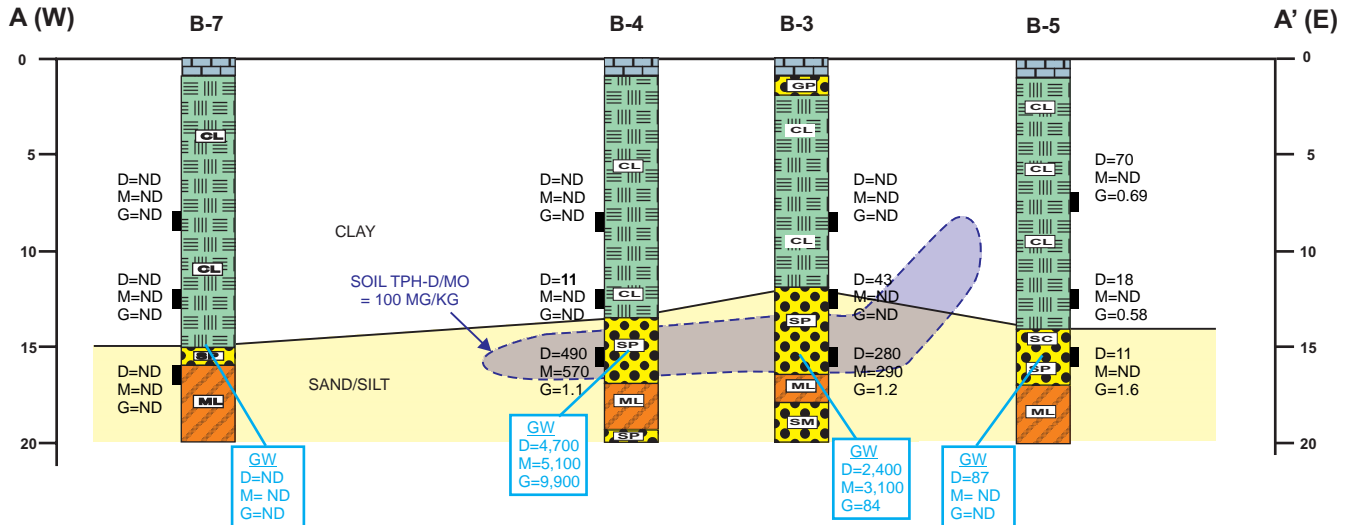
3924 MARKET STREET  
OAKLAND, CALIFORNIA

DATE: 12/30/2013 FIGURE: 4

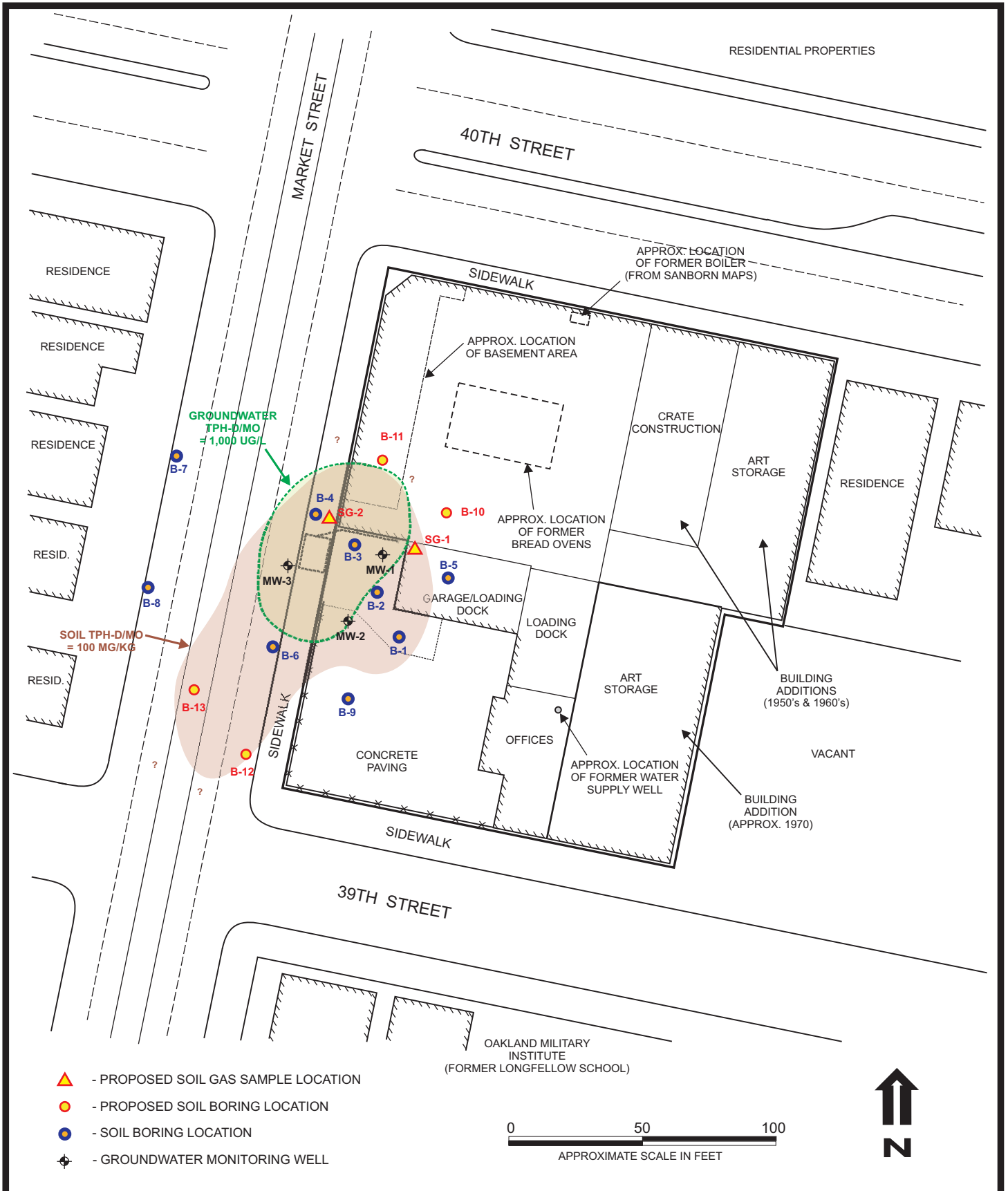




DESIGNED BY:	CHECKED BY: JEG	<b>CROSS SECTION LOCATION MAP</b>	DATE: 12/30/2013	FIGURE: 5
DRAWN BY: JEG	SCALE:		<b>GRIBI</b>	
		3924 MARKET STREET OAKLAND, CALIFORNIA		



DESIGNED BY:	CHECKED BY: JEG	<b>CROSS SECTIONS</b>	DATE: 12/30/2013	FIGURE: 6
DRAWN BY: JEG	SCALE:			
		3924 MARKET STREET OAKLAND, CALIFORNIA		



DESIGNED BY:	CHECKED BY: JEG	<b>PROPOSED BORING LOCATIONS</b>	DATE: 12/30/2013	FIGURE: 7
DRAWN BY: JEG	SCALE:		<b>GRIBI</b>	
		3924 MARKET STREET OAKLAND, CALIFORNIA		

**APPENDIX A**  
**REGULATORY PERMITS**

**Alameda County Public Works Agency - Water Resources Well Permit**



399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

**Application Approved on: 11/14/2013 By jamesy**

**Permit Numbers: W2013-0922  
Permits Valid from 11/21/2013 to 11/22/2013**

**Application Id:** 1384295004712  
**Site Location:** 3924 Market Street  
**Project Start Date:** 11/21/2013  
**Assigned Inspector:** Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

**City of Project Site:**Oakland

**Completion Date:**11/22/2013

**Applicant:** Gribi - James Gribi  
1090 Adams St. Ste K, Benecia, CA 94510  
**Property Owner:** Scott Atthowe Atthowe Fine Arts Facility  
3924 Market St, Oakland, CA 94111  
**Client:** \*\* same as Property Owner \*\*

**Phone:** 707-748-7743

**Phone:** 510-654-6816

**Receipt Number: WR2013-0430** **Total Due:** \$265.00  
**Payer Name : Gribi** **Total Amount Paid:** \$265.00  
Paid By: CHECK **PAID IN FULL**

**Works Requesting Permits:**

Borehole(s) for Investigation-Environmental/Monitoring Study - 9 Boreholes  
Driller: Cascade Drilling, LLP - Lic #: 938110 - Method: DPcpt

**Work Total: \$265.00**

**Specifications**

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013-0922	11/14/2013	02/19/2014	9	2.50 in.	20.00 ft

**Specific Work Permit Conditions**

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

6. NOTE:

**Alameda County Public Works Agency - Water Resources Well Permit**

Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, California 94612

# EXCAVATION

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK CIVIL ENGINEERING

VALID FOR 90 DAYS FROM DATE OF ISSUANCE

PROPERTY OWNER NAME <b>Scott Atthowe</b>		SITE ADDRESS <b>3924 Market St, Oakland, CA</b>
APPROVAL START DATE <b>11/21/2013</b>	APPROVAL END DATE <b>11/22/2013</b>	24-HOUR EMERGENCY PHONE NUMBER <b>707-631-1505</b>
CONTRACTOR'S LICENSE NUMBER AND CLASS <b>C57 - 938110</b>		PERMIT NUMBER <b>X 120</b>

ATTENTION:

- State law, Government Code Section 4216-4216.9, requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. Call USA at 811, 1-800-227-2600 or online: www.usaortho.org.
- Underground Service Alert (USA) ticket #: **454-654**
- 48 hours prior to starting work, you must call 510-238-3651 to schedule an inspection.
- 48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill)

**OWNER/BUILDER**

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to it's issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 70044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale).

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my personal piece of residence or appurtenances thereon, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption in this subdivision on more than two structures more than once during any three-year period. (Sec. 7044, Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law).

I am exempt under Sec. \_\_\_\_\_ R&PC for this reason \_\_\_\_\_

**WORKER'S COMPENSATION**

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation insurance, or a certified copy thereof (Sec. 3800, Lab. C).

Policy # **13JWD30531** Company Name **Alaska National**

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars (\$100) or less).

**NOTICE TO APPLICANT**

If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12, Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (I understand that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law).

**X** *Scott Atthowe* **11/13/13**

DATE STREET LAST REQUIRED	SPECIAL PAVING DETAIL REQUIRED	HOLIDAY RESTRICTION? (NOV 1 - JAN 1)	LIMITED OPERATION AREA (7AM - 9AM & 4 PM - 6PM)
<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
ISSUED BY	DATE ISSUED		

W:\civserver\permit\council\COUNTERING-SVCS\COUNTERFORMS\Applications\X Application 2912.doc

CITY OF OAKLAND • Department of Planning, Building and Neighborhood Preservation  
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • Fax (510) 238-2263

Applications for which no permit is issued within 180 days shall expire by limitation. No refund more than 180 days after expiration or final.

Appl# X1302973 Job Site 3924 MARKET ST Parcel# 012 -0961-012-03

Descr Soil borings on Market St (see map). Maintain a minimum five feet sidewalk for pedestrian access.  
one-half (5.5') feet sidewalk for pedestrian access.  
Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR.  
Work Type EXCAVATION-PRIVATE P

USA # Util Co. Job # ATTHOWE Acctg#:  
Util Fund #:

Applicant Phone# Lic# --License Classes--

Owner ATTHOWE SCOTT C TR  
Contractor CASCADE DRILLING L P X (916)638-1169 938110 C57  
Arch/Engr  
Agent RAMIN BET-YONAN (LOA 11/15/13) (925)998-3905  
Applic Addr 3632 OMEC CIR, RANCHO CORDOVA, CA, 95742-730

\$436.05 FEES TO BE PAID AT ISSUANCE

\$71.00 Applic	\$309.00 Permit
\$ .00 Process	\$36.10 Rec Mgmt
\$ .00 Gen Plan	\$ .00 Invtg
\$ .00 Other	\$19.95 Tech Enh

Application Processed By \_\_\_\_\_ Date: \_\_\_\_\_

Permit Issued By *lu* Date: *11/19/13*

Finald By \_\_\_\_\_ Date: \_\_\_\_\_

Application Docs Forwarded To \_\_\_\_\_ Date: \_\_\_\_\_

# APPLICANT COPY

# CITY OF OAKLAND

SCANNED  
11/20/13  
Terry

POSTED  
11/20/13

ADDRESS: \_\_\_\_\_  
DIST: \_\_\_\_\_  
Date: 11/19/13 net paid \$435.05  
By: JWK Reg/Intr 403 Recd/Intr 02249

**APPENDIX B**  
**SOIL BORING LOGS**







# LOG OF BORING

BORING NUMBER : **B-1**  
 BORING LOCATION: SOUTH OF LOADING GARAGE  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/22/2013 COMPLETION DATE: 11/22/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 16.5 FT  
 FINAL: 13.1 FT

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
5							
	B-1-8.0 10:45.	8.0 FT.			CL	1.0 - 12.0 ft. <b>Clay (CL)</b> Hand augered to 4 ft. Dark brown, moist, stiff, no odor or staining. Becoming grey-brown at 9 ft., increasing silt with depth.	
10							
	B-1-12.0 10:50	12.0 FT.			CL	12.0 - 15.0 ft. <b>Clay (CL)</b> Brown, firm, moist, no odors or staining.	
15							
	B-1-16.0 10:55	16.0 FT.			SP	15.0 - 17.5 ft. <b>Sand (SP)</b> Brown, very fine to medium grained, moist, slight to moderate hydrocarbon odor and staining, wet at 16.5 ft.	
					ML	17.5 - 20.0 ft. <b>Clayey Silt (ML)</b> Brown, slightly to moderately sand, very fine grained, no odor or staining.	
20							
						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-1-GW WAS TAKEN AT 11:10	
25							

# LOG OF BORING

BORING NUMBER : **B-2**  
 BORING LOCATION: WEST OF LOADING GARAGE  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/22/2013 COMPLETION DATE: 11/22/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 15.5 FT  
 FINAL: 12.5 FT

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL ▽ - INITIAL ▽ - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
					<b>GP</b>	1.0 - 2.0 ft. <b>Gravel (GP)</b> - Hand augered.	
					<b>CL</b>	2.0 - 8.0 ft. <b>Clay (CL)</b> Hand augered to 4 ft. Dark brown, moist, stiff, no odor or staining, slightly silty.	
5					<b>CL</b>	8.0 - 14.0 ft. <b>Clay (CL)</b> Dark brown, moist, stiff, no odor or staining, slightly silty. Hydrocarbon staining beginning at 8 ft. slight to moderate hydrocarbon odor.	
10	B-2-9.0 10:00.	9.0 FT.					
	B-2-12.0 10:05	12.0 FT.		▽			
15	B-2-15.0 10:10	15.0 FT.		▽	<b>SP</b>	14.0 - 16.5 ft. <b>Sand (SP)</b> Green-brown, moist to wet at 15.5 ft., fine to coarse grain, slightly silty/clayey, slight to moderate hydrocarbon odor	
					<b>ML</b>	16.5 - 20.0 ft. <b>Clayey Silt (ML)</b> Brown, wet, soft, moderately sandy, very fine grain, no odor or staining.	
20							
						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-2-GW WAS TAKEN AT 10:25	
25							

# LOG OF BORING

BORING NUMBER : **B-3**  
 BORING LOCATION: WNW OF LOADING GARAGE  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/21/2013 COMPLETION DATE: 11/21/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 16.5 FT  
 FINAL: 14.7 FT
















DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL ▽ - INITIAL ▽ - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
					<b>GP</b>	1.0 - 3.0 ft. <b>Gravel (GP)</b> - Hand augered.	
5					<b>CL</b>	3.0 - 8.0 ft. <b>Clay (CL)</b> Hand augered to 4 ft. Dark brown, moist, stiff, no odor or staining, slightly silty, no odor or staining.	
	B-3-8.0 12:35	8.0 FT.					
10					<b>CL</b>	8.0 - 12.0 ft. <b>Clay (CL)</b> Mottled olive grey and brown, moist, stiff, slight hydrocarbon odors.	
	B-3-12.0 12:40	12.0 FT.					
15				▽	<b>SP</b>	12.0 - 16.5 ft. <b>Sand (SP)</b> Olive grey, moist to wet, very fine to coarse grain sand, some fine gravel, slightly silty/clayey, moderate hydrocarbon odors, decrease with depth.	
	B-3-15.0 12:45	15.0 FT.		▽			
					<b>ML</b>	16.5 - 18.0 ft. <b>Clayey Silt (ML)</b> Brown, wet, slight to moderate clay, none to very slight hydrocarbon odor decreasing with depth.	
					<b>SM</b>	18.0 - 20.0 ft. <b>Silty Sand (SM)</b> Brown, wet, no odor or stain.	
20							
						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-3-GW WAS TAKEN AT 13:00	
25							

# LOG OF BORING

BORING NUMBER : **B-4**  
 BORING LOCATION: WNW OF B-3  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/22/2013 COMPLETION DATE: 11/22/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 15.5 FT  
 FINAL: 15.2 FT



DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
5						1.0 - 12.0 ft. <b>Clay (CL)</b> Hand augered to 4 ft. Dark brown, moist, stiff, slightly silty, no odor or staining. Becoming light brown at 9 ft., Increasing silt with depth.	
	B-4-8.0 8:40	8.0 FT.					
10						12.0 - 13.5 ft. <b>Silty Clay (CL)</b> Light brown, moist, stiff, slightly sandy, to very fine grain, sand increasing with depth.	
	B-4-12.0 8:45	12.0 FT.					
15						13.5 - 17.0 ft. <b>Sand (SP)</b> Olive grey, brown, moist to wet at 15.5 ft., fine to coarse grain, slightly silty/clayey, slight to moderate hydrocarbon odor.	
	B-4-15.0 8:50	15.0 FT.					
						17.0 - 19.5 ft. <b>Clayey Silt (ML)</b> Light brown, moderately sandy, very fine grain, no odor or staining, wet, soft.	
20						19.5 - 20.0 ft. <b>Sand (SP)</b> Brown, wet, very fine to fine, no odor or stain, slightly clayey.	
						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-4-GW WAS TAKEN AT 9:05 SOME PRODUCT IN GROUNDWATER SAMPLE	
25							

# LOG OF BORING

BORING NUMBER : **B-5**  
 BORING LOCATION: INSIDE LOADING GARAGE  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/21/2013 COMPLETION DATE: 11/21/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 16.5 FT  
 FINAL: 12.2 FT














DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL		WELL INSTALLATION & CONSTRUCTION
						DESCRIPTION	USCS	
						0.0 - 1.0 ft.	Concrete and base rock	
					CL	1.0 - 4.0 ft.	<b>Clay (CL)</b> Dark brown, moist, stiff, slightly silty, no odor or staining.	
5	B-5-4.0 8:50	4.0 FT.			CL	4.0 - 8.0 ft.	<b>Clay (CL)</b> Dark brown to brown, slight hydrocarbon odor and staining beginning at 6 ft., decreasing with depth at 8.5 ft., becoming molted grey and brown.	
	B-5-7.0 8:55	7.0 FT.			CL	8.0 - 12.0 ft.	<b>Clay (CL)</b> Brown, with slightly molted grey hydrocarbon staining and slight hydrocarbon odors.	
10	B-5-12.0 9:00	12.0 FT.			CL	12.0 - 14.0 ft.	<b>Sandy Clay (CL)</b> Olive grey, very fine to fine grain, slight hydrocarbon odor.	
					SC	14.0 - 15.0 ft.	<b>Clayey Sand (SC)</b> Olive grey, slight hydrocarbon odor.	
15	B-5-15.0 9:05	15.0 FT.			SP	15.0 - 17.0 ft.	<b>Sand (SP)</b> Olive grey, moist to wet, fine to coarse grain sand, some fine gravel, slight hydrocarbon odor, slightly silty/clayey. Wet from 16 ft. to 17 ft, very to slightly odor and staining.	
					ML	17.0 - 20.0 ft.	<b>Silt (ML)</b> Brown, wet, slightly sandy, very fine grain, no odor or staining.	
20	TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-5-GW WAS TAKEN AT 9:30							
25								

# LOG OF BORING

BORING NUMBER : **B-6**  
 BORING LOCATION: SOUTH OF MW-3  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/21/2013 COMPLETION DATE: 11/21/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 14.0 FT  
 FINAL: 13.4 FT












DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
						1.0 - 4.0 ft. <b>Sand (SP)</b> - Hand augered Brown to olive, very fine grain, slightly clayey, no odor or staining.	
						4.0 - 5.0 ft. <b>Sandy Clay (CL)</b> - Hand augered. Grey, moist, no odor or staining.	
5						5.0 - 8.0 ft. <b>No Recovery</b>	
	B-6-8.0 10:35	8.0 FT.				8.0 - 14.0 ft. <b>Clay (CL)</b> Brown, with some grey, moist, soft, none to slight hydrocarbon odor, slightly silty. Becoming sandy clay from 12 ft to 14 ft.	
10	B-6-12.0 10:40	12.0 FT.					
	B-6-15.0 10:45	15.0 FT.				14.0 - 16.0 ft. <b>Sand (SP)</b> Grey-brown, wet, moderate to strong hydrocarbon odor, very fine to coarse grain sand, some fine gravel, slightly silty/clayey, odor, staining at 15.5 ft.	
						16.0 - 20.0 ft. <b>Sand (SP)</b> Brown, wet, very fine to coarse grain sand, some fine gravel, slightly silty/clayey, no odor, or staining.	
20						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-6-GW WAS TAKEN AT 11:00	
25							

# LOG OF BORING

BORING NUMBER : **B-7**  
 BORING LOCATION: WEST SIDE OF MARKET STREET  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/21/2013 COMPLETION DATE: 11/21/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 15.0 FT  
 FINAL: 14.1 FT

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL  - INITIAL  - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock - Hand augered.	
5						1.0 - 8.0 ft. <b>Clay (CL)</b> - Hand augered to 4 ft. Dark brown, moist, stiff, slightly silty, no odor or staining.	
	B-7-8.0 13:40	8.0 FT.					
10						8.0 - 15.0 ft. <b>Silty Clay (CL)</b> Grey-brown, moist, stiff, slightly sandy, very fine to fine grain, no hydrocarbon odor or staining. Increasing sand content with depth.	
	B-7-12.0 13:45	12.0 FT.					
15						15.0 - 16.0 ft. <b>Sand (SP)</b> Brown, wet, very fine to coarse grain sand, slightly silty/clayey, no odor or staining.	
	B-7-16.0 13:50	16.0 FT.					
						16.0 - 20.0 ft. <b>Sandy Silt (ML)</b> Brown, wet, very fine to fine grain, no odor, or staining.	
20						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-7-GW WAS TAKEN AT 14:05	
25							

# LOG OF BORING

BORING NUMBER : **B-8**  
 BORING LOCATION: WEST SIDE OF MARKET STREET  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/21/2013 COMPLETION DATE: 11/21/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: 15.0 FT  
 FINAL: 12.8 FT

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL ▽ - INITIAL ▼ - FINAL	USCS	LOG OF MATERIAL	WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft. Concrete and base rock	
					CL	1.0 - 5.5 ft. <b>Clay (CL)</b> Dark brown, moist, stiff, slightly silty, no odor or staining.	
5					CL	.5.5 - 15.0 ft. <b>Silty Clay (CL)</b> Grey-brown, moist, stiff, slightly sandy, very fine grain, no hydrocarbon odor or staining; brown from 8 - 12 ft.; sand increasing with depth.	
	B-8-8.0 14:35	8.0 FT.					
10							
	B-8-12.0 14:40	12.0 FT.		▼			
15							
	B-8-16.0 14:45	16.0 FT.		▽	SP	15.0 - 17.0 ft. <b>Sand (SP)</b> Brown, wet, fine to coarse grain, slightly silty/clayey, no odor or staining.	
					ML	17.0 - 20.0 ft. <b>Sandy Silt (ML)</b> Brown, wet, soft, very fine to fine grain, no odor, or staining.	
20							
						TOTAL DEPTH: 20 FEET BGS. GROUNDWATER SAMPLE B-8-GW WAS TAKEN AT 15:00	
25							



# LOG OF BORING

BORING NUMBER : **B-9**  
 BORING LOCATION: SOUTH OF MW-1  
 PROJECT NAME: 3924 MARKET STREET UST SITE  
 BORING TYPE: SOIL BORING  
 LOGGED BY: JIM GRIBI, PG  
 START DATE: 11/22/2013 COMPLETION DATE: 11/22/2013



DRILLING CONTRACTOR: CASCADE DRILLING  
 DRILLING METHOD: DIRECT PUSH  
 BOREHOLE DIAMETER: 2.5 INCHES  
 COMPLETION METHOD: NA  
 BORING TOTAL DEPTH: 20.0 FEET  
 GROUNDWATER DEPTH: INITIAL: NONE  
 FINAL: NOT MEASURED

DEPTH SCALE (FEET)	SAMPLE NO.	SAMPLE DEPTH	INTERVAL	PID READING & WATER LEVEL - INITIAL - FINAL	USCS	LOG OF MATERIAL		WELL INSTALLATION & CONSTRUCTION
						0.0 - 1.0 ft.	Concrete and base rock - Hand augered.	
5					CL	1.0 - 15.5 ft.	<b>Clay (Cl)</b> Hand augered to 4.0 ft. Dark brown, moist, stiff, no hydrocarbon odor or staining. Grey-brown at 9 ft., silt increasing with depth, brown at 12.0 - 15.5 ft.	
	B-9-8.0 13:00	8.0 FT.						
10					CL			
	B-9-12.0 13:05	12.0 FT.						
15					SP	15.5 - 16.0 ft.	<b>Sand (SP)</b> Brown, very moist, fine to coarse grain, slightly silty/clayey, no odor or staining.	
	B-9-16.0 13:10	16.0 FT.			ML	16.0 - 20.0 ft.	<b>Clayey Sand (SC)</b> Very silty/clayey, no odor or staining. Wet at 16.5 ft.	
20								
							NO WATER COMES IN AFTER 30 MINUTES. HYDROPUNCH TO 24.0 FEET - PLENTY OF WATER	
25							TOTAL DEPTH: 24 FEET BGS. GROUNDWATER SAMPLE B-9-GW WAS TAKEN AT 14:10	

**APPENDIX C**

**LABORATORY DATA REPORT AND  
CHAIN OF CUSTODY RECORDS**



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

10 December 2013

Jim Gribi  
Gribi Associates  
1090 Adam Street, Suite K  
Benicia, CA 94510  
RE: Atthowe-Market Street

Enclosed are the results of analyses for samples received by the laboratory on 11/26/13 08:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Katherine RunningCrane  
Project Manager



25712 Commercentre Drive  
Lake Forest, California 92630  
949.297.5020 Phone  
949.297.5027 Fax

Gribi Associates 1090 Adam Street, Suite K Benicia CA, 94510	Project: Atthowe-Market Street Project Number: [none] Project Manager: Jim Gribi	Reported: 12/10/13 15:17
--	--	-----------------------------

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-1-8.0	T132539-01	Soil	11/22/13 10:45	11/26/13 08:40
B-1-12.0	T132539-02	Soil	11/22/13 10:50	11/26/13 08:40
B-1-16.0	T132539-03	Soil	11/22/13 10:55	11/26/13 08:40
B-1-GW	T132539-04	Water	11/22/13 11:10	11/26/13 08:40
B-2-9.0	T132539-05	Soil	11/22/13 10:00	11/26/13 08:40
B-2-12.0	T132539-06	Soil	11/22/13 10:05	11/26/13 08:40
B-2-15.0	T132539-07	Soil	11/22/13 10:10	11/26/13 08:40
B-2-GW	T132539-08	Water	11/22/13 10:25	11/26/13 08:40
B-3-8.0	T132539-09	Soil	11/21/13 12:35	11/26/13 08:40
B-3-12.0	T132539-10	Soil	11/21/13 12:40	11/26/13 08:40
B-3-15.0	T132539-11	Soil	11/21/13 12:45	11/26/13 08:40
B-3-GW	T132539-12	Water	11/22/13 13:00	11/26/13 08:40
B-4-8.0	T132539-13	Soil	11/22/13 08:40	11/26/13 08:40
B-4-12.0	T132539-14	Soil	11/22/13 08:45	11/26/13 08:40
B-4-15.0	T132539-15	Soil	11/22/13 08:50	11/26/13 08:40
B-4-GW	T132539-16	Water	11/22/13 09:05	11/26/13 08:40
B-5-7.0	T132539-17	Soil	11/21/13 08:55	11/26/13 08:40
B-5-12.0	T132539-18	Soil	11/21/13 09:00	11/26/13 08:40
B-5-15.0	T132539-19	Soil	11/21/13 09:05	11/26/13 08:40
B-5-GW	T132539-20	Water	11/21/13 09:30	11/26/13 08:40
B-6-8.0	T132539-21	Soil	11/21/13 10:35	11/26/13 08:40
B-6-12.0	T132539-22	Soil	11/21/13 10:40	11/26/13 08:40
B-6-15.0	T132539-23	Soil	11/21/13 10:45	11/26/13 08:40
B-6-GW	T132539-24	Water	11/21/13 11:00	11/26/13 08:40
B-7-8.0	T132539-25	Soil	11/21/13 13:40	11/26/13 08:40
B-7-12.0	T132539-26	Soil	11/21/13 13:45	11/26/13 08:40

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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B-7-16.0	T132539-27	Soil	11/21/13 13:50	11/26/13 08:40
B-7-GW	T132539-28	Water	11/21/13 14:05	11/26/13 08:40
B-8-8.0	T132539-29	Soil	11/21/13 14:35	11/26/13 08:40
B-8-12.0	T132539-30	Soil	11/21/13 14:40	11/26/13 08:40
B-8-16.0	T132539-31	Soil	11/21/13 14:45	11/26/13 08:40
B-8-GW	T132539-32	Water	11/21/13 15:00	11/26/13 08:40
B-9-8.0	T132539-33	Soil	11/22/13 13:00	11/26/13 08:40
B-9-12.0	T132539-34	Soil	11/22/13 13:05	11/26/13 08:40
B-9-16.0	T132539-35	Soil	11/22/13 13:10	11/26/13 08:40
B-9-GW	T132539-36	Water	11/22/13 14:10	11/26/13 08:40

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**B-1-8.0  
 T132539-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**SunStar Laboratories, Inc.**

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	106 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	72.5 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	65-135	"	"	"	"	"	"

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**B-1-12.0**  
**T132539-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	107 %	65-135							

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	"
Surrogate: p-Terphenyl	77.7 %	65-135							

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	107 %	65-135							

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**B-1-16.0**  
**T132539-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C6-C12 (GRO)	730	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	101 %	65-135							

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C13-C28 (DRO)	190	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C	
C29-C40 (MORO)	250	10	"	"	"	"	"	"	"
Surrogate: p-Terphenyl	77.2 %	65-135							

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	93.2 %	65-135							

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**B-1-GW**  
**T132539-04 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	120 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl	68.4 %	65-135	"	"	"	"	"	"
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl	68.4 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	111 %	65-135	"	"	"	"	"	"

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**B-2-9.0**  
**T132539-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	1200	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	120 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	290	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	280	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	78.1 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	65-135	"	"	"	"	"	"

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**B-2-12.0**  
**T132539-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	590	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	106 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	43	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl 76.4 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 102 % 65-135 " " " "

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**B-2-15.0**  
**T132539-07 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	840	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	101 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl 78.0 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	6.9	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 99.6 % 65-135 " " " "

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**B-2-GW**  
**T132539-08 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene		104 %	65-135	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl		71.3 %	65-135	"	"	"	"	"
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl		71.3 %	65-135	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		107 %	65-135	"	"	"	"	"

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**B-3-8.0**  
**T132539-09 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene		103 %	65-135	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl		73.7 %	65-135	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		105 %	65-135	"	"	"	"	"

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**B-3-12.0**  
**T132539-10 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	107 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	43	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	74.4 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	101 %	65-135	"	"	"	"	"	"
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**B-3-15.0**  
**T132539-11 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	1200	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	117 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	280	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	290	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	78.3 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	88.2 %	65-135	"	"	"	"	"	"
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Benicia CA, 94510 Project Manager: Jim Gribi 12/10/13 15:17

**B-3-GW**  
**T132539-12 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	84	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	100 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	3.1	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl	70.1 %	65-135	"	"	"	"	"	"
Diesel Range Hydrocarbons	2400	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl	70.1 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	95.3 %	65-135	"	"	"	"	"	"

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1090 Adam Street, Suite K Project Number: [none] Reported:  
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**B-4-8.0**  
**T132539-13 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	98.2 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	73.5 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	65-135	"	"	"	"	"	"

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**B-4-12.0**  
**T132539-14 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	106 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	11	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	74.7 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	103 %	65-135	"	"	"	"	"	"
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**B-4-15.0**  
**T132539-15 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	1100	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	101 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	490	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	570	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	81.1 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	69.7 %	65-135	"	"	"	"	"	"
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**B-4-GW**  
**T132539-16 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	9900	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C	M-01
Surrogate: 4-Bromofluorobenzene	407 %	65-135	"	"	"	"	"	"	S-GRO

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	5.1	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C	
Surrogate: p-Terphenyl	70.5 %	65-135	"	"	"	"	"	"	
Diesel Range Hydrocarbons	4700	50	ug/l	"	"	"	"	"	"
Surrogate: p-Terphenyl	70.5 %	65-135	"	"	"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	1.0	1.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	85.6 %	65-135	"	"	"	"	"	"	

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**B-5-7.0**  
**T132539-17 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	690	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	114 %	65-135	"	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	70	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl	75.2 %	65-135	"	"	"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	65-135	"	"	"	"	"	"	

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**B-5-12.0**  
**T132539-18 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	580	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	109 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	18	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl 79.5 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 116 % 65-135 " " " "

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**B-5-15.0**  
**T132539-19 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	1600	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	126 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	11	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl 77.9 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 50.5 % 65-135 " " " " S-04

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**B-5-GW**  
**T132539-20 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	87	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	109 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl	66.0 %	65-135	"	"	"	"	"	"
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl	66.0 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	107 %	65-135	"	"	"	"	"	"

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**B-6-8.0**  
**T132539-21 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	89.1 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	75.9 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	48.3 %	65-135	"	"	"	"	"	S-04

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**B-6-12.0**  
**T132539-22 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	101 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	10	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	73.5 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	50.1 %	65-135	"	"	"	"	"	"	S-04
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**B-6-15.0**  
**T132539-23 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	2400	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	116 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	740	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	910	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	79.5 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	9.40 %	65-135	"	"	"	"	"	"	S-04
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**B-6-GW**  
**T132539-24 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	123 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl	67.1 %	65-135	"	"	"	"	"	"
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl	67.1 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	110 %	65-135	"	"	"	"	"	"

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Gribi Associates Project: Atthowe-Market Street  
 1090 Adam Street, Suite K Project Number: [none] Reported:  
 Benicia CA, 94510 Project Manager: Jim Gribi 12/10/13 15:17

**B-7-8.0**  
**T132539-25 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	100 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	76.0 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	65-135	"	"	"	"	"	"

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**B-7-12.0**  
**T132539-26 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112632	11/26/13	12/04/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		104 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112627	11/26/13	11/27/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		76.8 %	65-135		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112630	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	65-135		"	"	"	"	

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**B-7-16.0**  
**T132539-27 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C	M-01
Surrogate: 4-Bromofluorobenzene		%	65-135		"	"	"	"	S-04

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		74.9 %	65-135		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		45.7 %	65-135		"	"	"	"	S-04

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**B-7-GW**  
**T132539-28 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		122 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C	
Surrogate: p-Terphenyl		66.6 %	65-135		"	"	"	"	
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"	
Surrogate: p-Terphenyl		66.6 %	65-135		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	65-135		"	"	"	"	

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**B-8-8.0**  
**T132539-29 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene		89.7 %	65-135		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		74.2 %	65-135		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	65-135		"	"	"	"	

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**B-8-12.0**  
**T132539-30 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	67.7 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	72.8 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	106 %	65-135	"	"	"	"	"	"
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**B-8-16.0**  
**T132539-31 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	25.4 %	65-135	"	"	"	"	"	S-04

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"

Surrogate: p-Terphenyl	73.4 %	65-135	"	"	"	"	"	"
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**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene	%	65-135	"	"	"	"	"	S-04
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**B-8-GW**  
**T132539-32 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	121 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C
Surrogate: p-Terphenyl	68.1 %	65-135	"	"	"	"	"	"
Diesel Range Hydrocarbons	ND	50	ug/l	"	"	"	"	"
Surrogate: p-Terphenyl	68.1 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B
Toluene	ND	1.0	"	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"	"
m,p-Xylene	ND	2.0	"	"	"	"	"	"
o-Xylene	ND	1.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	114 %	65-135	"	"	"	"	"	"

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**B-9-8.0**  
**T132539-33 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C
Surrogate: 4-Bromofluorobenzene	69.0 %	65-135	"	"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C
C29-C40 (MORO)	ND	10	"	"	"	"	"	"
Surrogate: p-Terphenyl	71.2 %	65-135	"	"	"	"	"	"

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B
Toluene	ND	5.0	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	0.395 %	65-135	"	"	"	"	"	S-04

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**B-9-12.0**  
**T132539-34 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	113 %	65-135							

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	"

Surrogate: p-Terphenyl 72.5 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 65.7 % 65-135 " " " "

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**B-9-16.0**  
**T132539-35 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	ND	500	ug/kg	1	3112633	11/26/13	12/03/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	92.0 %	65-135							

**Extractable Petroleum Hydrocarbons by 8015C**

C13-C28 (DRO)	ND	10	mg/kg	1	3112628	11/26/13	11/28/13	EPA 8015C	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	"

Surrogate: p-Terphenyl 78.8 % 65-135 " " " "

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	ND	5.0	ug/kg	1	3112631	11/26/13	12/05/13	EPA 8021B	
Toluene	ND	5.0	"	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"	"
m,p-Xylene	ND	10	"	"	"	"	"	"	"
o-Xylene	ND	5.0	"	"	"	"	"	"	"

Surrogate: 4-Bromofluorobenzene 65.7 % 65-135 " " " "

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**B-9-GW  
T132539-36 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

**Purgeable Petroleum Hydrocarbons by EPA 8015C**

C6-C12 (GRO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C6-C12 (GRO)	ND	50	ug/l	1	3112635	11/26/13	12/03/13	EPA 8015C	
Surrogate: 4-Bromofluorobenzene	121 %	65-135							

**Extractable Petroleum Hydrocarbons by 8015C**

C29-C40 (MORO)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C29-C40 (MORO)	ND	0.50	mg/l	1	3112625	11/26/13	11/28/13	EPA 8015C	
Surrogate: p-Terphenyl	67.8 %	65-135							
Diesel Range Hydrocarbons	ND	50	ug/l						
Surrogate: p-Terphenyl	67.8 %	65-135							

**Volatile Organic Compounds by EPA Method 8021B**

Benzene	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	3112706	11/27/13	12/05/13	EPA 8021B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
m,p-Xylene	ND	2.0	"	"	"	"	"	"	
o-Xylene	ND	1.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	114 %	65-135							

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1090 Adam Street, Suite K Project Number: [none] Reported:  
Benicia CA, 94510 Project Manager: Jim Gribi 12/10/13 15:17

**Purgeable Petroleum Hydrocarbons by EPA 8015C - Quality Control  
SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3112632 - EPA 5030 GC**

Blank (3112632-BLK1)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (3112632-BLK1)	ND	500	ug/kg						Prepared: 11/26/13 Analyzed: 12/04/13
C6-C12 (GRO)	116			100		116 65-135			
Surrogate: 4-Bromofluorobenzene									

**LCS (3112632-BS1)**

C6-C12 (GRO)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
C6-C12 (GRO)	13100	500	ug/kg	13800	361	95.2 75-125			Prepared: 11/26/13 Analyzed: 12/04/13
Surrogate: 4-Bromofluorobenzene	85.4			100		85.4 65-135			

**Matrix Spike (3112632-MS1)**

C6-C12 (GRO)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
C6-C12 (GRO)	11400	500	ug/kg	13800	361	80.2 65-135			Source: T132539-01 Prepared: 11/26/13 Analyzed: 12/04/13
Surrogate: 4-Bromofluorobenzene	75.2			100		75.2 65-135			

**Matrix Spike Dup (3112632-MSD1)**

C6-C12 (GRO)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
C6-C12 (GRO)	12700	500	ug/kg	13800	361	89.9 65-135	11.1	20	Source: T132539-01 Prepared: 11/26/13 Analyzed: 12/04/13
Surrogate: 4-Bromofluorobenzene	77.3			100		77.3 65-135			

**Batch 3112633 - EPA 5030 GC**

Blank (3112633-BLK1)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (3112633-BLK1)	ND	500	ug/kg						Prepared: 11/26/13 Analyzed: 12/03/13
C6-C12 (GRO)	98.9			100		98.9 65-135			
Surrogate: 4-Bromofluorobenzene									

**LCS (3112633-BS1)**

C6-C12 (GRO)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
C6-C12 (GRO)	11400	500	ug/kg	13400	85.1	85.1 75-125			Prepared: 11/26/13 Analyzed: 12/03/13
Surrogate: 4-Bromofluorobenzene	86.1			100		86.1 65-135			

**Matrix Spike (3112633-MS1)**

C6-C12 (GRO)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
C6-C12 (GRO)	2290	500	ug/kg	13800	479	13.2 65-135			Source: T132539-27 Prepared: 11/26/13 Analyzed: 12/03/13
Surrogate: 4-Bromofluorobenzene	16.4			100		16.4 65-135			QM-05 S-04

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**Purgeable Petroleum Hydrocarbons by EPA 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3112633 - EPA 5030 GC**

Matrix Spike Dup (3112633-MSD1)	Source: T132539-27	Prepared: 11/26/13	Analyzed: 12/03/13							
C6-C12 (GRO)	920	500	ug/kg	13600	479	3.23	65-135	85.5	20	QM-05
Surrogate: 4-Bromofluorobenzene	9.60	"	"	100	9.60	65-135				S-04

**Batch 3112635 - EPA 5030 GC**

Blank (3112635-BLK1)	Prepared: 11/26/13	Analyzed: 12/03/13			
C6-C12 (GRO)	ND	50	ug/l		
Surrogate: 4-Bromofluorobenzene	106	"	100	106	65-135

LCS (3112635-BS1)	Prepared: 11/26/13	Analyzed: 12/03/13				
C6-C12 (GRO)	5540	50	ug/l	5500	101	75-125
Surrogate: 4-Bromofluorobenzene	80.1	"	100	80.1	65-135	

Matrix Spike (3112635-MS1)	Source: T132543-01	Prepared: 11/26/13	Analyzed: 12/03/13				
C6-C12 (GRO)	20800	50	ug/l	5500	2180	339	65-135
Surrogate: 4-Bromofluorobenzene	96.6	"	100	96.6	65-135		

Matrix Spike Dup (3112635-MSD1)	Source: T132543-01	Prepared: 11/26/13	Analyzed: 12/03/13							
C6-C12 (GRO)	19600	50	ug/l	5500	2180	317	65-135	6.15	20	QM-05
Surrogate: 4-Bromofluorobenzene	74.9	"	100	74.9	65-135					

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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 3112625 - EPA 3510C GC**

Blank (3112625-BLK1)	Prepared: 11/26/13	Analyzed: 11/28/13				
C13-C28 (DRO)	ND	0.50	mg/l			
Diesel Range Hydrocarbons	ND	50	ug/l			
C29-C40 (MORO)	ND	0.50	mg/l			
Surrogate: p-Terphenyl	2680	"	ug/l	4000	67.1	65-135
Surrogate: p-Terphenyl	2.68	"	mg/l	4.00	67.1	65-135

LCS (3112625-BS1)	Prepared: 11/26/13	Analyzed: 11/28/13				
C13-C28 (DRO)	17.8	0.50	mg/l	20.0	89.2	75-125
Diesel Range Hydrocarbons	17800	50	ug/l	20000	89.2	75-125
Surrogate: p-Terphenyl	2630	"	ug/l	4000	65.7	65-135
Surrogate: p-Terphenyl	2.63	"	mg/l	4.00	65.7	65-135

Matrix Spike (3112625-MS1)	Source: T132539-04	Prepared: 11/26/13	Analyzed: 11/28/13				
C13-C28 (DRO)	18.8	0.50	mg/l	20.0	ND	94.1	75-125
Diesel Range Hydrocarbons	18800	50	ug/l	20000	ND	94.1	75-125
Surrogate: p-Terphenyl	2730	"	ug/l	4000	68.2	65-135	
Surrogate: p-Terphenyl	2.73	"	mg/l	4.00	68.2	65-135	

Matrix Spike Dup (3112625-MSD1)	Source: T132539-04	Prepared: 11/26/13	Analyzed: 11/28/13						
Diesel Range Hydrocarbons	17600	50	ug/l	20000	ND	88.2	75-125	6.50	20
C13-C28 (DRO)	17.6	0.50	mg/l	20.0	ND	88.2	75-125	6.50	20
Surrogate: p-Terphenyl	2680	"	ug/l	4000	67.0	65-135			
Surrogate: p-Terphenyl	2.68	"	mg/l	4.00	67.0	65-135			

**Batch 3112627 - EPA 3550B GC**

Blank (3112627-BLK1)	Prepared: 11/26/13	Analyzed: 11/27/13			
C13-C28 (DRO)	ND	10	mg/kg		
C29-C40 (MORO)	ND	10	"		
Surrogate: p-Terphenyl	75.0	"	100	75.0	65-135

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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 3112627 - EPA 3550B GC**

LCS (3112627-BS1)		Prepared: 11/26/13 Analyzed: 11/27/13								
C13-C28 (DRO)	490	10	mg/kg	500	97.7	75-125				
Surrogate: p-Terphenyl	76.1		"	100	76.1	65-135				

Matrix Spike (3112627-MS1)		Source: T132539-01		Prepared: 11/26/13 Analyzed: 11/27/13						
C13-C28 (DRO)	470	10	mg/kg	500	7.8	93.3	75-125			
Surrogate: p-Terphenyl	79.8		"	100	79.8	65-135				

Matrix Spike Dup (3112627-MSD1)		Source: T132539-01		Prepared: 11/26/13 Analyzed: 11/27/13						
C13-C28 (DRO)	470	10	mg/kg	500	7.8	91.8	75-125	1.60	20	
Surrogate: p-Terphenyl	77.5		"	100	77.5	65-135				

**Batch 3112628 - EPA 3550B GC**

Blank (3112628-BLK1)		Prepared: 11/26/13 Analyzed: 11/28/13								
C13-C28 (DRO)	ND	10	mg/kg							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	69.5		"	100	69.5	65-135				

LCS (3112628-BS1)		Prepared: 11/26/13 Analyzed: 11/28/13								
C13-C28 (DRO)	470	10	mg/kg	500	93.8	75-125				
Surrogate: p-Terphenyl	68.9		"	100	68.9	65-135				

Matrix Spike (3112628-MS1)		Source: T132538-01		Prepared: 11/26/13 Analyzed: 11/28/13						
C13-C28 (DRO)	500	10	mg/kg	500	ND	99.9	75-125			
Surrogate: p-Terphenyl	76.1		"	99.9	76.2	65-135				

Matrix Spike Dup (3112628-MSD1)		Source: T132538-01		Prepared: 11/26/13 Analyzed: 11/28/13						
C13-C28 (DRO)	500	10	mg/kg	500	ND	99.7	75-125	0.201	20	
Surrogate: p-Terphenyl	78.1		"	99.9	78.2	65-135				

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**Volatile Organic Compounds by EPA Method 8021B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 3112630 - EPA 5030 GC**

Blank (3112630-BLK1)		Prepared: 11/26/13 Analyzed: 12/05/13								
Benzene	ND	5.0	ug/kg							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: 4-Bromofluorobenzene	115		"	100	115	65-135				

LCS (3112630-BS1)		Prepared: 11/26/13 Analyzed: 12/05/13								
Benzene	243	5.0	ug/kg	245	99.3	70-130				
Toluene	250	5.0	"	245	102	70-130				
Ethylbenzene	246	5.0	"	245	100	70-130				
m,p-Xylene	482	10	"	490	98.4	70-130				
o-Xylene	244	5.0	"	245	99.6	70-130				
Surrogate: 4-Bromofluorobenzene	96.9		"	100	96.9	65-135				

Matrix Spike (3112630-MS1)		Source: T132539-01		Prepared: 11/26/13 Analyzed: 12/05/13						
Benzene	229	5.0	ug/kg	246	ND	92.9	70-130			
Toluene	241	5.0	"	246	1.59	97.1	70-130			
Ethylbenzene	231	5.0	"	246	ND	93.9	70-130			
m,p-Xylene	460	10	"	493	ND	93.4	70-130			
o-Xylene	230	5.0	"	246	ND	93.3	70-130			
Surrogate: 4-Bromofluorobenzene	99.5		"	100	99.5	65-135				

Matrix Spike Dup (3112630-MSD1)		Source: T132539-01		Prepared: 11/26/13 Analyzed: 12/05/13						
Benzene	244	5.0	ug/kg	248	ND	98.8	70-130	6.58	20	
Toluene	252	5.0	"	248	1.59	101	70-130	4.71	20	
Ethylbenzene	242	5.0	"	248	ND	97.9	70-130	4.69	20	
m,p-Xylene	486	10	"	495	ND	98.2	70-130	5.52	20	
o-Xylene	241	5.0	"	248	ND	97.2	70-130	4.64	20	
Surrogate: 4-Bromofluorobenzene	101		"	100	101	65-135				

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**Volatile Organic Compounds by EPA Method 8021B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 3112631 - EPA 5030 GC**

**Blank (3112631-BLK1)** Prepared: 11/26/13 Analyzed: 12/05/13

Benzene	ND	5.0	ug/kg							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	10	"							
o-Xylene	ND	5.0	"							
Surrogate: 4-Bromofluorobenzene	121		"	100		121	65-135			

**LCS (3112631-BS1)** Prepared: 11/26/13 Analyzed: 12/05/13

Benzene	247	5.0	ug/kg	250		98.7	70-130			
Toluene	255	5.0	"	250		102	70-130			
Ethylbenzene	244	5.0	"	250		97.7	70-130			
m,p-Xylene	490	10	"	500		98.0	70-130			
o-Xylene	238	5.0	"	250		95.3	70-130			
Surrogate: 4-Bromofluorobenzene	96.6		"	100		96.6	65-135			

**Matrix Spike (3112631-MS1)** Source: T132539-27 Prepared: 11/26/13 Analyzed: 12/05/13

Benzene	216	5.0	ug/kg	250	ND	86.4	70-130			
Toluene	217	5.0	"	250	ND	86.7	70-130			
Ethylbenzene	202	5.0	"	250	ND	81.0	70-130			
m,p-Xylene	158	10	"	500	ND	31.5	70-130			QM-07
o-Xylene	199	5.0	"	250	ND	79.7	70-130			
Surrogate: 4-Bromofluorobenzene	109		"	100		109	65-135			

**Matrix Spike Dup (3112631-MSD1)** Source: T132539-27 Prepared: 11/26/13 Analyzed: 12/05/13

Benzene	264	5.0	ug/kg	244	ND	108	70-130	20.2	20	QM-07
Toluene	261	5.0	"	244	ND	107	70-130	18.5	20	
Ethylbenzene	243	5.0	"	244	ND	99.5	70-130	18.1	20	
m,p-Xylene	479	10	"	488	ND	98.2	70-130	101	20	QM-07
o-Xylene	241	5.0	"	244	ND	98.8	70-130	19.0	20	
Surrogate: 4-Bromofluorobenzene	101		"	100		101	65-135			

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**Volatile Organic Compounds by EPA Method 8021B - Quality Control**  
**SunStar Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 3112706 - EPA 5030 GC**

**Blank (3112706-BLK1)** Prepared: 11/27/13 Analyzed: 12/05/13

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
m,p-Xylene	ND	2.0	"							
o-Xylene	ND	1.0	"							
Surrogate: 4-Bromofluorobenzene	100		"	100		100	65-135			

**LCS (3112706-BS1)** Prepared: 11/27/13 Analyzed: 12/05/13

Benzene	124	1.0	ug/l	100		124	70-130			
Toluene	122	1.0	"	100		122	70-130			
Ethylbenzene	115	1.0	"	100		115	70-130			
m,p-Xylene	227	2.0	"	200		114	70-130			
o-Xylene	113	1.0	"	100		113	70-130			
Surrogate: 4-Bromofluorobenzene	98.0		"	100		98.0	65-135			

**Matrix Spike (3112706-MS1)** Source: T132539-04 Prepared: 11/27/13 Analyzed: 12/05/13

Benzene	123	1.0	ug/l	100	ND	123	70-130			
Toluene	120	1.0	"	100	0.488	119	70-130			
Ethylbenzene	113	1.0	"	100	ND	113	70-130			
m,p-Xylene	226	2.0	"	200	0.443	113	70-130			
o-Xylene	113	1.0	"	100	ND	113	70-130			
Surrogate: 4-Bromofluorobenzene	104		"	100		104	65-135			

**Matrix Spike Dup (3112706-MSD1)** Source: T132539-04 Prepared: 11/27/13 Analyzed: 12/05/13

Benzene	152	1.0	ug/l	100	ND	152	70-130	20.9	20	QM-07
Toluene	137	1.0	"	100	0.488	136	70-130	13.3	20	QM-07
Ethylbenzene	126	1.0	"	100	ND	126	70-130	10.2	20	
m,p-Xylene	246	2.0	"	200	0.443	123	70-130	8.11	20	
o-Xylene	123	1.0	"	100	ND	123	70-130	8.68	20	
Surrogate: 4-Bromofluorobenzene	111		"	100		111	65-135			

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Project: Atthowe-Market Street  
Project Number: [none]  
Project Manager: Jim Gribi

Reported:  
12/10/13 15:17

**Notes and Definitions**

- S-GRO Surrogate recovery high due to co-elution with gasoline range organics. Surrogate recovery for associated blank is within acceptance limits.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QM-07 The spike recovery and or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
- M-01 Analyses from different vials of this sample resulted in varied results. Highest observed concentrations were reported.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	MATRIX					METHOD PRESERVED	Analysis Request	Other	Comments	
		Date	Time		Water	Soil	Air	Sludge	Other					
01	B-1-8.0	11/22	1045	1	X					X	TPH-Gas, BTEX, (8015M/8021B)			
02	B-1-12.0	11/22	1050	1	X					X	TPH-Gas (8015M)			
03	B-1-16.0	11/22	1053	1	X					X	TPH-Diesel (8015M)			
04	B-1-6W	11/22	1110	6	X					X	TPH-Motor Oil (8015M)			
05	B-2-9.0	11/22	1000	1	X					X	TPH-Gas, BTEX, MTBE (8260B)			
06	B-2-12.0	11/22	1005	1	X					X	TPH-Gas, BTEX, 5 Oxygenates (8260B)			
07	B-2-15.0	11/22	1010	1	X					X	TPH-Gas, BTEX, 7 Oxygenates (8260B)			
08	B-2-6W	11/22	1025	6	X					X	5 Oxygenates (8260B)			
09	B-3-8.0	11/21	1235	1	X					X	Lead Scavengers (1,2 DCA & 1,2 EDB) (8260B)			
10	B-3-12.0	11/21	1240	1	X					X	VOC's - Full List (8260B)			
11	B-3-15.0	11/21	1245	1	X					X	Halogenated VOC's (8260B)			
12	B-3-6W	11/21	1300	6	X					X	SVOC's (8270)			
Relinquished By: <i>[Signature]</i>		Date: 11/25/13	Time: 1000	Received By: <i>[Signature]</i>	ICER 2.8 GOOD CONDITION HEAD SPACE ARSENIC DECLORINATED IN LAB APPROPRIATE CONTAINERS PRESERVED IN LAB									
Relinquished By: <i>[Signature]</i>		Date: 11/21/13	Time: 8:10	Received By: <i>[Signature]</i>	ICER 2.8 GOOD CONDITION HEAD SPACE ARSENIC DECLORINATED IN LAB APPROPRIATE CONTAINERS PRESERVED IN LAB									
Relinquished By: <i>[Signature]</i>		Date: 11/21/13	Time: 10:00	Received By: <i>[Signature]</i>	ICER 2.8 GOOD CONDITION HEAD SPACE ARSENIC DECLORINATED IN LAB APPROPRIATE CONTAINERS PRESERVED IN LAB									

**STD. TAT**

11/26/13

Pg 1 of 3

**SUNSTAR LABORATORIES**  
25712 COMMERCENTRE DRIVE  
LAKE FOREST, CA 92630  
Website: www.SUNSTARLABS.com Email: john@sunstarlabs.com  
Telephone: (949) 297-5020 Fax: (949) 297-5027

**CHAIN OF CUSTODY RECORD**  
TURN AROUND TIME  
 GeoTracker EDF  PDF  Excel  Write On (DW)

Analysis Request

Other

Comments

Filter Samples for Metals analysis: Yes/No

172539

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 25712 COMMERCENTRE DRIVE  
 LAKE FOREST, CA 92630  
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 Telephone: (949) 297-5020 Fax: (949) 297-5027

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME  RUSH 24 HR  48 HR  72 HR  5 DAY  
 GeoTracker EDF  PDF  Excel  Write On (DW)

Report To: James Grubi Bill To:  
 Company: Grubi Associates  
 1090 Adams Street, Suite K  
 Benicia, CA 94510 E-Mail:  
 Telephone: (707) 748-7743 Fax: (707) 748-7763  
 Client Name: Attavouc Global ID: 70600101187  
 Project Name: Attavouc - Market Street  
 Sampler Signature: \_\_\_\_\_

Analysis Request Other Comments  
 Filter Samples for Metals analysis: Yes/No

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers					METHOD PRESERVED
		Date	Time		Water	Soil	Air	Sludge	Other	
25	B-7-8.0	11/21	1340	1	X	X	X	X	X	X
26	B-7-12.0	11/21	1345	1	X	X	X	X	X	X
27	B-7-16.0	11/21	1350	1	X	X	X	X	X	X
28	D-7-600	11/21	1405	6	X	X	X	X	X	X
29	B-8-8.0	11/21	1435	1	X	X	X	X	X	X
30	B-8-12.0	11/21	1440	1	X	X	X	X	X	X
31	B-8-16.0	11/21	1445	1	X	X	X	X	X	X
32	B-8-600	11/21	1500	6	X	X	X	X	X	X
33	B-9-8.0	11/22	1300	1	X	X	X	X	X	X
34	B-9-12.0	11/22	1305	1	X	X	X	X	X	X
35	B-9-16.0	11/22	1310	1	X	X	X	X	X	X
36	B-9-600	11/22	1410	6	X	X	X	X	X	X

Requested By: \_\_\_\_\_  
 Date: 11/25/13  
 Time: 1000  
 Received By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

ICED: 2.2  
 GOOD CONDITION  
 HEAD SPACE ASSENT  
 DECONTAMINATED IN LAB  
 APPROPRIATE CONTAINERS  
 PRESERVED IN LAB  
 COMMENTS: page 3 of 3

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 25712 COMMERCENTRE DRIVE  
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 Telephone: (949) 297-5020 Fax: (949) 297-5027

**CHAIN OF CUSTODY RECORD**  
 TURN AROUND TIME  RUSH 24 HR  48 HR  72 HR  5 DAY  
 GeoTracker EDF  PDF  Excel  Write On (DW)

Report To: James Grubi Bill To:  
 Company: Grubi Associates  
 1090 Adams Street, Suite K  
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 Telephone: (707) 748-7743 Fax: (707) 748-7763  
 Client Name: Attavouc Global ID: 70600101187  
 Project Name: Attavouc - Market Street  
 Sampler Signature: \_\_\_\_\_

Analysis Request Other Comments  
 Filter Samples for Metals analysis: Yes/No

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers					METHOD PRESERVED
		Date	Time		Water	Soil	Air	Sludge	Other	
13	B-4-8.0	11/22	0840	1	X	X	X	X	X	X
14	B-4-12.0	11/22	0845	1	X	X	X	X	X	X
15	B-4-15.0	11/22	0850	1	X	X	X	X	X	X
16	B-4-600	11/22	0905	6	X	X	X	X	X	X
17	B-5-7.0	11/21	0858	1	X	X	X	X	X	X
18	B-5-12.0	11/21	0900	1	X	X	X	X	X	X
19	B-12-15.0	11/21	0905	1	X	X	X	X	X	X
20	B-12-600	11/21	0930	6	X	X	X	X	X	X
21	B-6-8.0	11/21	1035	1	X	X	X	X	X	X
22	B-6-12.0	11/21	1040	1	X	X	X	X	X	X
23	B-6-15.0	11/21	1045	1	X	X	X	X	X	X
24	B-6-600	11/21	1100	6	X	X	X	X	X	X

Requested By: \_\_\_\_\_  
 Date: 11/25/13  
 Time: 1000  
 Received By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

ICED: 2.2  
 GOOD CONDITION  
 HEAD SPACE ASSENT  
 DECONTAMINATED IN LAB  
 APPROPRIATE CONTAINERS  
 PRESERVED IN LAB  
 COMMENTS: page 2 of 3

### SAMPLE RECEIVING REVIEW SHEET

BATCH # 132529

Client Name: GRIBI Project: ATTORNEY - MARISSET STREET

Received by: BEIAN Date/Time Received: 11.26.13 / 8:40

Delivered by:  Client  SunStar Courier  GSO  FedEx  Other \_\_\_\_\_

Total number of coolers received 1 Temp criteria = 6°C > 0°C (no frozen containers)

Temperature: cooler #1 2.0 °C +/- the CF (-0.2°C) = 2.8 °C corrected temperature

cooler #2 \_\_\_\_\_ °C +/- the CF (-0.2°C) = \_\_\_\_\_ °C corrected temperature

cooler #3 \_\_\_\_\_ °C +/- the CF (-0.2°C) = \_\_\_\_\_ °C corrected temperature

Samples outside temp. but received on ice, w/in 6 hours of final sampling.  Yes  No\*  N/A

Custody Seals Intact on Cooler/Sample  Yes  No\*  N/A

Sample Containers Intact  Yes  No\*

Sample labels match COC ID's  Yes  No\*

Total number of containers received match COC  Yes  No\*

Proper containers received for analyses requested on COC  Yes  No\*

Proper preservative indicated on COC/containers for analyses requested  Yes  No\*  N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times.  Yes  No\*

\* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date SL 11.26.13

Comments:

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**APPENDIX D**  
**WELL LOG FOR SITE**  
**WATER SUPPLY WELL**

12/70 - 23  
Job #1047. Toscani Bakery, 899 - 40th.St

LOG OF WELL

Took over well at -----	50	feet
Sandy clay -----	50 to 60	"
Yellow clay -----	60 " 82	"
Cement gravel -----	82 " 83	"
Yellow clay -----	83 " 90	"
Sandy clay -----	90 " 97	"
Gravel -----	97 " 102	"
Sandy clay -----	102 " 106	"
Clay -----	106 " 108	"

About 54' of 16" casing put in by Hall.

108 feet of 8" No. 14 R. H. Collar Casing with  
50 feet of machine perforations & Welded reband.

Foreman J. Carrere.

Well finished May 8 - 1928.