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Alameda County  
Environmental Health

March 20, 2008

REPORT  
of  
SOIL, GROUNDWATER, SOIL VAPOR, AND INDOOR AIR ASSESSMENT  
ASE JOB NO. 2808  
at  
Lim Property  
250 8<sup>th</sup> Street  
Oakland, California

Submitted by:  
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## **1.0 INTRODUCTION**

This submittal presents Aqua Science Engineers, Inc. (ASE's) report for an additional soil, groundwater and soil vapor assessment at the Lim Family Property located at 250 8th Street in Oakland, California (Figures 1 and 2). Also included are results from indoor air sampling for both the on-site automotive repair shop and from surrounding downgradient and crossgradient buildings that may have been impacted by hydrocarbons related to the site. This work was requested by the Alameda County Health Care Services Agency (ACHCSA) in their letter dated August 28, 2007.

## **2.0 BRIEF SITE HISTORY AND BACKGROUND INFORMATION**

### 2.1 May 1992 Underground Storage Tank Removal

A gasoline service station previously occupied the site. In May 1992, ASE removed ten underground fuel storage tanks (USTs) from the site. The USTs consisted of one (1) 10,000-gallon gasoline tank, one (1) 5,000-gallon diesel tank, three (3) 2,000-gallon gasoline tanks, one (1) 2,000-gallon diesel tank, three (3) 500-gallon gasoline tanks and one (1) 250-gallon waste oil tank. Up to 10,000 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) and 5,900 ppm total petroleum hydrocarbons as diesel (TPH-D) were detected in soil samples collected during the tank removal.

### 2.2 December 1992 through March 1993 Soil Overexcavation

Between December 1992 and March 1993, All Environmental of San Ramon, California overexcavated 1,762 cubic yards of soil from the site and off-hauled the soil to the BFI Landfill in Livermore, California for disposal (Figure 2). Analytical results show that all on-site soil with hydrocarbon concentrations greater than 10 ppm was removed from the site with the exception of soil along the 8th Street shoring. Up to 1,800 ppm TPH-G and 120 ppm TPH-D were detected in soil samples collected along the shoring indicating that contamination likely extends below 8th Street. It was also later shown that the overexcavation did not extend all the way to groundwater and this contamination left in place may still be a source for groundwater contamination.

### 2.3 January 1995 Monitoring Well Installation

In January 1995, ASE installed monitoring wells MW-1 and MW-2 at the site (Figure 2). High hydrocarbon concentrations were detected in monitoring well MW-2, downgradient of the site. Moderate hydrocarbon concentrations were detected in on-site monitoring well MW-1.

### 2.4 January 1996 Borings and Groundwater Sampling

In July 1996, ASE collected groundwater samples from each monitoring well and drilled borings BH-C and BH-D to further define the width of the hydrocarbon plume downgradient of the site.



Relatively high hydrocarbon concentrations were detected in groundwater samples collected from monitoring well MW-2, downgradient of the site. Slightly lower but still very high hydrocarbon concentrations were detected in groundwater samples collected from boring BH-D, west of monitoring well MW-2. Very low hydrocarbon concentrations were detected in groundwater samples collected from monitoring well MW-1, located on the site, and boring BH-C, east of monitoring well MW-2. Based on these findings, the plume appeared to be moving to the south of Excavation I.

## 2.5 Quarterly Groundwater Monitoring

In April 1995, ASE began a quarterly groundwater monitoring program for the site. Since that time, the site has been on either a quarterly or semi-annual sampling schedule. Depth to groundwater data and analytical results for all groundwater sampling periods are tabulated in Tables One through Three.

## 2.6 June 1997 Remedial Action Plan

On June 5, 1997, ASE prepared a remedial action plan (RAP) addressing the need for groundwater remediation at the site, describing the appropriateness of several remedial options and choosing an option. Low flow hydrogen peroxide injection was chosen as the groundwater remediation option of choice for the site in order to raise dissolved oxygen (DO) concentrations in the groundwater to stimulate in-situ bioremediation.

## 2.7 February 1999 Hydrogen Peroxide Remediation System Installation

On February 2 and 3, 1999, five (5) injection wells were installed at the site (Figure 2). On February 18, 1999, the injection system began operation. It delivered a water and hydrogen peroxide solution to each injection well on a constant basis. DO concentrations within the injection wells rose to above 20 ppm. Groundwater in downgradient monitoring well MW-2 never showed a measurable increase in DO.

## 2.8 June 1999 Discovery of Free-Floating Hydrocarbons

On June 22, 1999, while measuring the DO content within the injection wells, ASE discovered that the DO probe had a very strong gasoline odor when removed from injection well IW-5. A clear bailer was inserted into IW-5 to check for the presence of free-floating hydrocarbons. The bailer contained approximately 18-inches of what appeared to be aged gasoline. On June 24, 1999, ASE returned to the site with an interface probe to accurately measure the thickness of the free-floating hydrocarbons. On that day, 1.75-feet of free-floating hydrocarbons was measured on the water surface in IW-5. Injection well IW-4 (15-feet east of IW-5) was measured with the interface probe and did not contain a measurable thickness of floating hydrocarbons. On June 24, 1999, ASE bailed the free-floating hydrocarbons from IW-5 until only a sheen was present on the water surface. Approximately 3 gallons of product was removed from IW-5.



## 2.9 January 2000 Monitoring Well Installation

In January 2000, ASE installed groundwater monitoring wells MW-3 and MW-4, east of injection well IW-5 and monitoring well MW-2 (Figure 2). High hydrocarbon concentrations were detected in groundwater samples collected from both of these wells, including up to 140,000 parts per billion (ppb) TPH-G, 13,000 ppb TPH-D and 22,000 ppb benzene.

## 2.10 April 2000 Groundwater Sampling

In April 2000, ASE collected groundwater samples from all four monitoring wells. Elevated hydrocarbon concentrations were detected in groundwater samples collected from monitoring wells MW-2, MW-3 and MW-4, including up to 240,000 ppb TPH-G, 700,000 ppb TPH-D and 35,000 ppb benzene. Monitoring well MW-3 contained free-floating hydrocarbons.

## 2.11 Hydrogen Peroxide System Discontinuation

On November 27, 2000, with the approval of the Alameda County Health Care Services Agency, ASE turned off the hydrogen peroxide injection system since there was no noticeable DO increase in downgradient monitoring wells MW-2 and MW-4 on the west side of 8<sup>th</sup> Street.

## 2.12 May 2002 Monitoring Well Installation

In May 2002, ASE installed groundwater monitoring wells MW-5 and MW-7 south of the site, across 8th Street, and MW-6 northwest of the site approximately 70 feet west of existing monitoring well MW-3 (Figure 2). Low concentrations of MTBE were identified in groundwater samples collected from wells MW-5 and MW-6. High concentrations of petroleum hydrocarbons were identified in well MW-7, including up to 38,000 ppb TPH-G and 890 ppb benzene.

## 2.13 October 2004 Dual-Phase Extraction Event

In October 2004, CalClean mobilized to the site with a truck-mounted Dual-Phase Extraction (DPE) system to perform both a DPE pilot test and a 14-day DPE interim remediation event at the site. At the completion of the DPE interim remediation event, a total of 94,470 gallons of free-product and groundwater were removed from three extraction wells. The average TPH-G concentration in the extracted groundwater was 13,900 ppb; the average benzene concentration of that extracted groundwater was 780 ppb. The extracted groundwater was treated on-site with activated carbon vessels, and then discharged, under permit, to the East Bay Municipal Utilities District (EBMUD) sanitary sewer system on-site.

A total of 2.3 million cubic feet of hydrocarbon-laden vapors were extracted from three extraction wells during the 15 day event. Based on field measurements and laboratory analytical data, over 7,000 pounds of petroleum hydrocarbons were extracted from three extraction wells



during the 15-day event. This equates to approximately 1,150 gallons of petroleum hydrocarbons. The extracted vapors were treated on-site by CalClean's thermal oxidizer. Based on the success of this DPE event, ASE recommended a second DPE event for the site prior to designing and installing a long-term remediation system.

#### 2.14 Current Quarterly Groundwater Monitoring Program

The site is currently on a quarterly groundwater monitoring program. Depth to groundwater and analytical results for all historical groundwater sampling events are tabulated in Tables One through Three.

#### 2.15 October 2006 Workplan for Additional Assessment, Sensitive Receptor Survey, Area Well Survey, Conduit and Potential Preferential Pathway Survey, and Conceptual Site Model

In October 2006, ASE prepared a workplan to conduct an additional soil and groundwater assessment at the site. Also included in this document were a sensitive receptor survey, an area well survey, a conduit and potential preferential pathway survey, and a conceptual site model.

ASE prepared a map showing property usage within approximately one block of the site, specifically to search for sensitive receptors such as schools, daycare facilities, hospitals, or medical facilities. A summer school (Chinese Presbyterian Church School) is located across 8<sup>th</sup> Street to the southwest of the site at 265 8<sup>th</sup> Street. This school has monitoring wells MW-4 and MW-7 just in front of the school, and it is possible that the hydrocarbon plume extends beneath the church and school. No other schools, daycares, or medical facilities were located. None of the buildings across 8<sup>th</sup> Street downgradient of the site appeared to have basements. The nearest surface water bodies are the Oakland Inner Harbor and Lake Merritt, both over 2,000-feet from the site. It is highly unlikely that the hydrocarbon plume has reached either of these surface water bodies.

A conduit and potential preferential pathway study was conducted by reviewing Underground Service Alert (USA) markings in the site vicinity, reviewing as-built drawings supplied by the city, and contacting individuals that would have knowledge of the individual utility lines. There were no underground utility lines beneath 8<sup>th</sup> Street directly downgradient of the site that could present a potential preferential pathway for the movement of groundwater. Storm and sanitary sewer lines beneath Alice Street, crossgradient of the site, and beneath 7<sup>th</sup> Street, a block (approximately 350-feet) downgradient could be potential conduits for the preferential movement of groundwater only during very rare periods of unusually high groundwater levels.

ASE conducted an area well survey to locate water wells within a 2,000-foot radius of the site. A total of 149 wells are located within the study area. Of these wells, 129 are listed as monitoring or test wells, 10 are listed as piezometers, one is listed as a cathodic protection well, two are listed as extraction wells (for remediation), one is an air sparging well, one is listed as a





domestic well, one is listed as an abandoned well, two are listed as destroyed wells, and two are of unknown usage. Although listed as a domestic well, the well labeled as domestic is owned by Western Union and has a listed depth of 33-feet. Based on this information, it is highly unlikely that this well is used for groundwater consumption. Based on all of the information known from these wells, (a) no water supply wells are located in the site vicinity, and (b) none of the other wells downgradient of the site appear to present a potential conduit for the downward movement of contamination.

#### 2.16 January 2007 Soil Vapor Sampling Workplan

On January 18, 2007, ASE prepared a workplan to conduct a soil vapor sampling assessment at the site. This work was requested by the ACHCSA in their letter dated November 20, 2006. This soil vapor survey was to be conducted in conjunction with the work described in ASE's October 23, 2007 workplan. This workplan was subsequently approved by the ACHCSA with the addition of three additional soil vapor sample locations.

#### 2.17 February and March 2007 Soil and Groundwater Sampling

Between February 27 and March 1, 2007, ASE drilled soil boring SB-1 through SB-7 using a Geoprobe direct-push hydraulic sampling rig (Figure 3). The purpose of SB-1 was to define the vertical extent of hydrocarbons beneath the site. The purpose of the remaining borings was to complete the definition of the horizontal extent of hydrocarbons. For boring SB-1, the Geoprobe was equipped with a dual-walled sampler. The dual-walled sampler allows the boring to advance with an external conductor casing to minimize potential cross-contamination by sealing off potentially contaminated soil and groundwater outside the external casing from the internal boring opening and sampling equipment. The TPH-G, TPH-D and BTEX concentrations in the soil sample collected from 20-feet below ground surface (bgs) in boring SB-1 exceeded the RWQCB environmental screening level (ESL) for residential soil where groundwater is not a current or potential source of drinking water. The TPH-G, TPH-D and benzene concentrations in the soil sample collected from 25-feet bgs in boring SB-1 also exceeded ESLs. None of the soil samples collected from boring SB-1 between 30-feet bgs and the total depth of 60-feet contained hydrocarbon concentrations exceeding ESLs. Groundwater samples collected from 20-23-foot bgs, 28-31-foot bgs and 51-53-foot bgs in boring SB-1 contained concentrations of TPH-G, benzene, toluene and total xylenes exceeding ESLs. Ethyl benzene concentrations also exceeded ESLs in samples collected from the 20-23-foot and 28-31-foot depths in this boring. It should be noted that concentrations decreased by an order of magnitude with each successive sample depth.

Boring SB-2 contained TPH-G and TPH-D concentrations exceeding ESLs, although none of the BTEX concentrations in this boring exceeded ESLs. None of the samples from the remaining borings (SB-3 through SB-7) contained TPH-G or BTEX concentrations exceeding ESLs, although groundwater samples collected from SB-3 and SB-4 contained TPH-D at concentrations exceeding ESLs.



The only oxygenate detected was 9.8 ppb MTBE in the groundwater sample collected from boring SB-7. Given the fact that MTBE hasn't been detected in groundwater at the site at elevated concentrations and since there are several other gas stations within a block of the subject site, it is likely that this MTBE was not related to the subject site.

### 2.18 March 2007 Soil Vapor Sampling

In March 2007, ASE collected vapor samples from soil vapor sampling points SV-1 through SV-7 using a Geoprobe direct-push hydraulic sampling rig (Figure 3). The vapor concentrations were compared to both residential and commercial/industrial shallow soil gas screening levels for evaluation of potential vapor intrusion concerns as presented in the "Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater" document prepared by the RWQCB dated February 2005 (Volume 2; Table E-2). Benzene concentrations in all of the vapor samples except SV-5 exceeded both residential and commercial/industrial ESLs. The TPH-G concentrations also exceeded residential ESLs in all samples except SV-5, and exceeded the commercial/industrial ESL in sample SV-6.

### **3.0 SCOPE OF WORK**

The purpose of this assessment was to (a) further define the horizontal and vertical extent of soil and groundwater contamination related to the site, and (b) determine the risk related to potential vapor intrusion to indoor air for buildings on-site, adjacent to the site, and downgradient of the site. The scope of work for this project was to:

- 1) Obtain access agreements with surrounding property owners to collect indoor air and/or soil, groundwater and soil vapor samples from their property.
- 2) Collect indoor air samples from surrounding downgradient, crossgradient and on-site buildings as well as an outdoor ambient air sample.
- 3) Analyze the air samples at a CAL-DHS certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15.
- 4) Obtain a drilling permit from the Alameda County Public Works Agency.
- 5) Contract with a subsurface utility locating service to clear drilling locations of underground utility lines.
- 6) Drill three soil borings using a Geoprobe and collect soil and groundwater samples for analysis.



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- 7) Analyze one soil and one groundwater sample collected from each boring at a CAL-DHS certified analytical laboratory for TPH-D by EPA Method 8015 and TPH-G, BTEX, fuel oxygenates and lead scavengers by EPA Method 8260B.
- 8) Collect soil vapor samples from three points north of the site, adjacent to borings described in Task 6.
- 9) Analyze the soil vapor samples at a CAL-DHS certified analytical laboratory for TPH-G and BTEX by EPA Method TO-15.
- 10) Following collection of the soil, groundwater and soil vapor samples, backfill the borings described in tasks 6 and 8 with neat cement placed by tremie pipe.
- 11) Drill an on-site soil boring to 35-feet bgs and install a conductor casing.
- 12) Drill within the conductor casing to a depth of approximately 49-feet bgs and install a groundwater monitoring well.
- 13) After waiting at least 72-hours following the well installation, develop the monitoring well using surge block agitation and bailer and/or pump evacuation.
- 14) After waiting at least 72-hours following the well development, collect groundwater samples from the monitoring well.
- 15) Analyze the groundwater samples at a CAL-DHS certified analytical laboratory for TPH-D by EPA Method 8015 and TPH-G, BTEX. fuel oxygenates and lead scavengers by EPA Method 8260B.
- 16) Survey the elevation and horizontal location of the well.
- 17) Dispose of soil cuttings and wastewater produced during this assessment.
- 18) Prepare a report presenting results from this assessment. This report will present tabulated analytical results, an updated conceptual site model, conclusions, and recommendations.

#### **4.0 INDOOR AIR SAMPLING INSIDE BUILDINGS ON AND SURROUNDING THE SITE**

##### **4.1 Indoor Air Sampling**

Based on the soil vapor sampling results from March 2007, an indoor air sampling event was conducted to determine whether hydrocarbon vapors related to soil and groundwater



contamination originating from the 250 8<sup>th</sup> Street site could present a threat to occupants of surrounding buildings. ASE obtained access agreements from all of the applicable property owners prior to sample collection. Copies of the access agreements are presented in Appendix A. The sampling was conducted by Kevin Braun, a certified industrial hygienist from Earth Safety Dynamics. Mr. Braun collected samples from the following:

Photo Shop	249 8 <sup>th</sup> Street
Beauty Shop	253 8 <sup>th</sup> Street
Chong Long Market	158 8 <sup>th</sup> Street
Automotive Repair Shop (Site)	250 8 <sup>th</sup> Street
Chinese Presbyterian Church (Social Hall)	265 8 <sup>th</sup> Street
Chinese Presbyterian Church (Sanctuary)	265 8 <sup>th</sup> Street
Chinese Baptist Church (Social Hall)	280 8 <sup>th</sup> Street
Chinese Baptist Church (Choir Pews)	280 8 <sup>th</sup> Street

An outdoor reference sample was also collected from the parking lot located at the southwest corner of 8<sup>th</sup> and Harrison Street. Details of the sampling techniques and results are presented in the report in Appendix B.

#### 4.2 Air Sampling Results

Based on the Earth Safety Dynamic's report presented in Appendix B, all of the air samples, including the ambient control sample, contained benzene concentrations exceeding the California Human Health Screening Level (CHHSL). However, with the exception of the interior of the on-site automotive repair facility (which disassembles automotive components and has a wide variety of fuels and lubricants present constantly), all measured benzene concentrations were essentially identical to the ambient air control sample. Based on this data, it is unlikely that vapor intrusion from subsurface soil and groundwater is contributing significantly to occupant dose in any of the off-site structures. Benzene concentrations in the on-site automotive repair shop, however, were elevated compared to the ambient sample, and the data does not rule out significant dose contribution by subsurface vapor intrusion of benzene into the building. However, the nature of operations in the repair shop makes it likely that the benzene source is internal. Due to the occupational nature of the repair shop, the Permissible Exposure Limit (PEL) would be a more applicable standard for the facility, and the PEL was not exceeded in the air sample in the repair shop.



## **5.0 DRILL SOIL BORINGS AND COLLECT SOIL AND GROUNDWATER SAMPLES**

### 5.1 Permit and Access Agreement

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency (ACPWA). ASE also obtained an access agreement from the property owner north of the site to drill and collect samples from the property. A copy of the access agreement is presented in Appendix A. A copy of the drilling permit is presented in Appendix C. ASE also notified USA to have underground public utilities in the vicinity of the site marked prior to drilling. Drilling locations were also cleared of utility lines by Subtronic Corporation of Concord, California prior to drilling.

### 5.2 Drill Borings and Collect Soil and Groundwater Samples

On February 8, 2008, WDC Exploration of Richmond, California drilled soil borings SB-8 through SB-10 using a Geoprobe direct-push hydraulic sampling rig. The boring locations are shown on Figure 3. ASE geologist Robert E. Kitay, P.G. directed the drilling. Soil samples were collected by driving a Macro-Core sampler lined with acetate tables into the ground using hydraulic direct-push.

Undisturbed soil samples were collected continuously as drilling progressed for lithologic and hydrogeologic description and for possible chemical analysis. Selective soil samples were immediately cut, sealed with Teflon squares and plastic end caps, and labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples were placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-DHS certified analytical laboratory under chain of custody documentation.

Soil from the remaining tubes was described by the site geologist using the Unified Soil Classification System (USCS) and was screened for volatile organic compounds (VOCs) using a photoionization detector (PID). The soil was screened by emptying soil from one of the sample tubes into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the volatile compounds were allowed to volatilize, the PID measured the vapor in the bag through a small hole punched in the bag. PID readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory. The PID readings are shown on the boring logs presented in Appendix D. There were no field indications of significant contamination based on odors, staining or PID readings.

### 5.3 Collect Groundwater Samples

Once groundwater was encountered, temporary PVC well casing was driven into place for the collection of groundwater samples. Groundwater samples were removed from the boring with a



pre-cleaned bailer. The groundwater samples were contained in 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and stored in an ice chest with wet ice for transport to the analytical laboratory under chain of custody.

#### 5.4 Decontamination and Borehole Backfilling

Drilling equipment was cleaned with an Alconox solution between sampling intervals and between borings to prevent potential cross-contamination. Following collection of the soil and groundwater samples, each boring was backfilled with neat cement to the ground surface.

### **6.0 SOIL VAPOR SAMPLING**

#### 6.1 Collect Soil Vapor Samples

On February 8, 2008, WDC Exploration of Richmond, California pushed vapor collection points SV-8 through SV-10 in the locations shown on Figure 3. Vapor points were pushed to 3-foot bgs using drilling rods driven with a Geoprobe. The bottom of the rod contained an expendable point. Once at depth, the drive rod was retracted separating the expendable point and the rods and creating the desired void for sample collection. A Geoprobe Point Run Tubing (PRT) system adapter and new, unused polyethylene tubing were then advanced through the inner drive rod and secured to the expendable point holder at the base of the rods. A hydrated bentonite seal was placed around the rods and ground surface to prevent ambient air intrusion into the borehole. The borehole was then allowed to equilibrate prior to purging and sampling. The tubing was then purged of five volumes to insure that all ambient air was removed from the tubing using the Geoprobe vacuum/volume system. The sample was collected in a 1-liter Summa canister with a rate between 100 to 200-ml per minute. The samples were labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples were then delivered under chain of custody to a CAL-EPA certified analytical laboratory. ASE geologist Robert Kitay, PG directed the sampling.

#### 6.2 Decontamination and Borehole Backfilling

Drilling equipment was cleaned with an Alconox solution between borings to prevent potential cross-contamination. Following collection of the soil vapor samples, each boring was backfilled with neat cement to the ground surface.



## **7.0 MONITORING WELL MW-8 INSTALLATION, DEVELOPMENT AND SAMPLING**

### 7.1 Drilling Permit

Prior to drilling, ASE obtained a drilling permit from the ACPWA. A copy of the drilling permit is presented in Appendix C. ASE also notified USA to have underground public utilities in the vicinity of the site marked prior to drilling. Drilling locations were also cleared of utility lines by Subtronic Corporation of Concord, California prior to drilling.

### 7.2 Drill Initial Boring and Install Conductor Casing

On January 28, 2008, WDC Exploration of Richmond, California drilled boring MW-8 using a drill rig equipped with 18-inch diameter hollow-stem augers. The boring location is shown on Figure 3. ASE geologist Robert E. Kitay, P.G. directed the drilling. Soil samples were collected every 5-feet as drilling continued to a depth of 25-feet bgs, and continuously below 25-feet bgs to the total depth. The samples were collected by driving a split-barrel drive sampler into the ground using a 140-lb hammer dropped repeatedly 30-inches.

The initial boring was drilled into the silty clay aquitard to 40-feet bgs. An 10-inch diameter steel conductor casing was then placed into the boring to the surface. The purpose of the conductor casing is to seal off the initial water-bearing zone from the deeper water-bearing zone. Neat cement was then tremmied into the annular space between the conductor casing and the boring from the bottom of the boring to the surface. The boring was then left to let the annular seal set prior to the installation of the monitoring well.

### 7.3 Drill Through Conductor Casing and Install the Deeper Monitoring Well

On January 31, 2008, WDC Exploration drilled through the conductor casing using 8-inch diameter hollow-stem augers to a depth of 49-feet bgs.

The well was constructed with 2-inch diameter, 0.010-inch slotted, flush-threaded, Schedule 40 PVC well screen and blank casing. The well was screened between 44 and 49-feet bgs to monitor the second water-bearing zone. Lonestar #2/12 Monterey sand occupies the annular space between the borehole and the casing from the bottom of the boring to 1-foot above the well screen. A 1-foot thick hydrated bentonite layer separates the sand from the overlying cement surface seal. Neat cement was then placed above the bentonite seal to the ground surface. The wellhead is secured with a locking wellplug beneath an at-grade traffic-rated vault.

### 7.4 Develop Monitoring Well MW-8

On February 15, 2008, ASE geologist Robert Kitay developed monitoring well MW-8 using two episodes of surge-block agitation and evacuation with bailers and a Grundfos submersible pump.



Ten well casing volumes of water were removed from the well during development, and evacuation continued until the water was relatively clear. The well development water was stored in a 55-gallon drum and left on-site until disposal and be arranged.

### 7.5 Collect Groundwater Samples from All Site Wells

On February 26, 2008, ASE measured the depth to water in monitoring wells MW-1 through MW-8 using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. Monitoring well MW-3 contained 0.22-feet of free-floating hydrocarbons, which is a decrease from the previous quarter. Groundwater elevation data is presented in Table One.

ASE then collected groundwater samples from seven of the eight monitoring wells for analysis. Monitoring well MW-3 was not sampled due to the presence of free-floating hydrocarbons. Prior to sampling, the wells were purged of three well casing volumes of groundwater using disposable polyethylene bailers. The pH, temperature, and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using disposable polyethylene bailers. The groundwater samples were decanted from the bottom of the bailers using low-flow emptying devices into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, sealed without headspace and labeled. All samples were stored on ice for transport to Kiff Analytical, LLC, of Davis, California under appropriate chain of custody documentation. Well sampling purge water was contained in a sealed and labeled 55-gallon steel drum for temporary storage until off-site disposal can be arranged.

## **8.0 LITHOLOGY AND HYDROGEOLOGY**

Sediments encountered beneath the site generally consisted of silty sand or sand from beneath the concrete or asphalt surface to approximately 33-feet bgs, silty clay from 33-feet bgs to approximately 41-feet bgs, silty sand from approximately 41-feet to the total depth explored of 49-feet bgs. In monitoring well MW-8, a pea gravel fill was present to a depth of 19-feet bgs. This lithology is consistent with previous investigations at the site. Boring logs are presented in Appendix D.

## **9.0 ANALYTICAL RESULTS**

### 9.1 Soil Sample Analysis

Soil samples collected from 14.5-feet bgs (the capillary zone) in borings SB-8 through SB-10 were analyzed by Kiff Analytical, LLC of Davis, California (ELAP #2236) for TPH-G, BTEX, five oxygenates and lead scavengers by EPA Method 8260B, and TPH-D by modified EPA Method 8015. The analytical results are tabulated in Table Four, and certified analytical report and chain of custody are presented in Appendix E.





The only hydrocarbon detected in soil from these borings was 1.0 ppm TPH-D in the soil sample collected from 14.5-foot bgs in boring SB-8. This hydrocarbon concentration did not exceed the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) environmental screening level (ESL) for soil at residential sites where groundwater is a current or potential source of drinking water. The ESLs are presented in the "Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater" document dated November 2007 (Volume 1; Table D).

### 9.2 Groundwater Sample Analysis for Samples Collected from Soil Borings

Groundwater samples collected from borings SB-8 through SB-10 were analyzed by Kiff Analytical for TPH-G, BTEX, five oxygenates and lead scavengers by EPA Method 8260B, and TPH-D by modified EPA Method 8015. The analytical results are tabulated in Table Five, and certified analytical report and chain of custody are presented in Appendix E.

Groundwater samples collected from borings SB-8 and SB-9 contained TPH-D concentrations of 150 and 650 ppm, respectively. These concentrations exceeded the ESL for sites where groundwater is a current or potential source of drinking water but did not exceed the ESL for sites where groundwater is not a current or potential source of drinking water. No TPH-G, BTEX, oxygenates, or lead scavengers were detected in groundwater samples from either of these borings, and no hydrocarbons at all were detected in groundwater samples collected from boring SB-10.

### 9.3 Groundwater Sample Analysis for Samples Collected from Monitoring Wells

On February 26, 2008, ASE collected groundwater samples from the site monitoring wells. Groundwater samples collected from monitoring wells MW-1, MW-2 and MW-4 through MW-8 were analyzed by Kiff Analytical for TPH-G, BTEX, five oxygenates and lead scavengers by EPA Method 8260B, and TPH-D by modified EPA Method 8015. The analytical results are tabulated in Tables One and Two, and the certified analytical report and chain of custody are presented in Appendix F. Monitoring well MW-3 was not sampled due to the presence of free-floating hydrocarbons.

In general, the analytical results from the monitoring wells were very similar to previous results, with the exception of MW-5, which contained detectable TPH-G and BTEX for the first time. TPH-G and BTEX concentrations exceeded ESLs for sites where groundwater is a current or potential source drinking water in groundwater samples collected from MW-2, MW-4, and MW-7. TPH-G and benzene concentrations also exceeded the ESL in groundwater samples collected from monitoring well MW-5. The only hydrocarbon concentration detected in groundwater samples collected from monitoring well MW-8, which is screened in the second water bearing zone and has not been previously sampled, was benzene at 0.51 ppb. This concentration is just above the laboratory reporting limit and is well below the ESL.



#### 9.4 Vapor Sample Analysis

The vapor samples were analyzed by Air Toxics Ltd. of Folsom, California (ELAP #2110) for TPH-G and BTEX by Modified Method TO-3. The analytical results are tabulated in Table Six, and certified analytical reports are presented in Appendix G.

The vapor concentrations were compared to both residential and commercial/industrial shallow soil gas screening levels for evaluation of potential vapor intrusion concerns as presented in the "Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater" document prepared by the RWQCB dated November 2007 (Volume 2; Table E-2). None of the concentrations from SV-8 through SV-10 exceeded either residential and commercial/industrial ESLs.

#### **10.0 SURVEYING**

On February 21, 2008, Mid Coast Engineers of Watsonville, California surveyed the top of casing elevation of monitoring well MW-8 and the ground surface elevation of each accessible boring not previously surveyed relative to mean sea level (msl). The benchmark used for the survey was the City of Oakland BM 25A, a brass pin in monument box in the sidewalk at the northeast corner of the intersection of 7<sup>th</sup> Street and Harrison Street. The latitude and longitude were also surveyed to Geotracker standards. A copy of the survey is included as Appendix H.

On February 26, 2008, ASE measured the depth to groundwater in each monitoring well prior to purging and sampling. Depth to groundwater measurements are presented in Table One. A groundwater elevation (potentiometric surface) contour map is presented as Figure 4. The groundwater appeared to flow to the south beneath the site at a gradient of 0.005-feet/foot. In addition there was a higher potentiometric surface in the shallow zone than in the second water bearing zone (as represented by monitoring well MW-8), indicating a potential vertical groundwater gradient downward.

#### **11.0 CONCLUSIONS AND RECOMMENDATIONS**

Based on the data collected from this assessment, ASE concludes the following:

- The horizontal and vertical extent of hydrocarbons is now adequately defined in soil and groundwater in every direction. None of the soil, groundwater, or soil vapor samples collected on the property north of the site contained hydrocarbons exceeding ESLs for sites where groundwater is not a current or potential source of drinking water. In addition, groundwater samples collected from the deeper water-bearing zone in monitoring well MW-8 did not contain hydrocarbons in excess of ESLs.



- All of the indoor air samples, as well as the ambient control sample, contained benzene concentrations exceeding the CHHSL. However, with the exception of the interior of the on-site automotive repair facility (which disassembles automotive components and has a wide variety of fuels and lubricants present constantly), all measured benzene concentrations were essentially identical to the ambient air control sample. It is therefore unlikely that vapor intrusion from subsurface soil and groundwater is contributing significantly to occupant dose in any of the off-site structures. Benzene concentrations in the on-site automotive repair shop were, however, elevated compared to the ambient sample but it is likely that this benzene is due to the operations of the shop. The PEL was not exceeded in the air sample in the repair shop.
- ASE does not recommend any further soil, groundwater, soil vapor or indoor air sampling related to the site at this time.
- ASE has previously recommended the installation of a dual-phase extraction remediation system for the site. The previous dual-phase extraction events have proven very effective in the removal of a large mass of hydrocarbons. Given the fact that free-floating hydrocarbons still exist beneath the site, as well as beneath 8<sup>th</sup> Street downgradient of the site, ASE recommends the installation of a permanent dual-phase extraction system for the site. ASE will prepare a remedial action plan for the installation of our proposed system during the next quarter.

## **12.0 UPDATED CONCEPTUAL SITE MODEL**

The site has had a release of both gasoline and diesel fuel either from the former USTs, piping or dispensers. Due to the age of the release, little MTBE has been detected in soil and groundwater at the site. Significant overexcavation has taken place at the site, although the excavation apparently did not extend into groundwater and a significant mass of hydrocarbons remain in groundwater and in the capillary zone soils, including free-floating hydrocarbons.

The groundwater flow direction is consistently to the south-southwest, which is consistent with the groundwater flow direction at nearby sites. The extent of hydrocarbons is defined upgradient (to the north), crossgradient (to the east and west) and downgradient to the south. The vertical extent of hydrocarbons is defined on-site by groundwater samples collected from monitoring well MW-8, directly through the former overexcavation area.

Due to the depth of groundwater and the depth of the underground utility lines in 8<sup>th</sup> Street and Alice Street, it does not appear that there are any preferential pathways for the migration of groundwater contamination during normal water table conditions. During very rare periods of very high water levels, it may be possible that the sanitary and storm sewers beneath Alice Street could act as a conduit for the preferential movement of groundwater south of the site near 7<sup>th</sup> Street. However, Alice Street is generally crossgradient of the site's hydrocarbon plume and it does not seem likely that hydrocarbons related to the site have entered this conduit.



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There are also no drinking water wells in the site vicinity. The only sensitive receptor is a small seasonal school southwest of the site across 8<sup>th</sup> Street. However, indoor air samples from this school did not show hydrocarbon above the outdoor ambient control sample. In addition, none of the indoor air samples from the other off-site surrounding properties showed hydrocarbons significantly above the outdoor ambient control sample.

### 13.0 REPORT LIMITATIONS

The results presented in this report represent conditions at the time of the soil, groundwater and soil vapor sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

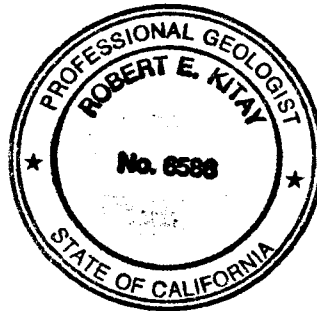
It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-DHS certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, P.G., R.E.A.  
Senior Geologist



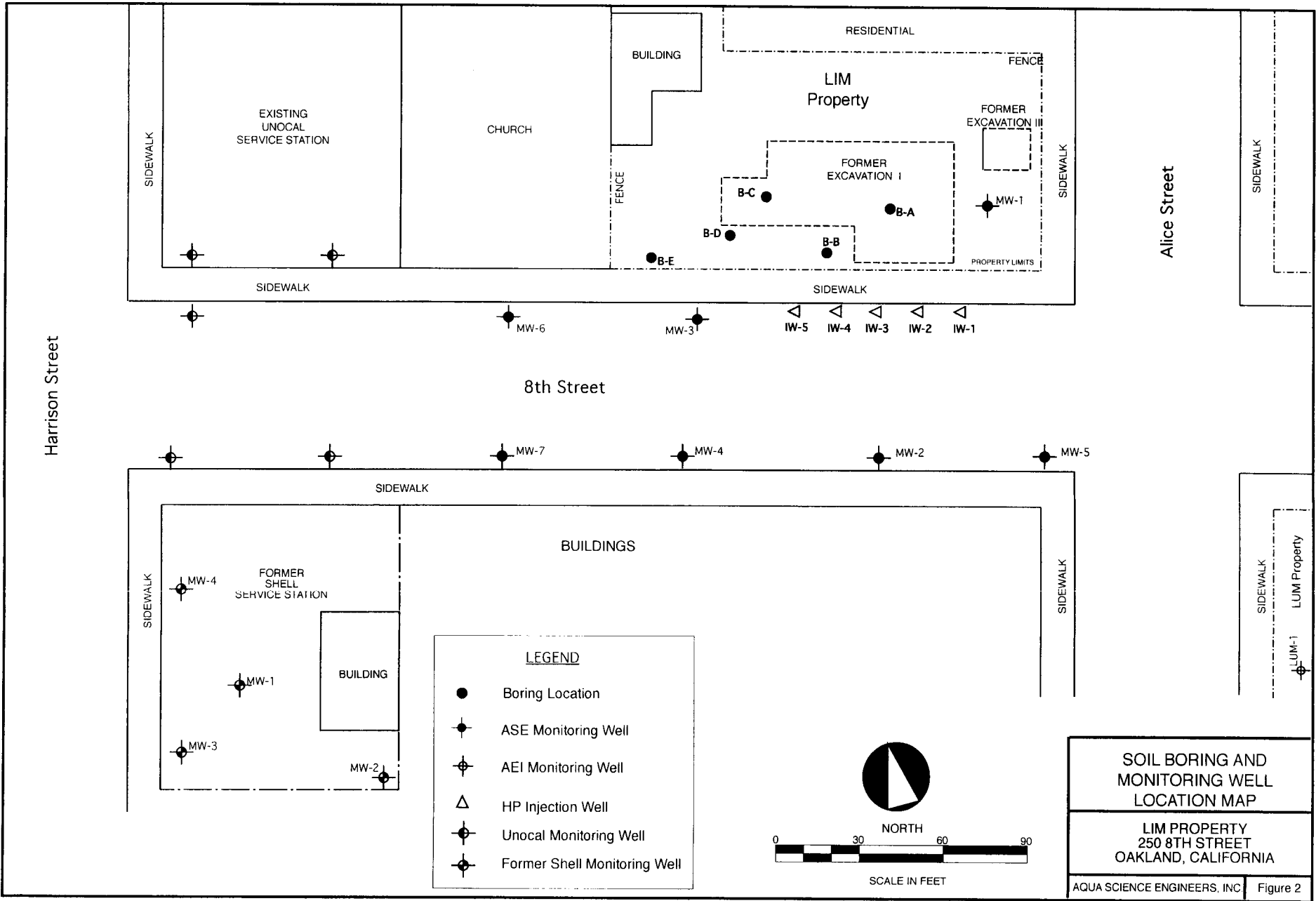
cc: Alice and May Lee Lim, c/o Russell Lim,

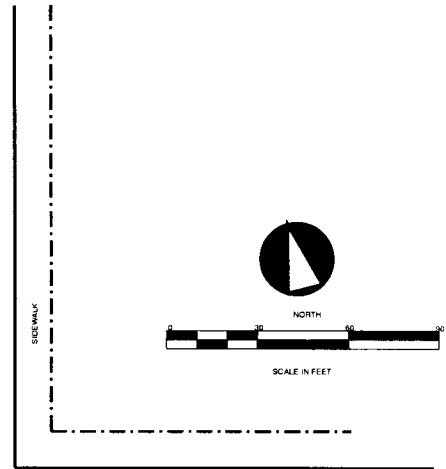
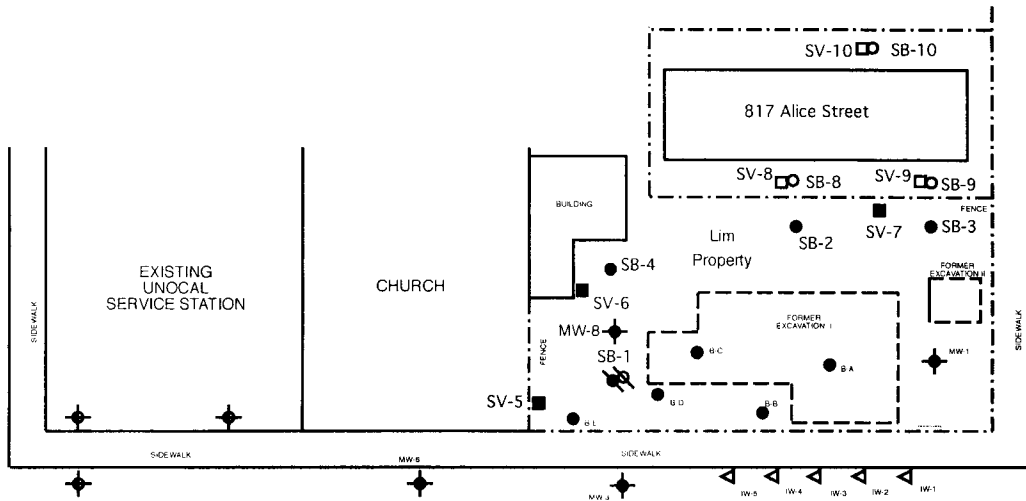
Mr. Jerry Wickham, Alameda County Health Care Services Agency (via upload to server)



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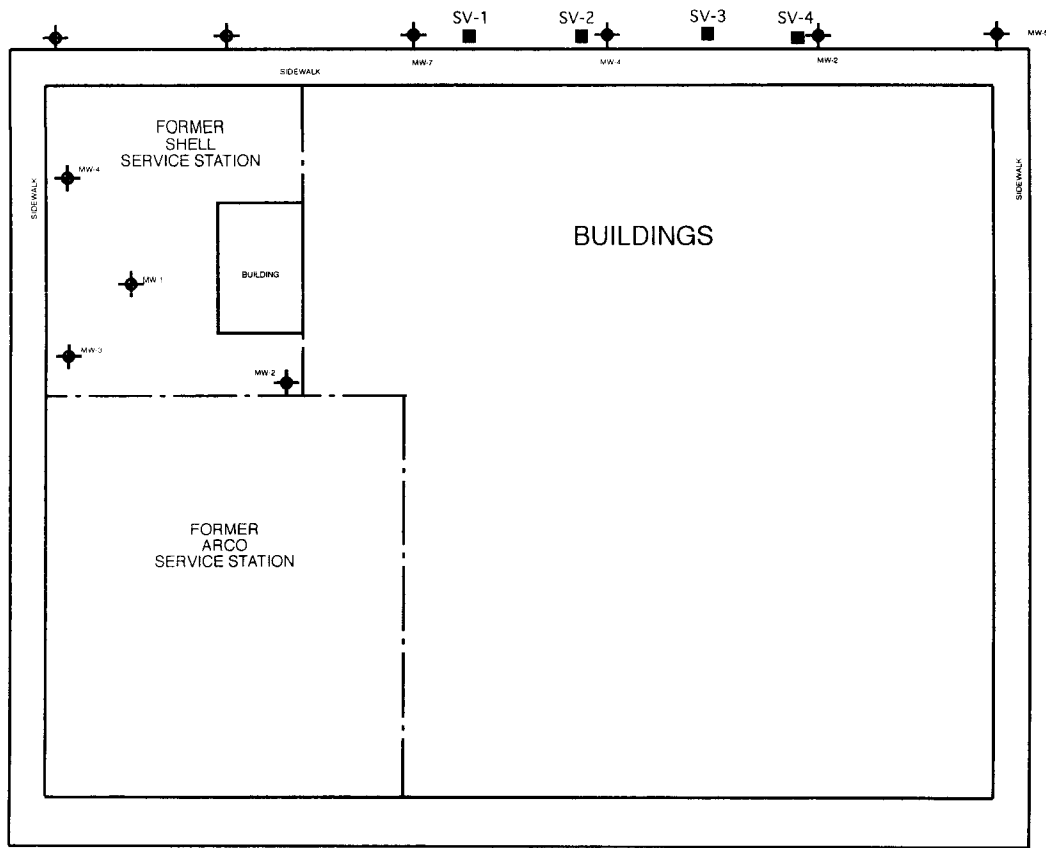
## **FIGURES**



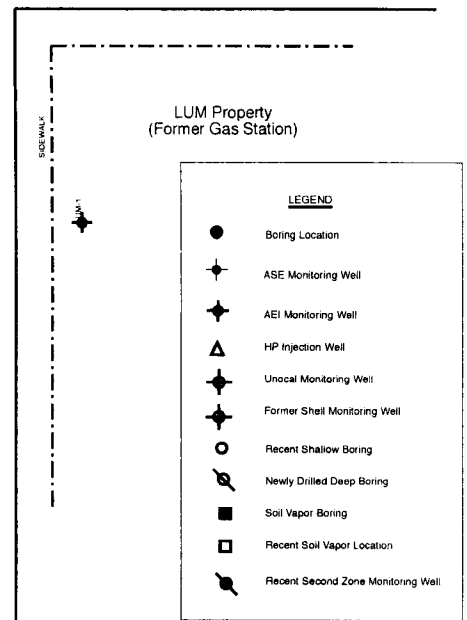


Harrison Street

8th Street



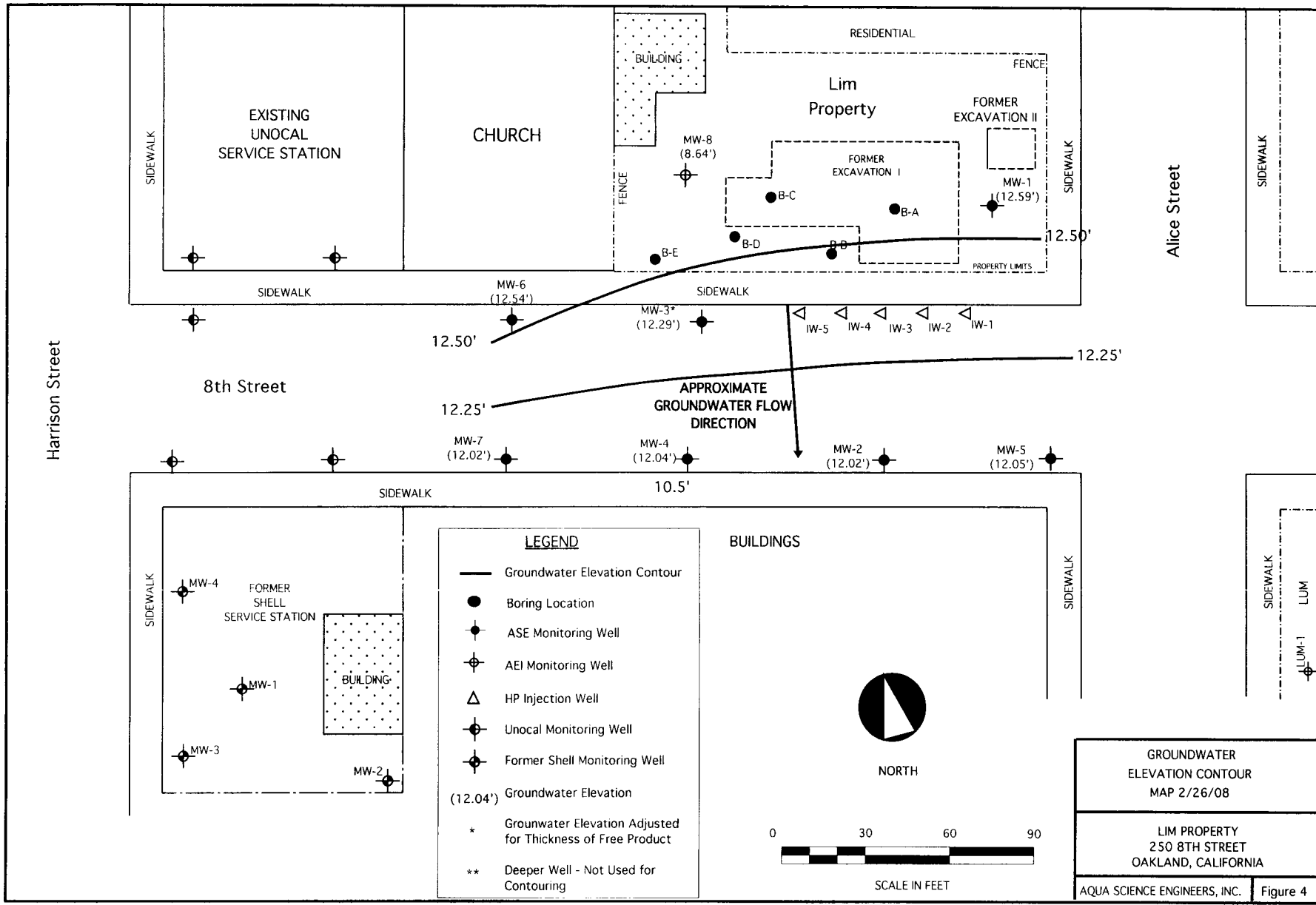
Alice Street



**MONITORING WELL, BORING AND SOIL VAPOR SAMPLING LOCATION MAP**

Lim Property  
250 8th Street  
Oakland, California

● SB-5                      ● SB-6                      ● SB-7



**LEGEND**

- Groundwater Elevation Contour
- Boring Location
- ⊙ ASE Monitoring Well
- ⊕ AEI Monitoring Well
- △ HP Injection Well
- ⊙ Unocal Monitoring Well
- ⊙ Former Shell Monitoring Well
- (12.04') Groundwater Elevation
- \* Groundwater Elevation Adjusted for Thickness of Free Product
- \*\* Deeper Well - Not Used for Contouring

NORTH

0      30      60      90

SCALE IN FEET

GROUNDWATER  
ELEVATION CONTOUR  
MAP 2/26/08

LIM PROPERTY  
250 8TH STREET  
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. Figure 4





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## **TABLES**

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (møl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (møl)
MW-1	01/30/95	25.51	16.21		9.30
	04/12/95		15.71		9.80
	07/14/95		16.71		8.80
	10/17/95		17.72		7.79
	01/12/96		18.03		7.48
	07/25/96		16.82		8.69
	01/06/97		15.60		9.91
	07/08/97		17.31		8.20
	01/26/98		15.21		10.30
	07/23/98		15.38		10.13
	01/05/99		16.82		8.69
	07/13/99		15.89		9.62
	01/12/00		17.44		8.07
	04/24/00		16.37		9.14
	07/20/00		16.30		9.21
	10/24/00		17.25		8.26
	01/18/01		17.29		8.22
	04/05/01		15.88		9.63
	07/17/01		16.54		8.97
	10/25/01		16.89		8.62
	01/21/02		14.92		10.59
	04/11/02	14.02		11.49	
	06/11/02	29.72	15.33		14.39
	09/17/02	15.96		13.76	
	12/18/02	16.14		13.58	
	03/25/03	16.16		13.56	
	06/23/03	16.01		13.71	
	09/26/03	16.57		13.15	
	12/18/03	16.41		13.31	
	03/12/04	14.64		15.08	
	06/17/04	15.71		14.01	
	09/17/04	16.35		13.37	
	12/17/04	16.10		13.62	
04/28/05	14.10		15.62		
07/19/05	15.94		13.78		
10/03/05	16.34		13.38		
12/06/05	16.21		13.51		
03/15/06	16.21		13.51		
06/28/06	14.92		14.80		
08/31/06	15.60		14.12		
11/21/06	17.20		12.52		
02/12/07	16.12		13.60		
05/02/07	16.92		12.80		
08/09/07	17.58		12.14		
12/06/07	18.60		11.12		
<b>02/26/08</b>			<b>17.13</b>		<b>12.59</b>

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-2	01/30/95	23.99	15.02		8.97
	04/12/95		14.75		9.24
	07/14/95		16.02		7.97
	10/17/95		16.94		7.05
	01/12/96		17.05		6.94
	07/25/96		16.02		7.97
	01/06/97		14.34		9.65
	07/08/97		16.52		7.47
	01/26/98		14.10		9.89
	07/23/98		14.70		9.29
	01/05/99		16.01		7.98
	07/13/99		15.40		8.59
	01/12/00		16.76		7.23
	04/24/00		15.67		8.32
	07/20/00		15.70		8.29
	10/24/00		16.56		7.43
	01/18/01		16.47		7.52
	04/05/01		15.88		8.11
	07/17/01		15.35		8.64
	10/25/01		15.63		8.36
	01/21/02		13.55		10.44
	04/11/02		13.74		10.25
	06/11/02		28.19	14.06	14.13
	09/17/02		14.67	13.52	
	12/18/02		14.88	13.31	
	03/25/03		15.11	13.08	
	06/23/03		14.94	13.25	
	09/26/03		15.49	12.70	
	12/18/03		15.13	13.06	
	03/12/04		13.50	14.69	
	06/17/04		14.63	13.56	
	09/17/04		15.19	13.00	
	12/17/04		14.88	13.31	
04/28/05		13.39	14.80		
07/19/05		15.27	12.92		
10/03/05		15.57	12.62		
12/06/05		15.35	12.84		
03/15/06		12.65	15.54		
06/28/06		14.45	13.74		
08/31/06		15.37	12.82		
11/21/06		16.22	11.97		
02/12/07		16.12	12.07		
05/02/07		16.12	12.07		
08/09/07		16.85	11.34		
12/06/07		17.95	10.24		
<b>02/26/08</b>			<b>16.15</b>	<b>12.04</b>	

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)	
<b>MW-3</b>	01/12/00	24.25	16.68	0.01	7.58*	
	04/24/00		15.58	0.15	8.79*	
	07/20/00		16.01	0.41	8.57*	
	10/24/00		16.95	0.21	7.47*	
	01/18/01		16.63	0.21	7.79*	
	04/05/01		15.16	0.23	9.27*	
	07/17/01		15.92	0.39	8.64*	
	10/25/01		16.26	0.38	8.29*	
	01/21/02		14.08	0.16	10.30*	
	04/11/02		14.59	0.54	10.09*	
	06/11/02		28.58	15.16	0.90	14.14*
	09/17/02			16.04	1.24	13.53*
	10/01/02			16.14	1.23	13.42*
	10/25/02	15.80		0.60	13.26*	
	11/12/02	15.87		0.47	13.09*	
	12/18/02	15.42		0.47	13.54*	
	03/25/03	16.11		1.14	13.38*	
	06/23/03	16.58		1.86	13.49*	
	09/26/03	16.11		0.66	13.00*	
	12/18/03	15.83		0.59	13.22*	
	03/12/04	14.51		1.21	15.04*	
	06/17/04	15.25	0.68	13.87*		
	09/17/04	16.14	0.96	13.21*		
	12/17/04	15.05	0.25	13.73*		
	01/13/05	13.40	0.45	15.54*		
	04/28/05	15.31	2.43	15.21*		
	07/19/05	16.29	1.67	13.63*		
	10/03/05	16.10	1.47	13.66*		
	12/06/05	15.04	1.17	14.48*		
	03/15/06	12.65	2.41	15.49*		
	06/28/06	13.55	2.61	16.16*		
	08/31/06	14.85	2.20	15.49*		
11/21/06	16.05	1.10	13.41*			
02/12/07	15.96	0.35	12.90*			
05/02/07	15.11	0.09	13.54*			
08/09/07	15.83	0.09	12.82*			
12/06/07	18.10	0.50	10.88*			
<b>02/26/08</b>		<b>16.47</b>	<b>0.22</b>	<b>12.29*</b>		

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)	
<b>MW-4</b>	01/12/00	23.71	17.24		6.47	
	04/24/00		16.18		7.53	
	07/20/00		16.18		7.53	
	10/24/00		17.03		6.68	
	01/18/01		16.87		6.84	
	04/05/01		15.28		8.43	
	07/17/01		15.92		7.79	
	10/25/01		16.23		7.48	
	01/21/01		14.14		9.57	
	04/11/02		14.43		9.28	
	06/11/02		28.61	14.72		13.89
	09/17/02			15.29		13.32
	12/18/02			15.20		13.41
	03/25/03	15.53			13.08	
	06/23/03	15.35			13.26	
	09/26/03	15.91			12.70	
	12/18/03	15.63			12.98	
	03/12/04	13.88			14.73	
	06/17/04	15.03			13.58	
	09/17/04	15.61			13.00	
	12/17/04	15.32			13.29	
	04/28/05	13.82		14.79		
	07/19/05	15.44		13.17		
	10/03/05	15.91		12.70		
	12/06/05	15.71		12.90		
	03/15/06	13.05		15.56		
	06/28/06	14.49		14.12		
	08/31/06	15.75		12.86		
	11/21/06	16.70		11.91		
	02/12/07	16.51		12.10		
	05/02/07	16.51		12.10		
	08/09/07	17.17		11.44		
12/06/07	18.08		10.53			
<b>02/26/08</b>		<b>16.57</b>		<b>12.04</b>		

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)	
<b>MW-5</b>	06/11/02	28.40	14.23		14.17	
	09/17/02		14.80		13.60	
	12/18/02		15.08		13.32	
	03/25/03		15.31		13.09	
	06/23/03		15.16		13.24	
	09/26/03		15.72		12.68	
	12/18/03		15.47		12.93	
	03/12/04		13.44		14.96	
	06/17/04		14.90		13.50	
	09/17/04		15.45		12.95	
	12/17/04		15.12		13.28	
	04/28/05		13.63		14.77	
	07/19/05		15.67		12.73	
	10/03/05		15.81		12.59	
	12/06/05		15.60		12.80	
	03/15/06		12.81		15.59	
	06/28/06		15.21		13.19	
	08/31/06		15.55		12.85	
	11/21/06		17.09		11.31	
	02/12/07		16.29		12.11	
05/02/07	16.21		12.19			
08/09/07	16.97		11.43			
12/06/07	18.35		10.05			
<b>02/26/08</b>	<b>16.35</b>		<b>12.05</b>			
<b>MW-6</b>	06/11/02	29.20	14.95		14.25	
	09/17/02		15.47		13.73	
	12/18/02		15.43		13.77	
	03/25/03		15.67		13.53	
	06/23/03		15.48		13.72	
	09/26/03		NOT MEASURED - SOUNDER MALFUNCTION			
	12/18/03		15.79		13.41	
	03/12/04		14.04		15.16	
	06/17/04		15.13		14.07	
	09/17/04		15.74		13.46	
	12/17/04		15.54		13.66	
	04/28/05		13.91		15.29	
	07/19/05		15.30		13.90	
	10/03/05		15.35		13.85	
	12/06/05		15.69		13.51	
	03/15/06		13.14		16.06	
	06/28/06		14.44		14.76	
	08/31/06		16.25		12.95	
	11/21/06		16.69		12.51	
	02/12/07		16.63		12.57	
05/02/07	16.57		12.63			
08/09/07	17.19		12.01			
12/06/07	17.95		11.25			
<b>02/26/08</b>	<b>16.66</b>		<b>12.54</b>			

**TABLE ONE**  
 Groundwater Elevation Data  
 Lim Family Property  
 250 8th Street  
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)	
<b>MW-7</b>	06/11/02	28.95	15.19		13.76	
	09/17/02		15.73		13.22	
	12/18/02		NOT MEASURED - CAR PARKED OVER WELL			
	03/25/03		15.96		12.99	
	06/23/03		15.75		13.20	
	09/26/03		16.29		12.66	
	12/18/03		16.03		12.92	
	03/12/04		14.28		14.67	
	06/17/04		15.42		13.53	
	09/17/04		16.02		12.93	
	12/17/04		15.45		13.50	
	04/28/05		14.15		14.80	
	07/19/05		15.30		13.65	
	10/03/05		16.25		12.70	
	12/06/05		16.05		12.90	
	03/15/06		13.36		15.59	
	06/28/06		14.81		14.14	
	08/31/06		16.13		12.82	
	11/21/06		17.06		11.89	
	02/12/07		16.97		11.98	
05/02/07	16.93		12.02			
08/09/07	17.56		11.39			
12/06/07	18.32		10.63			
	<b>02/26/08</b>		<b>16.93</b>		<b>12.02</b>	
<b>MW-8</b>	<b>02/26/08</b>	<b>30.14</b>	<b>21.50</b>		<b>8.64</b>	

Notes:

\* = Adjusted for the presence of free-floating oil by the equation: Top of Casing Elevation - Depth to Water + (0.8 x Floating Hydrocarbon Thickness) = Groundwater Elevation (Adjusted).

Top of casing elevations resurveyed by Mid Coast Engineers on 6/27/02 and 7/11/02.

**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
MW-1							
01/30/95	740	200	3	5	1	4	--
04/12/95	400	500	< 0.5	< 0.5	3	< 2	--
07/14/95	520	400	1	< 0.5	2	3	--
10/17/95	400	200	0.5	1	3	< 2	--
01/12/96	120	890	< 0.5	< 0.5	< 0.5	< 1.0	< 2.0
07/08/96	320	300	0.52	2.7	1.2	2.3	< 5.0
01/06/97	110	75	< 0.5	0.68	< 0.5	< 0.5	< 5.0
07/08/97	380	290	< 0.5	1.5	1.4	1.9	< 5.0
01/26/98	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
07/23/98	190	< 50	0.54	2.8	2	1.8	< 5.0
01/05/99	200	< 50	1.8	1.6	3.3	< 0.5	< 5.0
07/13/99	340	< 50	< 0.5	< 0.5	2.6	< 0.5	< 5.0
01/12/00	300	1,000	22	36	5.5	24	< 5.0
04/24/00	360	280*	< 0.5	< 0.5	< 0.5	2.1	< 5.0
07/20/00	290	150*	1.8	< 0.5	< 0.5	< 0.5	< 5.0
10/24/00	170**	280*	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
01/18/01	170**	150*	< 0.5	< 0.5	< 0.5	2.1	< 5.0
04/05/01	350**	190*	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
07/17/01	310	570	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
10/25/01	250	260	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
01/22/02	200	250	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
04/11/02	260	300	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
06/11/02	270	330	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
09/17/02	320	1,700	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
12/18/02	170	320	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
03/25/03	320	< 500	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
06/23/03	240	310	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
09/26/03	110	300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
12/18/03	150	340	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
03/12/04	220	510	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
06/17/04	250	490	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
09/17/04	110	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
11/10/04***	180	400	0.68	< 0.5	1.7	< 0.5	< 5.0
12/17/04	77	130	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
04/28/05	250	190	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
07/19/05	340	na	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
10/03/05	170	< 100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
12/06/05	140	67	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
03/15/06	170	< 80	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
06/28/06	230	130	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
08/31/06	310	< 200	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
11/21/06	220	160	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
02/23/07	140	120	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
05/02/07	180	140	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
08/09/07	130	120	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
12/06/07	53	160	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
<b>02/26/08</b>	<b>93</b>	<b>&lt; 50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>



**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-2</u>							
01/30/95	88,000	800	19,000	18,000	2,400	10,000	--
04/12/95	110,000	990	21,000	28,000	2,800	14,000	--
07/14/95	120,000	5,000	20,000	25,000	3,200	15,000	--
10/17/95	190,000	4,000	15,000	26,000	4,900	23,000	--
01/12/96	32,000	2,600	10,000	8,000	1,100	4,800	< 2
07/08/96	110,000	2,500	20,000	18,000	2,500	12,000	< 500
01/06/97	230,000	37,000	11,000	19,000	4,300	20,000	< 1,200
07/08/97	91,000	35,000	16,000	20,000	2,700	13,000	< 1,000
01/26/98	50,000	11,000	12,000	12,000	1,600	6,700	< 250
07/23/98	50,000	8,100#	11,000	8,300	1,800	7,000	1,100
01/05/99	50,000	7,600#	12,000	12,000	2,300	9,600	1,300
07/13/99	73,000	8,500	11,000	13,000	2,200	9,800	< 500
01/12/00	63,000	11,000	10,000	12,000	1,800	7,800	< 500
04/24/00	76,000	23,000*	7,100	14,000	2,000	9,400	< 500
07/20/00	68,000	5,300#	11,000	14,000	2,300	11,000	< 1,000
10/24/00	48,000	6,400*	11,000	9,400	1,500	7,300	< 500
01/18/01	37,000	4,600*	6,900	5,600	1,200	5,300	< 500
04/05/01	59,000	4,600*	7,100	9,800	1,600	7,600	< 500
07/17/01	90,000	< 10,000	9,200	14,000	2,700	11,000	< 50
10/25/01	79,000	< 3,800	9,200	14,000	2,400	11,000	< 50
01/22/02	76,000	< 2,300	7,000	13,000	2,200	9,600	< 50
04/11/02	76,000	< 1,500	7,800	11,000	2,900	12,000	< 50
06/11/02	72,000	< 2,500	7,300	9,600	2,500	12,000	< 50
09/17/02	52,000	< 3,000	5,000	5,400	2,100	9,100	< 20
12/18/02	46,000	< 6,000	2,900	3,000	1,800	7,600	22
03/25/03	87,000	< 8,000	7,900	9,300	2,900	12,000	< 50
06/23/03	46,000	< 3,000	7,800	4,000	1,900	6,600	< 50
09/26/03	52,000	< 3,000	9,100	3,500	1,300	5,000	< 50
12/18/03	61,000	< 4,000	13,000	3,500	1,600	5,600	< 20
03/12/04	53,000	< 4,000	9,100	3,500	1,700	5,700	< 25
06/17/04	59,000	< 3,000	7,100	4,000	1,700	7,300	< 25
09/17/04	33,000	--	9,800	1,200	1,300	4,000	< 20
11/10/04***	44,000	3,600	13,000	4,400	1,600	6,000	< 1000
12/17/04	54,000	< 3,000	7,900	2,200	1,700	3,900	< 15
04/28/05	81,000	< 3,000	7,000	6,000	2,100	8,700	< 15
07/19/05	59,000	na	7,900	4,400	1,900	7,000	< 15
10/03/05	34,000	< 800	7,800	810	1,000	2,800	< 15
12/06/05	26,000	< 800	6,100	940	770	2,000	< 15
03/15/06	33,000	< 1,500	7,700	2,600	1,400	4,200	< 15
06/28/06	96,000	< 4,000	10,000	14,000	2,900	12,000	< 15
8/3/06	47,000	< 3,000	5,800	5,100	2,200	8,700	< 15
11/21/06	51,000	< 1,500	6,800	3,400	1,700	6,200	< 15
02/23/07	38,000	< 1,500	7,800	2,000	1,500	4,600	< 15
05/02/07	55,000	< 3,000	6,500	5,100	2,400	8,600	< 15
08/09/07	39,000	< 3,000	6,600	2,200	1,600	4,900	< 15
12/06/07	20,000	< 1,500	7,400	510	680	1,200	< 15
<b>02/26/08</b>	<b>43,000</b>	<b>&lt; 4,000</b>	<b>8,200</b>	<b>940</b>	<b>1,400</b>	<b>3,700</b>	<b>&lt; 15</b>

**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-3</u>							
01/12/00	140,000	13,000*	22,000	19,000	2,400	11,000	< 500
04/24/00	240,000	700,000*	33,000/	52,000/	5,700/	28,000/	< 5,000
			35,000	87,000	18,000	84,000	
07/20/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/24/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/18/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/05/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
07/17/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/25/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/22/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
09/17/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/18/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
03/25/03	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/23/03	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
09/26/03	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/18/03	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
03/12/04	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/17/04	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
09/17/04	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
11/10/04	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/17/04	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/28/05	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
07/19/05	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/03/05	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/06/05	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
03/15/06	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/28/06	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
8/31/06	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
11/21/06	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
02/23/07	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
05/02/07	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
08/09/07	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/06/07	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
02/26/08	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						

**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-4</b>							
01/12/00	99,000	7,900*	16,000	20,000	2,100	12,000	< 2,500
04/24/00	54,000	44,000*	3,400/ 4,500	13,000/ 20,000	1,800/ 2,800	8,800/ 14,000	< 1,300
07/20/00	8,000	3,500	9,200/ 11,000	20,000/ 22,000	2,500/ 3,400	12,000/ 13,000	< 1,000
10/24/00	98,000	8,000*	21,000	29,000	2,700	15,000	< 1,000
01/18/01	91,000	12,000	17,000/ 15,000	21,000/ 21,000	2,500/ 2,800	13,000/ 11,000	< 1,000 < 5,000
04/05/01	88,000	7,500*	6,900/ 3,200	18,000/ 9,000	2,500/ 1,300	12,000/ 6,400	< 1,000 < 500
07/17/01	95,000	< 3,000	8,000	16,000	2,900	11,000	49
10/25/01	89,000	< 2,200	9,300	18,000	2,400	12,000	66
01/22/02	80,000	< 2,300	4,600	15,000	2,500	11,000	< 50
04/11/02	90,000	< 900	6,600	18,000	2,800	12,000	55
06/25/02	110,000	< 3,000	10,000	20,000	2,900	13,000	< 100
09/17/02	110,000	< 3,000	9,600	21,000	2,800	13,000	< 100
12/18/02	97,000	< 4,000	8,000	20,000	2,600	12,000	< 50
03/25/03	97,000	< 7,500	7,600	22,000	2,500	12,000	< 100
06/23/03	100,000	< 3,000	9,600	22,000	3,300	15,000	< 100
09/26/03	110,000	< 4,000	9,300	17,000	2,100	10,000	< 50
12/18/03	110,000	< 2,000	8,900	19,000	2,500	12,000	< 25
03/12/04	96,000	< 4,000	6,500	18,000	2,700	12,000	< 40
06/17/04	110,000	< 4,000	10,000	20,000	2,900	13,000	< 50
09/17/04	78,000	--	9,300	15,000	2,400	11,000	< 50
11/10/04***	87,000	4,300	15,000	21,000	3,000	16,000	< 1300
12/17/04	88,000	< 3,000	8,500	16,000	2,800	12,000	< 25
04/28/05	110,000	< 3,000	7,800	14,000	2,200	10,000	< 25
07/19/05	90,000	na	10,000	13,000	2,300	10,000	< 40
10/03/05	68,000	< 800	9,400	4,000	1,800	8,700	23
12/06/05	81,000	< 1,500	8,900	7,200	2,200	9,500	< 20
03/15/06	68,000	< 3,000	7,300	14,000	2,500	10,000	< 20
06/28/06	61,000	< 3,000	8,500	4,100	2,600	11,000	< 20
08/31/06	68,000	< 2,000	9,500	9,600	2,500	12,000	< 20
11/21/06	68,000	< 1,500	9,000	5,000	2,000	9,300	< 20
02/23/07	90,000	< 2,000	11,000	11,000	2,800	12,000	< 20
05/02/07	56,000	< 2,000	7,300	6,300	2,500	11,000	< 15
08/09/07	52,000	< 2,000	7,600	2,600	2,100	8,400	< 15
12/06/07	60,000	< 2,000	13,000	2,000	2,800	11,000	< 15
<b>02/26/08</b>	<b>42,000</b>	<b>&lt; 2,000</b>	<b>3,700</b>	<b>2,300</b>	<b>2,300</b>	<b>8,900</b>	<b>&lt; 15</b>

**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-5</u>							
06/11/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	28
09/17/02	< 50	110	< 0.5	< 0.5	< 0.5	< 0.5	4.8
12/18/02	< 50	140	< 0.5	< 0.5	< 0.5	< 0.5	1.8
03/25/03	< 50	130	< 0.5	< 0.5	< 0.5	< 0.5	7.4
06/23/03	< 50	390	< 0.5	< 0.5	< 0.5	< 0.5	17
09/26/03	< 50	700	< 0.5	< 0.5	< 0.5	< 0.5	21
12/18/03	< 50	550	< 0.5	< 0.5	< 0.5	< 0.5	16
03/12/04	< 50	490	< 0.5	< 0.5	< 0.5	< 0.5	9.1
06/17/04	< 50	510	< 0.5	< 0.5	< 0.5	< 0.5	9.8
09/17/04	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	5.5
11/10/04***	< 50	370	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
12/17/04	< 50	120	< 0.5	< 0.5	< 0.5	< 0.5	9.2
04/28/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.2
07/19/05	< 50	na	< 0.5	< 0.5	< 0.5	< 0.5	6.1
10/03/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	2.4
12/06/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
03/15/06	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	3.3
06/28/06	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.8
08/31/06	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	3.4
12/05/06	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.2
02/23/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	6.0
05/02/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	3.8
08/09/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	5.5
12/06/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.8
<b>02/26/08</b>	<b>260</b>	<b>&lt; 50</b>	<b>32</b>	<b>1.3</b>	<b>0.62</b>	<b>0.92</b>	<b>3.4</b>
<u>MW-6</u>							
06/11/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.2
09/17/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.0
12/18/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.90
03/25/03	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
06/23/03	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
09/26/03	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
12/18/03	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
03/12/04	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
06/17/04	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
09/17/04	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
11/10/04***	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
12/17/04	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
04/28/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
07/19/05	< 50	na	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
10/03/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
12/06/05	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
03/15/06	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
06/28/06	< 50	< 50	< 0.5	< 0.5	< 0.5	0.65	< 0.5
08/31/06	< 50	< 50	< 0.50	2.4	0.90	4.0	< 0.50
11/21/06	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
02/23/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
05/02/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
08/09/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
12/06/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
<b>02/26/08</b>	<b>&lt; 50</b>	<b>&lt; 50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>

**TABLE TWO**  
 Summary of Chemical Analysis of Groundwater Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-7</u>							
06/25/02	38,000	< 2,000	890	5,100	1,200	5,200	< 20
09/17/02	26,000	< 2,000	590	3,600	880	4,000	< 20
12/18/02	NOT SAMPLED - CAR PARKED OVER WELL						
03/25/03	39,000	< 2,900	410	7,700	1,000	6,400	< 5.0
06/23/03	17,000	< 1,000	440	2,600	630	2,600	< 10
09/26/03	17,000	< 1,000	230	1,800	470	2,200	< 5.0
12/18/03	20,000	< 1,000	290	2,500	590	2,900	< 5.0
03/12/04	20,000	< 1,500	300	3,000	760	3,200	< 10
06/17/04	12,000	< 800	250	1,800	450	1,900	< 5.0
09/17/04	9,900	--	200	1,500	450	1,800	< 5.0
11/10/04***	20,000	1,900	550	4,200	920	4,000	< 500
12/17/04	14,000	< 800	220	1,700	530	2,000	< 3.0
04/28/05	13,000	< 300	84	1,000	660	2,200	< 2.5
07/19/05	16,000	na	170	1,800	540	2,200	< 2.5
10/03/05	7,400	< 200	140	710	350	1,100	< 0.50
12/06/05	22,000	< 600	240	2,300	800	3,400	< 5.0
03/15/06	3,800	< 200	4.6	160	120	620	< 0.50
06/28/06	6,400	< 500	19.0	340	490	940	< 0.90
08/31/06	20,000	< 600	160	2,200	1,300	3,500	< 2.5
11/21/06	21,000	< 1,000	240	2,500	880	3,400	< 5.0
02/23/07	10,000	< 200	150	1,300	580	2,400	< 2.5
05/02/07	26,000	< 1,000	300	2,400	1,800	6,700	< 2.5
08/09/07	13,000	< 800	250	800	1,000	3,000	< 2.5
12/06/07	9,600	< 1,000	160	850	530	2,000	< 2.5
<b>02/26/08</b>	<b>14,000</b>	<b>&lt; 800</b>	<b>190</b>	<b>1,000</b>	<b>740</b>	<b>3,000</b>	<b>&lt; 2.5</b>
<u>MW-8</u>							
<b>02/26/08</b>	<b>&lt; 50</b>	<b>&lt; 50</b>	<b>0.51</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>
<b>ESL</b>	<b>100</b>	<b>100</b>	<b>1</b>	<b>40</b>	<b>30</b>	<b>20</b>	<b>5</b>

Notes:

\* = Hydrocarbons reported are in the early diesel range, and do not match the laboratory standard.

\*\* = Hydrocarbons reported do not match the laboratory gasoline standard.

\*\*\* = Grab sample - Not purged

# = Estimated concentration reported due to overlapping fuel patterns.

/ = Results separated by a slash represent results from two different laboratory methods (B020/B260).

na = not analyzed

Non-detectable concentrations noted by the less than sign (<) followed by the detection limit.

Most recent data in bold.

ESL = Environmental screening levels for sites where groundwater is a current or potential source of drinking water as presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (November 2007)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

**TABLE THREE**  
**Groundwater Analytical Results**  
**Oil & Grease and Volatile Organic Compounds**  
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>7/8/97</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethane (PCE)	0.9	< 0.5	-	-	-	-	-
Other VOCs	< 0.5 - < 3	< 0.5 - < 3	-	-	-	-	-
<u>1/26/98</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Trichloroethene	0.7	< 5.0	-	-	-	-	-
Tetrachloroethene	10	< 5.0	-	-	-	-	-
1,2-Dichloroethane	< 0.5	11	-	-	-	-	-
Other VOCs	< 0.5 - < 50	< 0.5 - < 50	-	-	-	-	-
<u>7/23/98</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	4	4.6	-	-	-	-	-
1,2-Dichloroethane	< 2	9.9	-	-	-	-	-
Other VOCs	< 2 - < 10	< 0.5 - < 5.0	-	-	-	-	-
<u>1/5/99</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	5.1	< 50	-	-	-	-	-
Trichloroethene	0.52	< 50	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.58	< 50	-	-	-	-	-
Chloroform	8.2	< 50	-	-	-	-	-
Other VOCs	< 0.5 - < 5	< 50 - < 500	-	-	-	-	-
<u>7/13/99</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	1.5	0.68	-	-	-	-	-
Chloroform	4.6	< 50	-	-	-	-	-
1,2-Dichloroethane	< 0.50	7.7	-	-	-	-	-
Other VOCs	< 0.5 - < 5	< 0.5 - < 500	-	-	-	-	-
<u>1/12/00</u>							
Hydrocarbon Oil and Grease	-	< 1,000	< 1,000	< 1,000	-	-	-
Tetrachloroethene	0.8	< 1.0	< 100	< 50	-	-	-
Chloroform	3.2	< 1.0	< 100	< 50	-	-	-
1,2-Dichloroethane	< 0.50	8.8	120	140	-	-	-
Acetone	-	-	25,000	6,400	-	-	-
Naphthalene	-	-	550	540	-	-	-
Isopropylbenzene	-	-	120	89	-	-	-
Other VOCs	< 0.5 - < 5.0	< 1.0 - < 4.0	< 100 - < 10,000	< 50 - < 5,000	-	-	-
<u>4/24/00</u>							
Hydrocarbon Oil and Grease	-	< 1,000	4,100	< 1,000	-	-	-
1,2-Dichloroethane	< 0.5	5.9	< 1,000	< 250	-	-	-
Naphthalene	-	-	3,800	590	-	-	-
Isopropylbenzene	-	-	1,200	< 250	-	-	-
Other VOCs	< 0.5 - < 5.0	< 5.0 - < 20	< 1,000 - < 100,000	< 250 - < 25,000	-	-	-
<u>7/20/00</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	< 1,000	-	-	-
Tetrachloroethene	0.59	< 5.0	FREE	< 200	-	-	-
Chloroform	2.1	< 5.0	PRODUCT	< 200	-	-	-
1,2-Dichloroethane	< 0.5	6.7	---	< 200	-	-	-
Acetone	-	-	NOT	< 20,000	-	-	-
Naphthalene	-	-	SAMPLED	730	-	-	-
Other VOCs	< 0.5 - < 20	< 5.0 - < 20	-	< 250 - < 20,000	-	-	-
<u>10/24/00</u>							
Hydrocarbon Oil and Grease	-	< 1,000	FREE	< 1,000	-	-	-
Tetrachloroethene	< 0.5	< 5.0	---	< 250	-	-	-
Chloroform	1.0	< 5.0	NOT	< 250	-	-	-
Other VOCs	< 0.5 - < 20	< 5.0 - < 20	SAMPLED	< 250 - < 25,000	-	-	-
<u>1/8/01</u>							
Hydrocarbon Oil and Grease	-	2,100	FREE	1,300	-	-	-
Tetrachloroethene	1.3	< 5.0	---	< 250	-	-	-
Chloroform	6.4	< 5.0	NOT	< 250	-	-	-
Other VOCs	< 0.5 - < 20	< 5.0 - < 20	SAMPLED	< 250 - < 25,000	-	-	-

**TABLE THREE**  
**Groundwater Analytical Results**  
**Oil & Grease and Volatile Organic Compounds**  
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>4/5/01</u>							
Hydrocarbon Oil and Grease	-	< 1.0	FREE	1,100.0	-	-	-
Tetrachloroethene	< 0.5	1.1	PRODUCT	< 50	-	-	-
1,2 dichloroethane	< 0.5	4.6	---	< 50	-	-	-
Trichloroethene	< 0.5	0.58	NOT	< 50	-	-	-
Naphthalene	-	-	---	320	-	-	-
Other VOCs	< 0.5 - < 2.0	< 5.0 - < 20	SAMPLED	< 50 - < 5,000	-	-	-
<u>7/17/01</u>							
Hydrocarbon Oil and Grease	-	< 500	FREE	< 500	-	-	-
Tetrachloroethene	-	-	PRODUCT	-	-	-	-
1,2 dichloroethane	< 0.5	< 50	---	69.0	-	-	-
Trichloroethene	-	-	NOT	-	-	-	-
Naphthalene	-	-	---	-	-	-	-
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>10/25/01</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	72	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>1/22/02</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	< 50	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>6/11/02</u>							
Oil and Grease	-	1,100	FREE	-	< 1,000	< 1,000	-
1,2 dichloroethane	-	< 50	PRODUCT	-	< 0.5	< 0.5	-
1,2 dibromoethane	-	< 50	NOT	-	< 0.5	< 0.5	-
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>6/25/02</u>							
Oil and Grease	-	-	FREE	1,400	-	-	< 1,000
1,2 dichloroethane	-	-	PRODUCT	< 100	-	-	< 20
1,2 dibromoethane	-	-	NOT	< 100	-	-	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>9/17/02</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	-	< 20	PRODUCT	< 100	< 0.50	< 0.50	< 20
1,2 dibromoethane	-	< 20	NOT	< 100	< 0.50	< 0.50	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>12/18/02</u>							
Oil and Grease	-	1,200	FREE	< 1,000	< 1,000	< 1,000	CAR PARKED
1,2 dichloroethane	-	< 10	PRODUCT	< 50	< 0.50	< 0.50	OVER WELL
1,2 dibromoethane	-	< 10	NOT	< 50	< 0.50	< 0.50	NOT
Other VOCs	-	-	SAMPLED	-	-	-	SAMPLED
<u>3/25/03</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	-	< 50	PRODUCT	< 100	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	-	< 50	NOT	< 100	< 0.50	< 0.50	< 2.5
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>6/23/03</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	< 0.5	< 50	PRODUCT	< 100	< 0.50	< 0.50	< 10
1,2 dibromoethane	< 0.5	< 50	NOT	< 100	< 0.50	< 0.50	< 10
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>9/26/03</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	< 0.5	< 50	PRODUCT	87	< 0.50	< 0.50	< 5.0
1,2 dibromoethane	< 0.5	< 50	NOT	< 50	< 0.50	< 0.50	< 5.0
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>12/18/03</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 20	PRODUCT	46	< 0.50	< 0.50	< 5.0
1,2 dibromoethane	< 0.5	< 20	NOT	< 25	< 0.50	< 0.50	< 5.0
Other VOCs	-	-	SAMPLED	-	-	-	-

**TABLE THREE**  
**Groundwater Analytical Results**  
**Oil & Grease and Volatile Organic Compounds**  
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>3/12/04</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 25	PRODUCT	< 40	< 0.50	< 0.50	< 10
1,2 dibromoethane	< 0.5	< 25	NOT	< 40	< 0.50	< 0.50	< 10
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>6/17/04</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 25	PRODUCT	93	< 0.50	< 0.50	< 5.0
1,2 dibromoethane	< 0.5	< 25	NOT	< 50	< 0.50	< 0.50	< 5.0
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>9/17/04</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	-	-	PRODUCT	-	-	-	-
1,2 dibromoethane	-	-	NOT	-	-	-	-
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>12/17/04</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 15	PRODUCT	53	< 0.50	< 0.50	< 3.0
1,2 dibromoethane	< 0.5	< 15	NOT	< 25	< 0.50	< 0.50	< 3.0
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>4/28/05</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 15	PRODUCT	46	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.5	< 15	NOT	< 25	< 0.50	< 0.50	< 2.5
DIPE	0.67	90	SAMPLED	< 25	< 0.50	< 0.50	< 2.5
Other VOCs	< 0.5	< 15	-	< 25	< 0.50	< 0.50	< 2.5
<u>7/19/05</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 15	PRODUCT	73	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.5	< 15	NOT	< 40	< 0.50	< 0.50	< 2.5
DIPE	0.76	< 15	SAMPLED	< 20	2.1	< 0.50	< 2.5
TBA	< 5.0	77	-	< 20	< 5.0	< 5.0	< 5.0
Other VOCs	< 0.50	< 15	-	< 20	< 0.50	< 0.50	< 2.5
<u>10/3/05</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.5	< 15	FREE	62	< 0.50	< 0.50	< 0.50
1,2 dibromoethane	< 0.5	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 0.50
DIPE	< 0.5	< 15	NOT	23	1.7	< 0.50	< 0.50
TBA	< 5.0	< 7.0	SAMPLED	< 5.0	< 5.0	< 5.0	< 5.0
Other VOCs	< 0.5	< 15	-	< 20	< 0.50	< 0.50	< 0.50
<u>3/15/06</u>							
Oil and Grease	-	-	FREE	-	-	-	-
1,2 dichloroethane	< 0.5	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 0.50
1,2 dibromoethane	< 0.5	< 15	NOT	< 20	< 0.50	< 0.50	< 0.50
Other VOCs	< 0.5	< 15	SAMPLED	< 20	< 0.50	< 0.50	< 0.50
<u>6/28/06</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.5	33	FREE	20	< 0.50	< 0.50	< 0.90
1,2 dibromoethane	< 0.5	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 0.90
TBA	< 5.0	< 5.0	NOT	< 5.0	< 5.0	< 5.0	< 5.0
Other VOCs	< 0.5	< 15	SAMPLED	< 20	< 0.50	< 0.50	< 0.50
<u>8/31/06</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	36	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 2.5
DIPE	< 0.50	< 15	NOT	< 20	< 0.50	< 0.50	1.4
TBA	< 5.0	81	SAMPLED	< 5.0	< 5.0	< 5.0	< 15
Other VOCs	< 0.50	< 15	-	< 20	< 0.50	< 0.50	< 5.0
<u>11/21/06</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	42	< 0.50	< 0.50	< 5.0
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 5.0
DIPE	< 0.50	< 15	NOT	< 20	1.7	< 0.50	< 5.0
TBA	< 5.0	82	SAMPLED	230	5.4	< 5.0	< 25
Other VOCs	< 0.50	< 15	-	< 20	< 0.50	< 0.50	< 5.0



**TABLE THREE**  
**Groundwater Analytical Results**  
**Oil & Grease and Volatile Organic Compounds**  
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>2/12/07</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	36	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 20	< 0.50	< 0.50	< 2.5
DIPE	1.2	< 15	NOT	< 20	1.4	< 0.50	< 2.5
TBA	< 5.0	19.0	SAMPLED	29.0	< 5.0	< 5.0	< 15
Other VOCs	< 0.50	< 15	-	< 20	< 0.50	< 0.50	< 2.5
<u>5/2/07</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	2.0	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 15	< 0.50	< 0.50	< 2.5
DIPE	1.3	< 15	NOT	< 15	1.3	< 0.50	< 2.5
TBA	< 5.0	11.0	SAMPLED	16.0	< 5.0	< 5.0	< 5.0
Other VOCs	< 0.50	< 15	-	< 15	< 0.50	< 0.50	< 2.5
<u>8/9/07</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	31	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 15	< 0.50	< 0.50	< 2.5
DIPE	0.85	< 15	NOT	15	1.3	< 0.50	< 2.5
TBA	< 5.0	81	SAMPLED	17.0	< 5.0	< 5.0	< 15
Other VOCs	0.96 PCE	< 15	-	< 15	0.72 PCE	< 0.50	< 2.5
<u>12/6/07</u>							
Oil and Grease	-	-	-	-	-	-	-
1,2 dichloroethane	< 0.50	< 15	FREE	< 15	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 15	< 0.50	< 0.50	< 2.5
DIPE	< 0.50	< 15	NOT	22	1.5	< 0.50	< 2.5
TBA	< 5.0	12.0	SAMPLED	15.0	< 5.0	< 5.0	4.5
Other VOCs	< 0.50	< 15	-	< 15	< 0.50	< 0.50	< 2.5
<u>2/26/08</u>							
1,2 dichloroethane	< 0.50	< 15	FREE	< 15	0.60	< 0.50	< 2.5
1,2 dibromoethane	< 0.50	< 15	PRODUCT	< 15	< 0.50	< 0.50	< 2.5
DIPE	1.1	< 15	NOT	< 15	5.6	< 0.50	< 2.5
TBA	< 5.0	< 70	SAMPLED	90	7.7	< 5.0	69
Other VOCs	< 0.50	< 15	-	< 15	< 0.50	< 0.50	< 2.5

**TABLE FOUR**  
**Summary of Chemical Analysis of SOIL Samples**  
**Petroleum Hydrocarbons**  
All results are in parts per million

Well ID	Depth (ft)	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA	EDC	EDB
SB - 1	20'	<b>3,600</b>	<b>1100*</b>	<b>19</b>	<b>170</b>	<b>99</b>	<b>420</b>	< 0.25	< 0.25	< 0.25	< 0.25	< 1.5	< 0.25	< 0.25
SB - 1	25'	<b>270</b>	<b>820</b>	<b>1.1</b>	<b>0.27</b>	<b>0.96</b>	<b>2.4</b>	< 0.025	< 0.025	< 0.025	< 0.025	<b>0.21</b>	< 0.025	< 0.025
SB - 1	30'	< 1.0	<b>2.9**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 1	35'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 1	40'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 1	50'	< 1.0	<b>3.9**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 1	55'	< 1.0	<b>6.4**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 1	60'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 2	5'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 2	15'	< 1.0	<b>2.6**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 3	15'	< 1.0	<b>16**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 4	15'	< 1.0	<b>4.2**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 5	15'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 6	15'	< 1.0	<b>1.2**</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 7	15'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 8	14.5'	< 1.0	<b>1.0</b>	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 9	14.5'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
SB - 10	14.5'	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
<b>ESL</b>		<b>400</b>	<b>500</b>	<b>0.18</b>	<b>9.3</b>	<b>32</b>	<b>11</b>	<b>2.0</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>110</b>	<b>NE</b>	<b>NE</b>

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.  
Detectable concentrations are in **bold**.

\* = Hydrocarbons reported as TPH-D do not exhibit a typical chromatographic pattern. These hydrocarbons are lower boiling than typical diesel fuel.

\*\* = Hydrocarbons reported as TPH-D do not exhibit a typical chromatographic pattern. These hydrocarbons are higher boiling than typical diesel fuel.

ESL = Environmental screening level for residential soil where groundwater is not a current or potential source of drinking water as presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (February 2005)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

NE = ESL not established.

**TABLE FIVE**  
**Summary of Chemical Analysis of WATER Samples**  
**Petroleum Hydrocarbons**  
**All results are in parts per billion**

Well ID	Depth (ft)	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA	EDC	EDB
SB-1	20-23'	<b>160,000</b>	< 200,000	<b>33,000</b>	<b>39,000</b>	<b>2,900</b>	<b>13,000</b>	< 25	< 25	< 25	< 25	< 150	< 25	< 25
SB-1	28-31'	<b>37,000</b>	< 1,500	<b>1,300</b>	<b>3,500</b>	<b>1,500</b>	<b>4,400</b>	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0	< 5.0
SB-1	51-53'	<b>5,200</b>	< 800	<b>120</b>	<b>320</b>	<b>160</b>	<b>500</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-2	20-25'	<b>5,200</b>	<b>190,000</b>	<b>0.60</b>	<b>2.8</b>	< 0.50	<b>0.77</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-3	20-25'	< 50	<b>700</b>	< 0.50	2.6	< 0.50	<b>0.88</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-4	20-25'	<b>260</b>	<b>7,900</b>	< 0.50	<b>2.7</b>	<b>6.8</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-5	20-25'	< 50	< 50	< 0.50	<b>2.8</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-6	20-25'	< 50	< 50	< 0.50	<b>2.3</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-7	20-25'	< 50	<b>190**</b>	<b>0.72</b>	<b>1.6</b>	< 0.50	< 0.50	<b>9.8</b>	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-8	15-20'	< 50	<b>150**</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-9	15-20'	< 50	<b>650**</b>	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
SB-10	15-25'	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50
<b>ESL (Drinking Water)</b>		<b>100</b>	<b>100</b>	<b>1</b>	<b>40</b>	<b>30</b>	<b>20</b>	<b>5</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>0.5</b>	<b>0.05</b>
<b>ESL (Non-Drinking Water)</b>		<b>5,000</b>	<b>2,500</b>	<b>540</b>	<b>400</b>	<b>300</b>	<b>5,300</b>	<b>1,800</b>				<b>50,000</b>	<b>200</b>	<b>150</b>

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.  
 Detectable concentrations are in **bold**.

\* = Hydrocarbons reported as TPH-D do not exhibit a typical chromatographic pattern. These hydrocarbons are lower boiling than typical diesel fuel.

\*\* = Hydrocarbons reported as TPH-D do not exhibit a typical chromatographic pattern. These hydrocarbons are higher boiling than typical diesel fuel.

ESL = Environmental screening level for groundwater where groundwater is not a current or potential source of drinking water as presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (November 2007)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

NE = ESL not established.

TABLE SIX  
 Summary of Chemical Analysis of SOIL VAPOR Samples  
 Petroleum Hydrocarbon Concentrations  
 All results are in uG/L

Sample Location	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene
SV-1	30	1.3	0.78	0.13	0.32	0.19
SV-2	42	0.62	0.62	0.25	0.36	0.18
SV-3	47	0.42	0.83	0.55	0.74	0.32
SV-4	64	0.36	0.86	0.59	0.77	0.21*
SV-5	4.2	0.070	0.071	0.017	0.038	0.020
SV-6	110	1.8*	0.13*	0.085*	0.13*	0.073
SV-6 (Dupl)	110	1.8*	0.14*	0.087*	0.12*	0.072
SV-7	64	2.7	1.4	0.25	0.59	0.35
SV-8	4.2	0.068	0.15	0.057	0.13	0.064
SV-9	1.3	0.0087	0.033	0.023	0.064	0.036
SV-10	0.39	0.0069	0.027	< 0.0088	0.025	0.012
<b>ESL (Residential)</b>	<b>10</b>	<b>0.084</b>	<b>63</b>	<b>210</b>	<b>210</b>	<b>210</b>
<b>ESL (Commercial)</b>	<b>29</b>	<b>0.28</b>	<b>180</b>	<b>580</b>	<b>580</b>	<b>580</b>

Notes:

ESL = Environmental screening levels (lowest exposure for indoor air) presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (November 2007)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (Volume 2; Table E-2).

\* = Reported value may be biased due to apparent matrix interferences.



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX A**

Access Agreements from Surrounding Property Owners



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

December 10, 2007

Chinese Independent Baptist Church  
280 8<sup>th</sup> Street  
Oakland, CA 94607

SUBJECT: ACCESS AGREEMENT  
280 8th Street  
Oakland, California

Dear Sir or Madam::

The Lim Family is being required by the Alameda County Health Care Services Agency (ACHCSA) to conduct indoor air sampling for properties adjacent to their property at 250 8<sup>th</sup> Street. This sampling is being conducted to verify that vapors associated with a former release of gasoline from former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California have not entered your building. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family.

To complete this assessment, ASE would like to collect air samples from inside your building located at 280 8<sup>th</sup> Street in Oakland, California. There are two proposed locations on your property. ASE requires your written permission to access your property. ASE has provided our standard access agreement attached to this letter. Please review this access agreement and if it is acceptable please sign it and FAX it back to us at (925) 837-4853. If you have any questions, please feel free to call me at (925) 820-9391. We would like to complete this assessment during the month of December, so we would appreciate your timely attention to this matter.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

A handwritten signature in black ink that reads 'Robert E. Kitty'. The signature is written in a cursive style with a large 'R' and 'K'.

Robert E. Kitty, P.G., R.E.A.  
Senior Geologist

### ACCESS AGREEMENT

The Lim Family is being required by the Alameda County Health Care Services Agency (ACHCSA) to conduct air sampling related to the former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family. To complete this assessment, ASE would like to collect indoor air samples from your property located at 280 8th Street in Oakland, California (your property). This document grants ASE access to your property for the purpose of conducting these activities.

As a condition for receiving access to your property, ASE agrees to at all times while conducting work on the property maintain liability, automotive and workers compensation insurance. ASE will also require any subcontractors to also maintain such insurance. ASE agrees to hold the property owner harmless for any liability that may arise related to ASE's activities at the site. All environmental activities will be at no cost to the property owner.

ASE also agrees to provide a copy of the analytical results to the property owner at the completion of the assessment.

The property owner agrees to grant access to us at a mutually agreeable time. The sampling should be completed in less than a day.

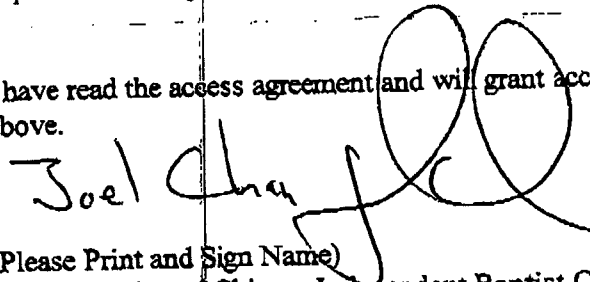
### AGREEMENT

I agree to be bound by the terms and conditions stated above.



Robert Kitay  
Aqua Science Engineers

I have read the access agreement and will grant access to my property to conduct the work stated above.



(Please Print and Sign Name)  
Representative of Chinese Independent Baptist Church  
Property Owner

## ACCESS AGREEMENT

The Lim Family is being required by the Alameda County Health Care Services Agency (ACHCSA) and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) to conduct a soil, groundwater and soil vapor assessment related to the former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family. To complete this assessment, ASE would like to place temporary soil borings on your property located at 817 Alice Street in Oakland, California (your property). This document grants ASE access to your property for the purpose of conducting these activities.

As a condition for receiving access to your property, ASE agrees to at all times while conducting work on the property maintain liability, automotive and workers compensation insurance. ASE will also require any subcontractors to also maintain such insurance. ASE agrees to hold the property owner harmless for any liability that may arise related to ASE's activities at the site. All environmental activities will be at no cost to the property owner.

ASE also agrees to contact Underground Service Alert (USA) to mark underground utility lines in the site vicinity at least 48 hours prior to drilling. ASE will also obtain a drilling permit from the Alameda County Public Health Agency (ACPWA) prior to drilling. ASE will file all required paperwork with the ACPWA following the completion of the drilling.

ASE also agrees to provide a copy of the analytical results to the property owner at the completion of the assessment.

ASE also agrees to match the existing surface conditions (concrete or asphalt patch) upon completion of the drilling.

The property owner agrees to have the drilling location accessible to us at a mutually agreeable time. The drilling should be completed in less than a day.

VOID AFTER 60 DAYS FROM 1/5/08 T.G.



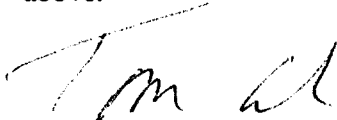
**AGREEMENT**

I agree to be bound by the terms and conditions stated above.



**Robert Kitay**  
**Aqua Science Engineers**

I have read the access agreement and will grant access to my property to conduct the work stated above.



**Tom Aswad**  
**Property Owner**

## ACCESS AGREEMENT

The Lim Family is being required by the Alameda County Health Care Services Agency (ACIICSA) to conduct air sampling related to the former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family. To complete this assessment, ASE would like to collect indoor air samples from your property located at 251-259 8th Street in Oakland, California (your property). This document grants ASE access to your property for the purpose of conducting these activities.

As a condition for receiving access to your property, ASE agrees to at all times while conducting work on the property maintain liability, automotive and workers compensation insurance. ASE will also require any subcontractors to also maintain such insurance. ASE agrees to defend, indemnify and hold the property owner harmless for any liability caused by ASE's activities at the site. Specifically excluded is any liability related to the existence of contamination not caused by ASE. All environmental activities will be at no cost to the property owner.

ASE also agrees to provide a copy of the analytical results to the property owner at the completion of the assessment.

The property owner agrees to grant access to us at a mutually agreeable time. The sampling should be completed in less than a day.

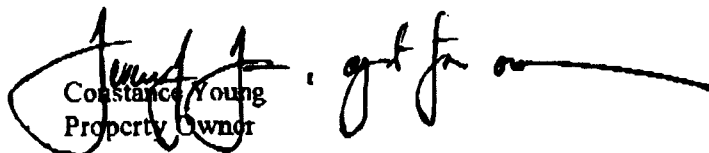
### AGREEMENT

I agree to be bound by the terms and conditions stated above.



Robert Kitay  
Aqua Science Engineers

I have read the access agreement and will grant access to my property to conduct the work stated above.



Constance Young  
Property Owner



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
 (925) 820-9391 - Fax (925) 837-4853 - www.aquascienceengineers.com

December 10, 2007

Chinese Presbyterian Church  
 265 8<sup>th</sup> Street  
 Oakland, CA 94607

SUBJECT: ACCESS AGREEMENT  
 265 8th Street  
 Oakland, California

Dear Sir or Madam::

The Lim Family is being required by the Alameda County Health Care Services Agency (ACHCSA) to conduct indoor air sampling for properties adjacent to their property at 250 8<sup>th</sup> Street. This sampling is being conducted to verify that vapors associated with a former release of gasoline from former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California have not entered your building. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family.

To complete this assessment, ASE would like to collect air samples from inside your building located at 265 8<sup>th</sup> Street in Oakland, California. There are two proposed locations on your property. ASE requires your written permission to access your property. ASE has provided our standard access agreement attached to this letter. Please review this access agreement and if it is acceptable please sign it and FAX it back to us at (925) 837-4853. If you have any questions, please feel free to call me at (925) 820-9391. We would like to complete this assessment during the month of December, so we would appreciate your timely attention to this matter.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, P.G., R.E.A.  
 Senior Geologist

① Access Agreement attached.  
 ② Please call our office (510) 452-4963 to arrange time for air sampling.  
 KWONG CHANG  
 CLERK OF SESSION  
 12/23/07

## ACCESS AGREEMENT

The Lim Family is being required by the Alameda County Health Care Services Agency (ACHCSA) to conduct air sampling related to the former underground storage tanks on their property located at 250 8<sup>th</sup> Street, Oakland, California. Aqua Science Engineers (ASE), an environmental consulting firm, is conducting this assessment for the Lim Family. To complete this assessment, ASE would like to collect indoor air samples from your property located at 265 8th Street in Oakland, California (your property). This document grants ASE access to your property for the purpose of conducting these activities.

As a condition for receiving access to your property, ASE agrees to at all times while conducting work on the property maintain liability, automotive and workers compensation insurance. ASE will also require any subcontractors to also maintain such insurance. ASE agrees to hold the property owner harmless for any liability that may arise related to ASE's activities at the site. All environmental activities will be at no cost to the property owner.

ASE also agrees to provide a copy of the analytical results to the property owner at the completion of the assessment.

The property owner agrees to grant access to us at a mutually agreeable time. The sampling should be completed in less than a day.

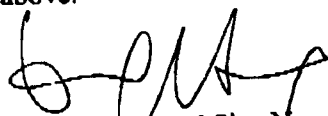
## AGREEMENT

I agree to be bound by the terms and conditions stated above.



Robert Kitay  
Aqua Science Engineers

I have read the access agreement and will grant access to my property to conduct the work stated above.



KWONG CHANG  
(Please Print and Sign Name) (CLERK OF SESSION)  
Representative of Chinese Presbyterian Church  
Property Owner



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)


## **APPENDIX B**

**Report of Indoor Air Sampling for Site and Surrounding Properties**

**Earth Safety Dynamics  
Industrial Hygiene Monitoring Report**

DATE: February 19, 2008

TO: Mr. Robert Kitay, Aqua Science Engineers, Inc.

FROM: Kevin R. Braun, CIH  
Earth Safety Dynamics 

SUBJECT: Industrial Hygiene Monitoring C027-16  
Selected Volatile Organic Compounds in Indoor Air  
Vicinity of Former Gasoline Service Station  
250 8<sup>th</sup> Street  
Oakland, California

**I. EXECUTIVE SUMMARY**

A gasoline station was previously located on the property located at 250 8<sup>th</sup> Street in Oakland, California. A plume of groundwater contamination (consisting of elevated concentrations of volatile organic compounds) has been identified beneath the site, resulting in elevated soil gas concentrations of volatile organic compounds. This, in turn, has generated concern regarding possible vapor intrusion to the occupied spaces of overlying structures.

On January 30<sup>th</sup>, 2008 air samples were obtained from the interior of several buildings located at and around the former gasoline service station located at 250 8<sup>th</sup> Street in Oakland, California. Samples of interior air were obtained during a normal work shift using evacuated Summa canisters with flow controllers set to sample over approximately 8 hours, with a concurrent outdoor reference sample taken for comparison. Samples were taken from the interior of Chong Long Market (1 sample), Chinese Presbyterian and Chinese Baptist Churches (2 samples each), a transmission repair facility (250 8<sup>th</sup>), a photo shop (249 8<sup>th</sup>), and a beauty shop (253 8<sup>th</sup>). These samples were shipped under chain of custody protocol to Air Toxics, Ltd of Folsom, California for analysis in accordance with EPA Method TO-15 SIM. Target compounds (listed in the approved Work Plan) chosen based upon previous environmental studies included benzene and total petroleum hydrocarbons (gasoline fraction). Full analytical results are included in the appendices.

No California Human Health Screening Level is currently established for gasoline in aggregate; rather standards are established for individual constituents. The California Division of Occupational Safety and Health (Cal/OSHA) has established an occupational Permissible Exposure Limit (PEL) for gasoline of 300 parts per million by volume (300 ppmv). All gasoline concentrations detected in indoor air were at least three orders of magnitude below this value, with the maximum detected indoor concentration measured at 0.23 ppm.

Applicable commercial/industrial land use California Human Health Screening Levels (CHHSLs) for indoor air, as published by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment, along with established Permissible Exposure Limits (PELs) are as follows:

<u>Contaminant</u>	<u>CHHSL</u>	<u>PEL</u>
Benzene	0.14 $\mu\text{g}/\text{m}^3$	1.0 ppm
Gasoline	N/A	300 ppm

All sample benzene concentrations, including the ambient control, exceeded the CHHSL value by an order of magnitude or greater. With the exception of the interior of the repair facility located at 250 8<sup>th</sup> Street (which disassembles automobile components and has a wide variety of fuels and lubricants present constantly), all measured benzene concentrations were essentially identical to ambient.

Benzene concentrations were elevated in the repair shop compared with ambient values and those obtained in adjacent structures. The nature of operations in the repair shop make it likely that the benzene source is internal, but the data do not rule out significant dose contribution by subsurface vapor intrusion of benzene into this area. Due to the occupational nature of VOC exposures associated with automotive repair, the PEL may be a more applicable standard for this facility.

None of the other locations demonstrated any significant difference between interior and exterior vapor concentrations. It is unlikely that vapor intrusion from subsurface soils is contributing significantly to occupant dose in any of these other evaluated structures.

Calculation of dose received over the course of a 10-hour shift in these buildings ranged from 31  $\mu\text{g}/\text{day}$  (outside air) to 119  $\mu\text{g}/\text{day}$  (repair shop). All estimated dosages (including ambient control) exceeded the Proposition 65 No Significant Risk level.

## II. METHODS

Sampling was performed on a day reported by management as representative of normal operations and conditions. All roll-up doors were open, and production was described by management and staff as "average." Samples were taken in accordance with established EPA methodology and the approved Work Plan as follows:

### A. INTEGRATED SAMPLING

Air samples were obtained using 6-liter Summa Canisters (cleaned to SIM standards) fitted with eight-hour flow controllers in accordance with EPA Method TO-15 SIM and the project air sampling workplan. Canister pressures (relative vacuum) were recorded prior and subsequent to sampling as well as periodically during sampling in order to ensure a constant sampling rate. All canisters were situated with flow controller inlets at approximately breathing zone height above ground surface.

No slab penetrations were noted in occupied areas (excluding bathrooms, utility closets, etc. which are occupied for only minutes at a time). Air samples were obtained from breathing zone height in occupied ground floor areas and designated as follows:

- **1/30 – Cont:** This outdoor reference sample was obtained from an exterior fenceline approximately 10 meters northwest from the northwest (upwind) corner of the parking lot located at the southwest corner of 8<sup>th</sup> and Harrison Streets. This location was perceived to be within the general setting of yet outside the influence of the building envelopes. Wind direction varied between NW and NNW throughout the day, indicating that this sample remained upwind of the study area for the duration of all sampling. Moderate to heavy vehicle traffic was noted in the area throughout the day.
- **1/30 - CLM:** Interior sample taken from the rear of the Chong Long Market at 257 8<sup>th</sup> St. Some cooking facilities were noted in the sampling area, but no fuels or any other substances expected to result in interferences were noted.
- **1/30 – CPC - 1:** Interior sample taken from back of the social hall at the Chinese Presbyterian Church located at 265 8<sup>th</sup> Street. No cleaners, office products, or other substances that would be expected to create sample interference were noted.
- **1/30 – CPC - 2:** Interior sample taken from the front of the Sanctuary of the Chinese Presbyterian Church.
- **1/30 – CBC - 1:** Interior sample taken from the front of the Sanctuary of the Chinese Baptist Church located at 280 8<sup>th</sup> Street. This sample was taken from the choir pews. Several candles were observed burning in this area during sampling, which could potentially contribute to airborne paraffin concentrations.
- **1/30 – CBC – 1:** Interior sample taken from the rear of the social hall within the Chinese Baptist Church. No cleaners or other possible interferences were noted in the area.



- **1/30 – 250 8th:** Interior sample taken from the approximate center of the office area of the auto transmission repair shop located at 250 8<sup>th</sup> Street. The use of solvents, degreasers, lubricants, fuels, etc. as well as their presence in vehicles being serviced could create significant interferences, possibly mimicking or masking presence of vapors intruding from soil gas.
- **1/30 – 249 8th:** Interior sample taken from the rear of the photo shop. Some chemicals including glycols and other solvents and fixatives are used in the process, but these are generally used in a sealed processing unit that was not serviced or otherwise opened on the day of sampling.
- **1/30 – 253 8th:** Interior sample taken from the rear of the beauty shop. Significant volumes of chemicals are used in various hair dyes, etc., but none were inspected that were expected to cause any significant interferences.

### **III. RESULTS**

#### **3.1 SAMPLE ANALYSIS**

Air samples were delivered under chain-of-custody protocol to Air Toxics, Limited of Folsom, California. Air Toxics is accredited by the American Industrial Hygiene Association and United States and California Environmental Protection Agencies. Samples were analyzed for target compounds in accordance with EPA Method TO-15 SIM. Full analytical and quality assurance reports are included in the appendices of this document.

### 3.2 RESULTS

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – Cont.	Outdoor Control	Benzene	1.8 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	N.D. *	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – CLM	Chong Long Market	Benzene	2.2 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.045 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – CPC - 1	Chinese Presbyterian Church Fellowship Hall	Benzene	1.5 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.20 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – CPC - 2	Chinese Presbyterian Church Sanctuary	Benzene	1.7 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.18 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – CBC - 1	Chinese Baptist Church Sanctuary	Benzene	1.6 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.043 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – CBC - 2	Chinese Baptist Church Fellowship Hall	Benzene	1.5 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	N.D. *	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – 250 8 <sup>th</sup>	Transmission Shop Office	Benzene	7.0 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.22 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – 249 8 <sup>th</sup>	Photo Shop	Benzene	1.5 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	N.D. *	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – 253 8 <sup>th</sup>	Beauty Shop	Benzene	1.6 µg/m <sup>3</sup>	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.23 ppm	None	300 ppm

<u>Sample</u>	<u>Description</u>	<u>Analyte</u>	<u>Vapor Conc.</u>	<u>CHHSL**</u>	<u>PEL†</u>
1/30 – Field Blank	Field, Trip, and Laboratory Blank	Benzene	N.D. *	0.14 µg/m <sup>3</sup>	1000 µg/m <sup>3</sup>
		Tph (gasoline)	0.040 ppm	None	300 ppm

**Concentration Units:**    µg/m<sup>3</sup> = Micrograms per Cubic Meter of Air  
                                      ppm = Parts per Million (by volume) total in air

- \*        Indicates sample concentration below the method limit of detection
- \*\*       California Human Health Screening Level
- †        Permissible Exposure Limit; 8 CCR 5155; Table AC-1

#### IV. DISCUSSION AND RECOMMENDATIONS

No California Human Health Screening Level is currently established for gasoline in aggregate; rather standards are established for individual constituents. The California Division of Occupational Safety and Health (Cal/OSHA) has established an occupational Permissible Exposure Limit (PEL) for gasoline of 300 parts per million by volume (300 ppmv). All gasoline concentrations detected in indoor air were at least three orders of magnitude below this value, with the maximum detected indoor concentration measured at 0.23 ppm.

Applicable commercial/industrial land use California Human Health Screening Levels (CHHSLs) for indoor air, as published by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment, along with established Permissible Exposure Limits (PELs) are as follows:

<u>Contaminant</u>	<u>CHHSL</u>	<u>PEL</u>
Benzene	0.14 $\mu\text{g}/\text{m}^3$	1.0 ppm
Gasoline	N/A	300 ppm

All sample benzene concentrations, including the ambient control, exceeded the CHHSL value by an order of magnitude or greater. With the exception of the interior of the repair facility located at 250 8<sup>th</sup> Street (which disassembles automobile components and has a wide variety of fuels and lubricants present constantly), all measured benzene concentrations were essentially identical to ambient.

Benzene concentrations were elevated in the repair shop compared with ambient values and those obtained in adjacent structures. The nature of operations in the repair shop make it likely that the benzene source is internal, but the data do not rule out significant dose contribution by subsurface vapor intrusion of benzene into this area. Due to the occupational nature of VOC exposures associated with automotive repair, the PEL may be a more applicable standard for this facility.

None of the other locations demonstrated any significant difference between interior and exterior vapor concentrations. It is unlikely that vapor intrusion from subsurface soils is contributing significantly to occupant dose in any of these other evaluated structures.

The amended California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) establishes a lifetime (70-year) daily absorbed dose for benzene of 13 micrograms per day as the threshold at or below which there is no significant risk to human health. ("Significant Risk" is defined as a dose assumed to increase cancer risk in a population by an additional 1 per 100,000 individuals.) Using an exposure model of approximately 20 cubic meters of air inspired daily by an average individual, this dose extrapolates to an average airborne concentration of approximately 0.5 micrograms per cubic meter of air.

The total calculated daily benzene dose resulting from occupancy in these buildings is based upon the dose absorbed from background (outdoor) ambient concentrations for 16 hours plus the dose expected from inhalation of interior air for an average of 8 hours per day. This results in the following calculated absorbed dosages:

### Estimated Dose Values

Location	Micrograms ( $\mu\text{g}$ ) Benzene Absorbed Daily			
	Background	Interior	Total	Prop.65 NSR*
Chong Long Market	24 $\mu\text{g}$	14.7 $\mu\text{g}$	38.7 $\mu\text{g}$	13 micrograms
Presb. Church - Hall	24 $\mu\text{g}$	10 $\mu\text{g}$	34 $\mu\text{g}$	13 micrograms
Presb. Church- Sanctuary	24 $\mu\text{g}$	11.3 $\mu\text{g}$	35.3 $\mu\text{g}$	13 micrograms
Bapt. Church - Sanctuary	24 $\mu\text{g}$	10.7 $\mu\text{g}$	35.1 $\mu\text{g}$	13 micrograms
Bapt. Church - Hall	24 $\mu\text{g}$	10 $\mu\text{g}$	34 $\mu\text{g}$	13 micrograms
Auto Shop Office	24 $\mu\text{g}$	46.7 $\mu\text{g}$	70.7 $\mu\text{g}$	13 micrograms
Photo Shop	24 $\mu\text{g}$	10 $\mu\text{g}$	34 $\mu\text{g}$	13 micrograms
Beauty Shop	24 $\mu\text{g}$	10.7 $\mu\text{g}$	24 $\mu\text{g}$	13 micrograms
Outdoors	36 $\mu\text{g}$	-	36 $\mu\text{g}$	13 micrograms

\* No Significant Risk; California Safe Drinking Water and Toxic Enforcement Act of 1986

Again, the relatively high concentration of benzene in ambient air, coupled with the known high variability of background VOC concentrations, results in a significant background contribution to total dose. Only in the repair shop did the dose received inside the building appear to increase overall exposure to benzene significantly. The source of this benzene can not be determined from this study, but the fact that the Tph-gasoline vapor concentration results did not mirror the benzene results would be supportive of the position that the increased benzene concentration in the shop derived from a source other than the gasoline plume being studied.

### References

1. "Application of Risk-Based Screening Levels and Decision Making for Sites with Impacted Soil and Groundwater" (San Francisco Bay Regional Water Quality Control Board, February 2004)
2. Title 8 CCR, Section 5155, Appendix A: Permissible Exposure Limits for Chemical Contaminants
3. "Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties" (California Environmental Protection Agency, January 2005)

**APPENDIX A: FIELD SAMPLING DATA SHEETS**

**Evacuated (Summa) Canister Sampling**

PROJECT: 1027-16 : Lim Property Vapor Intrusion

DATE: 1/30/09 Sampler: Kedin R. Braun, CIH

**Meteorological Conditions:**

Time	Temperature	Barometer	Humidity	Conditions	Wind Speed & Direction
0700	46°F	29.6"	86%	Clear	NW 0-2
1500	57°F	30.35" Hg	62%	50% Cloud	NNW 6-8

Canister Type: 6 L; SIM - Certified Summa

Sample Description: External Control; NW Corner of Lot @ 8th + Harrison  
#9417

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30 Cont		09:08	-22.5" Hg		
<u>Start Time</u>	<u>Start PSI</u>	10:28	-17.5"		
0700	-29"	11:40	-13"		
<u>End Time</u>	<u>End PSI</u>	13:20	-9"		
01/30 @ 1500	-5.5" Hg	14:15	-7"		

Comments: Upwind of study area; heavy vehicle traffic in area.

Sample Description: Room of Chang Jung market  
#34260

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30 CLM		0715	-24"		
<u>Start Date/Time</u>	<u>Start PSI</u>	10:24	-20"		
0730	-29"	11:30	-16"		
<u>End Date/Time</u>	<u>End PSI</u>	12:23	-13.5"		
1/30 @ 1500	-6" Hg	14:21	-9"		

Comments:

## Evacuated Canister Sampling Data

Date: 1/30/08

Page 2 of 3

Sample Description: 1/30. CPL-1. Chinese Presbyterian Church - Hall  
 # 34039

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30. CPL-1		0920	-24"		
Start Time	Start PSI	10:20	-21"		
0920	-24"	11:30	-17"		
End Time	End PSI	13:30	-11.5"		
1/30 @ 15:45	-6"				

Comments: 0 = -6"

Sample Description: Chinese Presbyterian Church - Sanctuary  
 # 24488

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30. CPL-2		0920	-25"		
Start Date/Time	Start PSI	10:20	-21.5"		
0745	-25"	11:20	-17"		
End Date/Time	End PSI	15:16	-7"		
1/30 @ 15:45	-6"				

Comments:

Sample Description: Chinese Baptist Church - Sanctuary  
 # 34033

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30. CPL-1		11:20	4" Hg		
Start Time	Start PSI	10			
0800	-25"				
End Time	End PSI				
1/30 @ 11:20	-4" Hg				

Comments:

Sample Description: Chinese Baptist Church - Social Hall  
 # 33906

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30. CPL-2		11:20	-29" Hg		
Start Date/Time	Start PSI	13:25	-13" Hg		
0800	-25"				
End Date/Time	End PSI				
1/30 @ 14:50	7" Hg				

Comments: 15:50  
0" = -8"

## Evacuated Canister Sampling Data

Date: 1/30/08

Page 3 of 3

Sample Description: #33932 *Anterior of Transmission Shop Office, 200 8th St.*

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30 - 250 8 <sup>th</sup>		10:15	-22.5"		
<u>Start Time</u>	<u>Start PSI</u>	11:30	-17.5"		
0810	-27" Hg	13:33	-12.5"		
<u>End Time</u>	<u>End PSI</u>				
1/30 @ 16:10	5" Hg				

Comments:

Sample Description: #11880 *1/30 - 249 - Rear of Photo Shop*

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30 - 249 8 <sup>th</sup>		10:20	-27" Hg		
<u>Start Date/Time</u>	<u>Start PSI</u>	11:15	-22.5"		
0900	-29" Hg	12:25	-19"		
<u>End Date/Time</u>	<u>End PSI</u>	14:10	-11"		
1/30 @ 16:33	-6.5" Hg				

Comments:

*0" - -2"*

Sample Description:

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
<u>Start Time</u>	<u>Start PSI</u>				
<u>End Time</u>	<u>End PSI</u>				

Comments:

Sample Description: #9402 *1/30 - 253; Rear of Beauty Shop*

Sample Designation:		Date/Time:	Pressure:	Date/Time:	Pressure:
1/30 - 253 8 <sup>th</sup>		10:20	-26"		
<u>Start Date/Time</u>	<u>Start PSI</u>	11:30	-21"		
0902	-29" Hg	12:30	-18"		
<u>End Date/Time</u>	<u>End PSI</u>	14:20	-12"		
1/30 @ 16:45	-5.5" Hg				

Comments:



**APPENDIX B: LABORATORY ANALYTICAL REPORTS**



**CHAIN-OF-CUSTODY RECORD**

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 487-4922

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager Kevin Braun

Collected by: (Print and Sign)

Company Earth Safety Dynamics Email KRBraun1@aol.com

Address 70 Rockrose St. City Livermore State CA Zip 94551

Phone (925) 485-6601 Fax (925) 485-6534

<b>Project Info:</b>	<b>Turn Around Time:</b>	<b>Lab Use Only:</b>
P.O. # _____	<input checked="" type="checkbox"/> Normal	Pressurized by: _____
Project # _____	<input type="checkbox"/> Rush	Date: _____
Project Name <u>ASE Lim Property</u>	specify _____	Pressurization Gas: _____
		N <sub>2</sub> He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	430. Cont	9417	1/2/08	15:05:44	Benzene; TPH (g)				
02A	1/30. CCM	34260		15:05:44					
03A	430. CPC - 1	34007		15:05:44					
04A	430. CPC - 2	24488		15:05:44					
05A	1/30. CBL - 1	34033		11:20					
06A	1/30. CBL - 2	33906		15:10					
07A	1/30. 250 8H	33932		16:10					
08A	1/30. 249 8H	11880		16:35					
09A	430. 253 8H	9402		16:45					
10A	430. Field Blank								

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>1/3/08 @ 14:00</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>1/2/08 9:15</u>	<b>Notes:</b>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

<b>Lab Use Only</b>	Shipper Name <u>UPS</u>	Air Bill # <u>120ER3020302642921</u>	Temp (°C) <u>NA</u>	Condition <u>Good</u>	Custody Seal Intact? <u>Yes No None</u>	Work Order # <u>0802018</u>
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## **Air Toxics Ltd. Introduces the Electronic Report**

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

**180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630**

**(916) 985-1000 .FAX (916) 985-1020  
Hours 8:00 A.M to 6:00 P.M. Pacific**



AN ENVIRONMENTAL ANALYTICAL LABORATORY

**WORK ORDER #: 0802012B**

Work Order Summary

**CLIENT:** Mr. Kevin Braun  
Earth Safety Dynamics  
70 Rock Rose St.  
Livermore, CA 94551

**BILL TO:** Mr. Kevin Braun  
Earth Safety Dynamics  
70 Rock Rose St.  
Livermore, CA 94551

**PHONE:** 925-455-6601

**P.O. #**

**FAX:** 925-455-6634

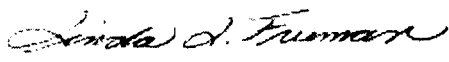
**PROJECT #** ASE Lim Property

**DATE RECEIVED:** 02/01/2008

**CONTACT:** Kelly Buettner

**DATE COMPLETED:** 02/15/2008

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	1/30.Cont	Modified TO-3	5.0 "Hg	5 psi
02A	1/30.C2M	Modified TO-3	5.0 "Hg	5 psi
03A	1/30.CPC-1	Modified TO-3	7.0 "Hg	5 psi
03AA	1/30.CPC-1 Lab Duplicate	Modified TO-3	7.0 "Hg	5 psi
04A	1/30.CPC-2	Modified TO-3	6.0 "Hg	5 psi
05A	1/30.CBC-1	Modified TO-3	0.8 psi	5 psi
06A	1/30.CBC-2	Modified TO-3	6.0 "Hg	5 psi
07A	1/30.250 8th	Modified TO-3	4.0 "Hg	5 psi
08A	1/30.249 8th	Modified TO-3	5.0 "Hg	5 psi
09A	1/30.253 8th	Modified TO-3	3.5 "Hg	5 psi
10A	1/30. Field Blank	Modified TO-3	27.0 "Hg	5 psi
11A	Lab Blank	Modified TO-3	NA	NA
12A	LCS	Modified TO-3	NA	NA

CERTIFIED BY: 

DATE: 02/15/08

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE  
Modified TO-3  
Earth Safety Dynamics  
Workorder# 0802012B**

Ten 6 Liter Summa Canister (SIM Certified) samples were received on February 01, 2008. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. The TPH (Gasoline Range) results are calculated using the response factor of Gasoline. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-3</i>	<i>ATL Modifications</i>
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch <=/= 20 samples
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation $DL = A + 3.3S$ , where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

**Receiving Notes**

Sample identification for sample 1/30.C2M was not provided on the sample tag. Therefore the information on the Chain of Custody was used to process and report the sample.

**Analytical Notes**

The field blank sample 1/30. Field Blank has reportable levels of target compounds present.

**Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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### Summary of Detected Compounds MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: 1/30.Cont

Lab ID#: 0802012B-01A

No Detections Were Found.

Client Sample ID: 1/30.C2M

Lab ID#: 0802012B-02A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.040	0.16	0.045	0.18

Client Sample ID: 1/30.CPC-1

Lab ID#: 0802012B-03A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.044	0.18	0.20	0.82

Client Sample ID: 1/30.CPC-1 Lab Duplicate

Lab ID#: 0802012B-03AA

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.044	0.18	0.20	0.83

Client Sample ID: 1/30.CPC-2

Lab ID#: 0802012B-04A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.042	0.17	0.18	0.74

Client Sample ID: 1/30.CBC-1

Lab ID#: 0802012B-05A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.032	0.13	0.043	0.18

Client Sample ID: 1/30.CBC-2

Lab ID#: 0802012B-06A



AN ENVIRONMENTAL ANALYTICAL LABORATORY

### Summary of Detected Compounds MODIFIED EPA METHOD TO-3 GC/FID

Client Sample ID: 1/30.CBC-2

Lab ID#: 0802012B-06A

No Detections Were Found.

Client Sample ID: 1/30.250 8th

Lab ID#: 0802012B-07A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.039	0.16	0.22	0.91

Client Sample ID: 1/30.249 8th

Lab ID#: 0802012B-08A

No Detections Were Found.

Client Sample ID: 1/30.253 8th

Lab ID#: 0802012B-09A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.038	0.16	0.23	0.94

Client Sample ID: 1/30. Field Blank

Lab ID#: 0802012B-10A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
TPH (Gasoline Range)	0.025	0.10	0.040	0.16





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.Cont

Lab ID#: 0802012B-01A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020508</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b> 2/5/08 01:29 PM

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.040	0.16	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	82	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.C2M

Lab ID#: 0802012B-02A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020509</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b>	<b>2/5/08 04:24 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.040	0.16	0.045	0.18

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CPC-1

Lab ID#: 0802012B-03A

**MODIFIED EPA METHOD TO-3 GC/FID**

<b>File Name:</b>	<b>6020510</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.75</b>	<b>Date of Analysis:</b> 2/5/08 04:54 PM

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.044	0.18	0.20	0.82

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	85	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CPC-1 Lab Duplicate

Lab ID#: 0802012B-03AA

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020512</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.75</b>	<b>Date of Analysis:</b> 2/5/08 05:55 PM

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.044	0.18	0.20	0.83

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	85	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CPC-2

Lab ID#: 0802012B-04A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020511</b>	<b>Date of Collection:</b>	<b>1/30/08</b>	
<b>Dil. Factor:</b>	<b>1.68</b>	<b>Date of Analysis:</b>	<b>2/5/08 05:24 PM</b>	

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.042	0.17	0.18	0.74

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CBC-1

Lab ID#: 0802012B-05A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020513</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.27</b>	<b>Date of Analysis:</b>	<b>2/5/08 06:27 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.032	0.13	0.043	0.18

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CBC-2

Lab ID#: 0802012B-06A

**MODIFIED EPA METHOD TO-3 GC/FID**

<b>File Name:</b>	<b>6020514</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.68</b>	<b>Date of Analysis:</b> 2/5/08 06:57 PM

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.042	0.17	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	83	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.250 8th

Lab ID#: 0802012B-07A

**MODIFIED EPA METHOD TO-3 GC/FID**

<b>File Name:</b>	<b>6020515</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.55</b>	<b>Date of Analysis:</b>	<b>2/5/08 07:27 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.039	0.16	0.22	0.91

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	86	75-150





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.249 8th

Lab ID#: 0802012B-08A

**MODIFIED EPA METHOD TO-3 GC/FID**

<b>File Name:</b>	<b>6020516</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b>	<b>2/5/08 07:57 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.040	0.16	Not Detected	Not Detected

**Container Type: 6 Liter Summa Canister (SIM Certified)**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.253 8th

Lab ID#: 0802012B-09A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020517</b>	<b>Date of Collection:</b>	<b>1/30/08</b>	
<b>Dil. Factor:</b>	<b>1.52</b>	<b>Date of Analysis:</b>	<b>2/5/08 08:27 PM</b>	

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.038	0.16	0.23	0.94

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30. Field Blank

Lab ID#: 0802012B-10A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020518</b>	<b>Date of Collection:</b>	<b>1/30/08</b>	
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b>	<b>2/5/08 08:57 PM</b>	

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.025	0.10	0.040	0.16

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	85	75-150



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Client Sample ID: Lab Blank

Lab ID#: 0802012B-11A

**MODIFIED EPA METHOD TO-3 GC/FID**

<b>File Name:</b>	<b>6020504</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 2/5/08 02:33 AM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	84	75-150



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Client Sample ID: LCS

Lab ID#: 0802012B-12A

MODIFIED EPA METHOD TO-3 GC/FID

<b>File Name:</b>	<b>6020519</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 2/5/08 09:28 PM</b>

<b>Compound</b>	<b>%Recovery</b>
TPH (Gasoline Range)	90

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	115	75-150



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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

**180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630**

**(916) 985-1000 .FAX (916) 985-1020  
Hours 8:00 A.M to 6:00 P.M. Pacific**



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**WORK ORDER #: 0802012A**

Work Order Summary

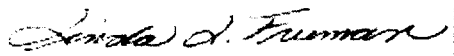
**CLIENT:** Mr. Kevin Braun  
Earth Safety Dynamics  
70 Rock Rose St.  
Livermore, CA 94551

**BILL TO:** Mr. Kevin Braun  
Earth Safety Dynamics  
70 Rock Rose St.  
Livermore, CA 94551

**PHONE:** 925-455-6601  
**FAX:** 925-455-6634  
**DATE RECEIVED:** 02/01/2008  
**DATE COMPLETED:** 02/14/2008

**P.O. #**  
**PROJECT #** ASE Lim Property  
**CONTACT:** Kelly Buettner

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	1/30.Cont	Modified TO-15 SIM	5.0 "Hg	5 psi
02A	1/30.C2M	Modified TO-15 SIM	5.0 "Hg	5 psi
03A	1/30.CPC-1	Modified TO-15 SIM	7.0 "Hg	5 psi
04A	1/30.CPC-2	Modified TO-15 SIM	6.0 "Hg	5 psi
05A	1/30.CBC-1	Modified TO-15 SIM	0.8 psi	5 psi
06A	1/30.CBC-2	Modified TO-15 SIM	6.0 "Hg	5 psi
07A	1/30.250 8th	Modified TO-15 SIM	4.0 "Hg	5 psi
08A	1/30.249 8th	Modified TO-15 SIM	5.0 "Hg	5 psi
09A	1/30.253 8th	Modified TO-15 SIM	3.5 "Hg	5 psi
09AA	1/30.253 8th Lab Duplicate	Modified TO-15 SIM	3.5 "Hg	5 psi
10A	1/30. Field Blank	Modified TO-15 SIM	27.0 "Hg	5 psi
11A	Lab Blank	Modified TO-15 SIM	NA	NA
12A	CCV	Modified TO-15 SIM	NA	NA
13A	LCS	Modified TO-15 SIM	NA	NA

CERTIFIED BY:   
Laboratory Director

DATE: 02/14/08

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08  
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**  
**Modified TO-15 SIM**  
**Earth Safety Dynamics**  
**Workorder# 0802012A**



Ten 6 Liter Summa Canister (SIM Certified) samples were received on February 01, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	<=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is <=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+/- 30% Difference	Project specific; default criteria is <= 30% Difference with 10% of compounds allowed out up to <=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

**Receiving Notes**

Sample identification for sample 1/30.C2M was not provided on the sample tag. Therefore the information on the Chain of Custody was used to process and report the sample.

**Analytical Notes**

There were no analytical discrepancies.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.





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- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue



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### Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: 1/30.Cont

Lab ID#: 0802012A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.080	0.58	0.26	1.8

Client Sample ID: 1/30.C2M

Lab ID#: 0802012A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.080	0.69	0.26	2.2

Client Sample ID: 1/30.CPC-1

Lab ID#: 0802012A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.088	0.47	0.28	1.5

Client Sample ID: 1/30.CPC-2

Lab ID#: 0802012A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.084	0.52	0.27	1.7

Client Sample ID: 1/30.CBC-1

Lab ID#: 0802012A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.064	0.52	0.20	1.6

Client Sample ID: 1/30.CBC-2

Lab ID#: 0802012A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.084	0.48	0.27	1.5



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### Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: 1/30.250 8th

Lab ID#: 0802012A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.078	2.2	0.25	7.0

Client Sample ID: 1/30.249 8th

Lab ID#: 0802012A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.080	0.46	0.26	1.5

Client Sample ID: 1/30.253 8th

Lab ID#: 0802012A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.076	0.50	0.24	1.6

Client Sample ID: 1/30.253 8th Lab Duplicate

Lab ID#: 0802012A-09AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.076	0.50	0.24	1.6

Client Sample ID: 1/30. Field Blank

Lab ID#: 0802012A-10A

No Detections Were Found.



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Client Sample ID: 1/30.Cont

Lab ID#: 0802012A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021006</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b> 2/10/08 01:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.080	0.58	0.26	1.8

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130



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Client Sample ID: 1/30.C2M

Lab ID#: 0802012A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021007</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b> 2/10/08 02:23 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.080	0.69	0.26	2.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CPC-1

Lab ID#: 0802012A-03A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021008</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.75</b>	<b>Date of Analysis:</b>	<b>2/10/08 03:04 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.088	0.47	0.28	1.5

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CPC-2

Lab ID#: 0802012A-04A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021009</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.68</b>	<b>Date of Analysis:</b>	<b>2/10/08 03:44 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.084	0.52	0.27	1.7

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CBC-1

Lab ID#: 0802012A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021010</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.27</b>	<b>Date of Analysis:</b>	<b>2/10/08 04:32 PM</b>

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.064	0.52	0.20	1.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.CBC-2

Lab ID#: 0802012A-06A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021011</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.68</b>	<b>Date of Analysis:</b> 2/10/08 05:13 PM

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.084	0.48	0.27	1.5

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.250 8th

Lab ID#: 0802012A-07A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021012</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.55</b>	<b>Date of Analysis:</b>	<b>2/10/08 05:52 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.078	2.2	0.25	7.0

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.249 8th

Lab ID#: 0802012A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021013</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.61</b>	<b>Date of Analysis:</b> 2/10/08 06:33 PM

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.080	0.46	0.26	1.5

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	97	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.253 8th

Lab ID#: 0802012A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021014</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.52</b>	<b>Date of Analysis:</b>	<b>2/10/08 07:50 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.076	0.50	0.24	1.6

Container Type: 6 Liter Summa Canister (SIM Certified)

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	105	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30.253 8th Lab Duplicate

Lab ID#: 0802012A-09AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021015</b>	<b>Date of Collection:</b>	<b>1/30/08</b>
<b>Dil. Factor:</b>	<b>1.52</b>	<b>Date of Analysis:</b>	<b>2/10/08 08:28 PM</b>

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.076	0.50	0.24	1.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	103	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: 1/30. Field Blank

Lab ID#: 0802012A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021016</b>	<b>Date of Collection:</b> 1/30/08
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 2/10/08 09:10 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
Benzene	0.050	Not Detected	0.16	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	100	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0802012A-11A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021005</b>	<b>Date of Collection:</b>	<b>NA</b>	
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b>	<b>2/10/08 12:22 PM</b>	

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (uG/m3)</b>	<b>Amount (uG/m3)</b>
Benzene	0.050	Not Detected	0.16	Not Detected

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	93	70-130



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: CCV

Lab ID#: 0802012A-12A

**MODIFIED EPA METHOD TO-15 GC/MS SIM**

<b>File Name:</b>	<b>a021002</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 2/10/08 09:03 AM

<b>Compound</b>	<b>%Recovery</b>
Benzene	104

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130





AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0802012A-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM

<b>File Name:</b>	<b>a021003</b>	<b>Date of Collection:</b> NA
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 2/10/08 10:15 AM

<b>Compound</b>	<b>%Recovery</b>
Benzene	104

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	101	70-130



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX C**

### Drilling 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: 01/16/2008 By jamesy

Permit Numbers: W2008-0017  
Permits Valid from 01/24/2008 to 02/10/2008

Application Id: 1200009143738  
Site Location: 817 Alice Street  
Project Start Date: 01/24/2008

City of Project Site:Oakland

Completion Date:02/10/2008

Applicant: Aqua Science Engineers - Robert Kitay  
55 Oak Court, Suite 220, Danville, CA 94526  
Property Owner: Tom Aswad  
P.O. Box 31114, Walnut, Creek, CA 94598  
Client: Alice Lim  
3111 Diablo Road, Lafayette, CA 94549

Phone: 925-820-9391

Phone: --

Phone: --

Receipt Number: WR2008-0014 Total Due: \$200.00  
Payer Name : Aqua Science Engineers Total Amount Paid: \$200.00  
Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 6 Boreholes  
Driller: WDC Exploration & Wells - Lic #: 283326 - Method: DP

Work Total: \$200.00

### Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2008-0017	01/16/2008	04/23/2008	6	2.00 in.	30.00 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 Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or

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

waterways or be allowed to move off the property where work is being completed.

6. 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.

7. 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.

---

# 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: 01/16/2008 By jamesy**

**Permit Numbers: W2008-0016**  
**Permits Valid from 01/28/2008 to 02/01/2008**

**Application Id:** 1200008373549  
**Site Location:** 250 8th Street  
**Project Start Date:** 01/23/2008  
**Extension Start Date:** 01/28/2008  
**Extension Count:** 1

**City of Project Site:**Oakland  
**Completion Date:**02/01/2008  
**Extension End Date:** 02/01/2008  
**Extended By:** vickyh1

**Applicant:** Aqua Science Engineers - Robert Kitay  
55 Oak Court, Suite 220, Danville, CA 94526  
**Property Owner:** Alice Lim  
3111 Diablo Road, Lafayette, CA 94549  
**Client:** \*\* same as Property Owner \*\*

**Phone:** 925-820-9391

**Phone:** --

**Receipt Number: WR2008-0013** **Total Due:** \$300.00  
**Payer Name : Aqua Science Engineers** **Total Amount Paid:** \$300.00  
Paid By: VISA **PAID IN FULL**

## Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 1 Wells  
Driller: WDC Exploration & Wells - Lic #: 283326 - Method: hstem

**Work Total: \$300.00**

## Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2008-0016	01/16/2008	04/22/2008	MW-8	8.00 in.	2.00 in.	40.00 ft	50.00 ft

## Specific Work Permit Conditions

1. 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.
2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.
4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and

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

mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.
  6. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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.
  7. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
  8. Minimum surface seal thickness is two inches of cement grout placed by tremie
  9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
  10. 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.
-



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## **APPENDIX D**

### **Boring Logs and Well Construction Details**

**SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS**

BORING: MW-8

Project Name: Lim

Project Location: 250 8th Street, Oakland, CA

Page 1 of 2

Driller: WDC Exploration

Type of Rig: Hollow-Stem Auger

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, P.G.

Date Drilled: March 1, 2008

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: 49'

Depth of Water First Encountered: 16'

Well Screen Type and Diameter: 2" Diameter Sch 40 PVC

Static Depth of Water in Well: 22'

Well Screen Slot Size: 0.010"

Total Depth of Boring: 60'

Type and Size of Soil Sampler: 24" Split-Barrel

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	PID (ppmv)	Water Level	Graphic Log		
0								Asphalt	
0								Hand Auger to 5'	
5								pea-gravel (GP); dark brown; loose; damp; slight odor	
10								wet; slight odor at 18'	
15									
20								Silty SAND (SM); gray; medium dense; wet; 70% sand, 30% silt; non-plastic; high estimated K; strong hydrocarbon odor	
25								SAND (SP); gray; loose; wet; 100% fine sand; non-plastic; high estimated K; strong hydrocarbon odor	
25								brown; damp at 26'	
30								gray; loose; wet at 30'	



**SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS**

BORING: MW-8

Project Name: Lim

Project Location: 250 8 th Street, Oakland, CA

Page 2 of 2

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	PID (ppmv)	Water Level		Graphic Log
35								brown; stiff at 31'
40								Silty CLAY (CH); brown; very stiff; damp; 70% clay, 30% silt; high plasticity; low estimated K; no odor light brown; hard at 34' no recovery 35' - 40'
45								Sandy SILT (ML); grey; stiff; wet; 50% silt; 30% fine to coarse sand; 20% clay; low plasticity; low estimated K; no odor
50								Silty SAND (SP); brown; stiff; wet; 90% sand; 10% silt; non-plastic; high estimated K; no odor
55								Boring total depth of 49'
60								
65								



**SOIL BORING LOG AND WELL COMPLETION DETAILS**

Soil Boring: SB-8

Project Name: Lim

Project Location: 250 8th Street, Oakland, CA

Page 1 of 1

Driller: WDC Exploration

Type of Rig: Geoprobe

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, P.G.

Date Drilled: February 8, 2008

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: NA

Depth of Water First Encountered: 17'




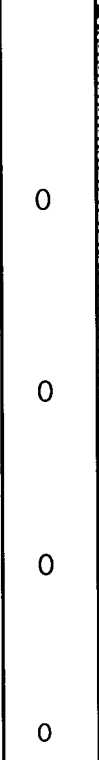

Well Screen Type and Diameter: NA

Static Depth of Water in Well: Unknown

Well Screen Slot Size: NA

Total Depth of Boring: 20'

Type and Size of Soil Sampler: Macro Core Sampler

Depth in Feet	WELL \ BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY	
			Interval	Water Level	PID (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.	
0						0	Concrete		
5						0	5	Silty SAND (SM); yellow brown; medium dense; dry; 70% fine to medium sand; 20% silt; 10% clay; low plasticity; medium estimated K; no odor	
10						0	10	90% fine to medium sand; 10% silt below 15'	
15						0	15	wet at 17'	
20						0	20	End of boring at 20'	
25									
30									

**SOIL BORING LOG AND WELL COMPLETION DETAILS**

Soil Boring: SB-9

Project Name: Lim

Project Location: 250 8th Street, Oakland, CA

Page 1 of 1

Driller: WDC Exploration

Type of Rig: Geoprobe

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, P.G.

Date Drilled: February 8, 2008

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Depth of Water First Encountered: 16'

Total Depth of Well Completed: NA

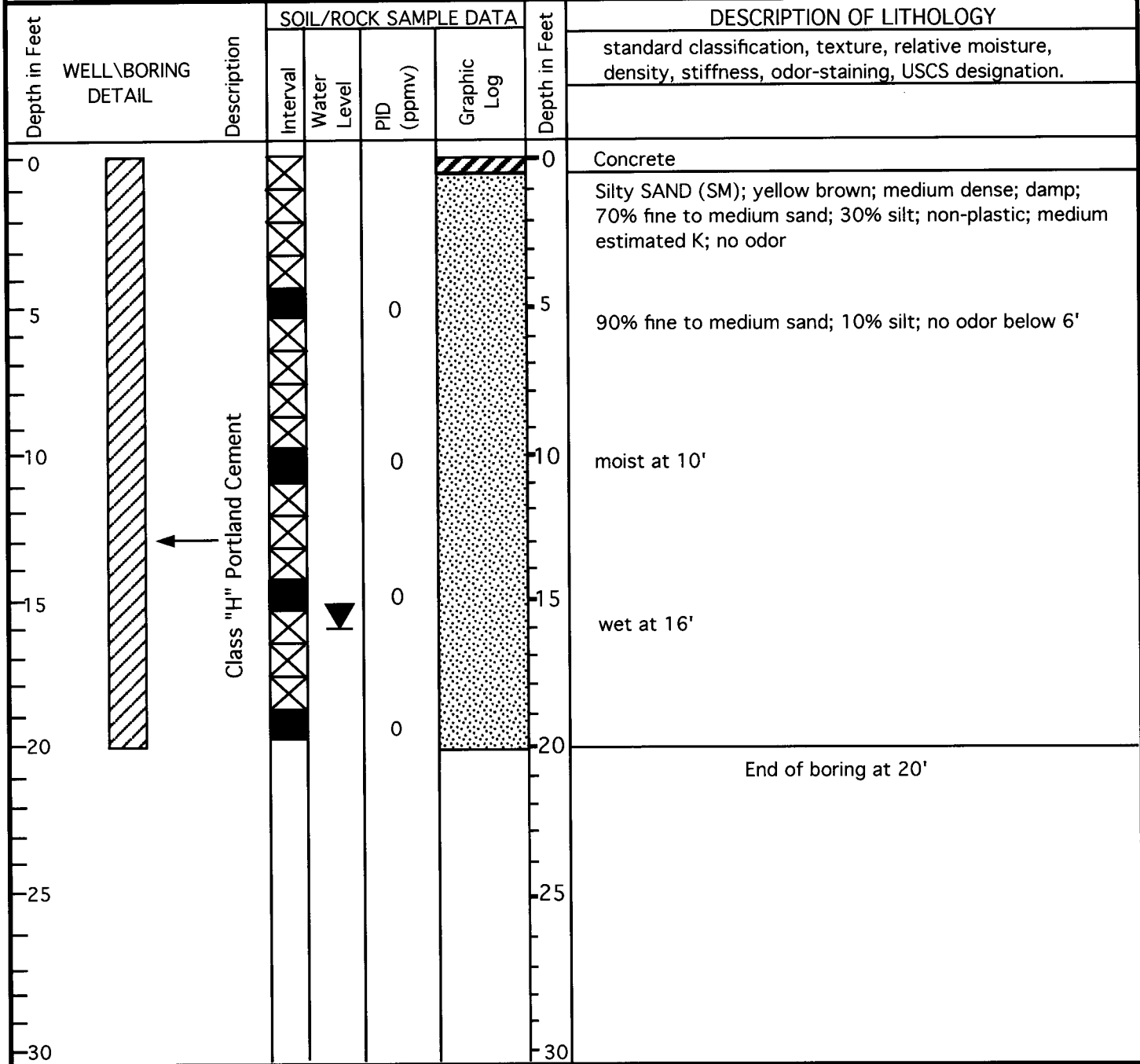
Well Screen Type and Diameter: NA

Static Depth of Water in Well: Unknown

Well Screen Slot Size: NA

Total Depth of Boring: 20'

Type and Size of Soil Sampler: Macro Core Sampler



**SOIL BORING LOG AND WELL COMPLETION DETAILS**

Soil Boring: SB-10

Project Name: Lim

Project Location: 250 8th Street, Oakland, CA

Page 1 of 1

Driller: WDC Exploration

Type of Rig: Geoprobe

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, P.G.

Date Drilled: February 8, 2008

Checked By: Robert E. Kitay, P.G.

**WATER AND WELL DATA**

Total Depth of Well Completed: NA

Depth of Water First Encountered: 16'






Well Screen Type and Diameter: NA

Static Depth of Water in Well: Unknown

Well Screen Slot Size: NA

Total Depth of Boring: 25'

Type and Size of Soil Sampler: Macro Core Sampler

Depth in Feet	WELL \ BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY			
			Interval	Water Level	PID (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.			
0	 <p>Class "H" Portland Cement</p>					0	Concrete				
5						0	90% fine to medium sand; 10% silt; no odor below 6'				
10						0	moist at 14'				
15						0	wet at 16'				
20						0					
25						0	End of boring at 25'				
30											



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## **APPENDIX E**

Analytical Reports  
And Chain of Custody Records  
For Soil and Groundwater Samples From Borings SB-8 through SB-10



Report Number : 61036

Date : 2/20/2008

Robert Kitay  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Subject : 3 Soil Samples and 3 Water Samples  
Project Name : Lim  
Project Number : 2808

Dear Mr. Kitay,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff



Subject : 3 Soil Samples and 3 Water Samples  
Project Name : Lim  
Project Number : 2808

## Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with sample SB-8 14-5' for the analyte TPH as Diesel were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: \_\_\_\_\_

Joel Kiff

Project Name : **Lim**

Project Number : **2808**


Sample : **SB-8 14.5'**

Matrix : Soil

Lab Number : 61036-03

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Toluene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethylbenzene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Total Xylenes</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Diisopropyl ether (DIPE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-amyl methyl ether (TAME)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-Butanol</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>TPH as Gasoline</b>	< <b>1.0</b>	1.0	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dichloroethane</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dibromoethane</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	2/14/2008
4-Bromofluorobenzene (Surr)	98.6		% Recovery	EPA 8260B	2/14/2008
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	2/14/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>1.0</b>	1.0	mg/Kg	M EPA 8015	2/20/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
1-Chlorooctadecane (Silica Gel Surr)	90.3		% Recovery	M EPA 8015	2/20/2008

Approved By:  Joel Kiff



Project Name : **Lim**

Project Number : **2808**

Sample : **SB-9 14.5'**

Matrix : Soil

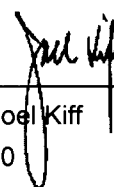
Lab Number : 61036-07

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Toluene</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethylbenzene</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Total Xylenes</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Diisopropyl ether (DIPE)</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-Butanol</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>TPH as Gasoline</b>	< 1.0	1.0	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dichloroethane</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dibromoethane</b>	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	2/14/2008
4-Bromofluorobenzene (Surr)	96.4		% Recovery	EPA 8260B	2/14/2008
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	2/14/2008
<b>TPH as Diesel (Silica Gel)</b>	< 1.0	1.0	mg/Kg	M EPA 8015	2/15/2008
1-Chlorooctadecane (Silica Gel Surr)	74.2		% Recovery	M EPA 8015	2/15/2008

Approved By:

Joel Kiff



Project Name : **Lim**

Project Number : **2808**


Sample : **SB-10 14.5**

Matrix : Soil

Lab Number : 61036-11

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Toluene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethylbenzene</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Total Xylenes</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Diisopropyl ether (DIPE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-amyl methyl ether (TAME)</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>Tert-Butanol</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>TPH as Gasoline</b>	< <b>1.0</b>	1.0	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dichloroethane</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
<b>1,2-Dibromoethane</b>	< <b>0.0050</b>	0.0050	mg/Kg	EPA 8260B	2/14/2008
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	2/14/2008
4-Bromofluorobenzene (Surr)	96.2		% Recovery	EPA 8260B	2/14/2008
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	2/14/2008
<b>TPH as Diesel (Silica Gel)</b>	< <b>1.0</b>	1.0	mg/Kg	M EPA 8015	2/15/2008
1-Chlorooctadecane (Silica Gel Surr)	91.0		% Recovery	M EPA 8015	2/15/2008

Approved By:  Joel Kiff

Project Name : **Lim**

Project Number : **2808**

Sample : **SB-8**

Matrix : Water

Lab Number : 61036-13

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	2/16/2008
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	2/16/2008
<b>1,2-Dichloroethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>1,2-Dibromoethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	2/16/2008
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	2/16/2008
1,2-Dichloroethane-d4 (Surr)	106		% Recovery	EPA 8260B	2/16/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>150</b>	50	ug/L	M EPA 8015	2/15/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Silica Gel Surr)	107		% Recovery	M EPA 8015	2/15/2008

Approved By:

Joel Kiff

Project Name : **Lim**

Project Number : **2808**

Sample : **SB-9**

Matrix : Water

Lab Number : 61036-14

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	2/15/2008
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	2/15/2008
<b>1,2-Dichloroethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
<b>1,2-Dibromoethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	2/15/2008
4-Bromofluorobenzene (Surr)	98.2		% Recovery	EPA 8260B	2/15/2008
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	2/15/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>650</b>	50	ug/L	M EPA 8015	2/15/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Silica Gel Surr)	128		% Recovery	M EPA 8015	2/15/2008

Approved By:

Joel Kiff



Project Name : **Lim**

Project Number : **2808**


Sample : **SB-10**

Matrix : Water

Lab Number : 61036-15

Sample Date :2/8/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	2/16/2008
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	2/16/2008
<b>1,2-Dichloroethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
<b>1,2-Dibromoethane</b>	< 0.50	0.50	ug/L	EPA 8260B	2/16/2008
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	2/16/2008
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	2/16/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	2/16/2008
<b>TPH as Diesel (Silica Gel)</b>	< 50	50	ug/L	M EPA 8015	2/15/2008
Octacosane (Diesel Silica Gel Surr)	109		% Recovery	M EPA 8015	2/15/2008

Approved By:  Joel Kiff

**QC Report : Method Blank Data**

Project Name : **Lim**

Project Number : **2808**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	2/15/2008
1-Chlorooctadecane (Silica Gel Surr)	71.5		%	M EPA 8015	2/15/2008
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	2/16/2008
Octacosane (Diesel Silica Gel Surr)	104		%	M EPA 8015	2/16/2008
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	2/19/2008
1-Chlorooctadecane (Silica Gel Surr)	80.6		%	M EPA 8015	2/19/2008
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	2/14/2008
1,2-Dichloroethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
1,2-Dibromoethane	< 0.0050	0.0050	mg/Kg	EPA 8260B	2/14/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	2/14/2008
4-Bromofluorobenzene (Surr)	99.3		%	EPA 8260B	2/14/2008
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	2/14/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/14/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/14/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/14/2008
Toluene - d8 (Surr)	98.8		%	EPA 8260B	2/14/2008
4-Bromofluorobenzene (Surr)	99.8		%	EPA 8260B	2/14/2008
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	2/14/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/15/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/15/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/15/2008
Toluene - d8 (Surr)	101		%	EPA 8260B	2/15/2008
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	2/15/2008
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	2/15/2008

Approved By:  Joel Kiff

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : Lim

Project Number : 2808

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	61056-06	1.9	20.0	20.0	18.0	17.3	mg/Kg	M EPA 8015	2/15/08	81.9	79.0	3.56	60-140	25
TPH-D (Si Gel)	Blank	<50	1000	1000	877	922	ug/L	M EPA 8015	2/16/08	87.7	92.2	5.01	70-130	25
Benzene	61036-03	<0.0050	0.0398	0.0394	0.0366	0.0366	mg/Kg	EPA 8260B	2/15/08	92.2	93.0	0.865	70-130	25
Toluene	61036-03	<0.0050	0.0398	0.0394	0.0358	0.0356	mg/Kg	EPA 8260B	2/15/08	90.1	90.6	0.477	70-130	25
Tert-Butanol	61036-03	<0.0050	0.199	0.197	0.165	0.164	mg/Kg	EPA 8260B	2/15/08	82.8	83.6	0.891	70-130	25
Methyl-t-Butyl Ether	61036-03	<0.0050	0.0398	0.0394	0.0366	0.0359	mg/Kg	EPA 8260B	2/15/08	91.9	91.3	0.724	70-130	25
Benzene	61020-07	<0.50	39.8	39.6	40.2	40.5	ug/L	EPA 8260B	2/15/08	101	102	1.32	70-130	25
Toluene	61020-07	<0.50	39.8	39.6	39.4	39.7	ug/L	EPA 8260B	2/15/08	99.2	100	1.07	70-130	25
Tert-Butanol	61020-07	<5.0	199	198	196	196	ug/L	EPA 8260B	2/15/08	98.7	99.2	0.495	70-130	25
Methyl-t-Butyl Ether	61020-07	<0.50	39.8	39.6	38.0	37.4	ug/L	EPA 8260B	2/15/08	95.6	94.4	1.31	70-130	25
Benzene	61029-01	<0.50	40.0	40.0	41.0	38.2	ug/L	EPA 8260B	2/15/08	102	95.5	7.09	70-130	25
Toluene	61029-01	<0.50	40.0	40.0	41.2	38.1	ug/L	EPA 8260B	2/15/08	103	95.2	7.95	70-130	25
Tert-Butanol	61029-01	<5.0	200	200	205	200	ug/L	EPA 8260B	2/15/08	102	99.9	2.49	70-130	25
Methyl-t-Butyl Ether	61029-01	<0.50	40.0	40.0	44.5	41.6	ug/L	EPA 8260B	2/15/08	111	104	6.76	70-130	25
TPH-D (Si Gel)	61101-02	260	20.0	20.0	416	533	mg/Kg	M EPA 8015	2/19/08	148	190	24.5	60-140	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

**QC Report : Laboratory Control Sample (LCS)**Project Name : **Lim**Project Number : **2808**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH-D (Si Gel)	20.0	mg/Kg	M EPA 8015	2/15/08	80.0	70-130
Benzene	0.0388	mg/Kg	EPA 8260B	2/14/08	90.7	70-130
Toluene	0.0388	mg/Kg	EPA 8260B	2/14/08	88.8	70-130
Tert-Butanol	0.194	mg/Kg	EPA 8260B	2/14/08	80.8	70-130
Methyl-t-Butyl Ether	0.0388	mg/Kg	EPA 8260B	2/14/08	88.5	70-130
Benzene	40.0	ug/L	EPA 8260B	2/14/08	102	70-130
Toluene	40.0	ug/L	EPA 8260B	2/14/08	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/14/08	95.9	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/14/08	94.9	70-130
Benzene	40.0	ug/L	EPA 8260B	2/15/08	103	70-130
Toluene	40.0	ug/L	EPA 8260B	2/15/08	107	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/15/08	103	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/15/08	113	70-130
TPH-D (Si Gel)	20.0	mg/Kg	M EPA 8015	2/19/08	79.7	70-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Approved By:


  
 Joel Kiff



Aqua Science Engineers, Inc.  
 208 W. El Pintado Road  
 Danville, CA 94526  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody e1036

SAMPLER (SIGNATURE)

*R. E. Klay*

PROJECT NAME Lim

PAGE 1 OF 2

ADDRESS 250 8th Street, Oakland, CA

JOB NO. 2808

## ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

- TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)
- TPH-DIESEL (EPA 3510/8015) *1/31/08 cleaning*
- TPH-DIESEL & MOTOR OIL (EPA 3510/8015)
- VOLATILE ORGANICS (EPA 624/8240/8260)
- SEMI-VOLATILE ORGANICS (EPA 625/8270)
- OIL & GREASE (EPA 5520)
- LUFT METALS (S) (EPA 6010+7000)
- CAM 17 METALS (EPA 6010+7000)
- PCBs & PESTICIDES (EPA 608/8080)
- ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)
- FUEL OXYGENATES (EPA 8260)
- Pb (TOTAL or DISSOLVED) (EPA 6010)
- PURGEABLE HALO-CARBONS (EPA 6010/8010)
- MULTI-RANGE HYDROCARBONS
- HOLD
- TPH-GTEX / 5030 / Pb scan (EPA 8260)
- EDF

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (S) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALO-CARBONS (EPA 6010/8010)	MULTI-RANGE HYDROCARBONS	HOLD	TPH-GTEX / 5030 / Pb scan (EPA 8260)	EDF	
SB-8 4-5'	2-8-08	10:10	S	1																		
SB-8 9-5'	2-8-08	10:13																		X		
SB-8 14-5'	2-8-08	10:26				X														X		
SB-8 19-5'	2-8-08	10:32																			X	X
SB-9 4-5'	2-8-08	12:57																		X		
SB-9 9-5'	2-8-08	13:06																		X		
SB-9 14-5'	2-8-08	13:06				X														Y		
SB-9 19-5'	2-8-08	13:12																			X	X
SB-10 4-5'	2-8-08	12:18																		X		
SB-10 9-5'	2-8-08	12:21																		X		
SB-10 14-5'	2-8-08	12:24				X														X		X

RELINQUISHED BY:  
*R. E. Klay*  
 (signature) (time)  
 M. Rausser  
 Robert Klay  
 (printed name) (date)  
 Company: AGE, INC.

RECEIVED BY:  
 (signature) (time)  
 (printed name) (date)  
 Company:

RELINQUISHED BY:  
 (signature) (time)  
 (printed name) (date)  
 Company:

RECEIVED BY LABORATORY:  
*Paul Hobbs* 1330  
 (signature) (time)  
 Paul Hobbs 021208  
 (printed name) (date)  
 Company: *Sci Analytical*

COMMENTS: SAMPLE RECEIPT  
 Temp °C 1.5 Therm ID# IR1  
 Initial PMH Date 021208  
 Time 1510 Coolant present: Yes / No  
 TURN AROUND TIME  
 STANDARD 24Hr 48Hr 72Hr  
 OTHER:

Aqua Science Engineers, Inc.  
 208 W. El Pintado Road  
 Danville, CA 94526  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody 61036

SAMPLER (SIGNATURE)

*Rud E. Kiley*

PROJECT NAME Lim

PAGE 2 OF 2

ADDRESS 250 8th Street, Oakland, CA

JOB NO. 2808

## ANALYSIS REQUEST

SPECIAL INSTRUCTIONS

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5050/8015-6020)	TPH-DIESEL w/Silica (EPA 3510/8015) <i>Gas</i>	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 825/8270)	OIL & GREASE (EPA 5520)	LUST METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)	MULTI-RANGE HYDROCARBONS	OTHER						
																			EDF	EDF					
SB-10	19-5'	2-8-08	12:32	S	1															X	HOLD	TPH-GAS/BTEX/5 org/ Pb gas (EPA 8260)			
SB-8		2-8-08	1100	W	5	X																			
SB-9		2-8-08	1345	W	5	X																		X	X
SB-10		2-8-08	12:50	W	5	X																		X	X

RELINQUISHED BY:

*Rud E. Kiley*  
 (signature) (time)

*M. Bauer*  
*Robert Kiley*  
 (printed name) (date)

Company-ASE, INC.

RECEIVED BY:

(signature) (time)

(printed name) (date)

Company-

RELINQUISHED BY:

(signature) (time)

(printed name) (date)

Company-

RECEIVED BY LABORATORY:

*Paul Hobbs* 1130  
 (signature) (time)

*Paul Hobbs* 021208  
 (printed name) (date)

Company-  
*RSF analytical*

COMMENT: SAMPLE RECEIPT

Therm. ID# IR1  
 Date 021208  
 Coolant present? Yes No

TURN AROUND TIME

STANDARD 24Hr 48Hr 72Hr

OTHER:



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX F**

Analytical Reports  
And Chain of Custody Records  
For Groundwater Samples From Monitoring Wells



Report Number : 61282

Date : 3/5/2008

Robert Kitay  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Subject : 7 Water Samples  
Project Name : Lim  
Project Number : 2808

Dear Mr. Kitay,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Dahl".

Jeff Dahl



Report Number : 61282

Date : 3/5/2008

Subject : 7 Water Samples  
Project Name : Lim  
Project Number : 2808

## Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with sample MW-4 for the analyte Benzene were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: 

Jeff Dahl

Project Name : **Lim**

Project Number : **2808**

Sample : **MW-1**

Matrix : Water

Lab Number : 61282-01

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Diisopropyl ether (DIPE)</b>	1.1	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	3/1/2008
<b>TPH as Gasoline</b>	93	50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dichloroethane</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dibromoethane</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	3/1/2008
<b>TPH as Diesel (Silica Gel)</b>	< 50	50	ug/L	M EPA 8015	3/4/2008
Octacosane (Diesel Silica Gel Surr)	93.5		% Recovery	M EPA 8015	3/4/2008

Approved By:

Jeff Dahl



Project Name : **Lim**

Project Number : **2808**

Sample : **MW-2**

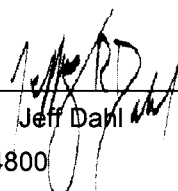
Matrix : Water

Lab Number : 61282-02

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>8200</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Toluene</b>	<b>940</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Ethylbenzene</b>	<b>1400</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Total Xylenes</b>	<b>3700</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
<b>Tert-Butanol</b>	<b>&lt; 70</b>	70	ug/L	EPA 8260B	2/29/2008
<b>TPH as Gasoline</b>	<b>43000</b>	1500	ug/L	EPA 8260B	2/29/2008
<b>1,2-Dichloroethane</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
<b>1,2-Dibromoethane</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	2/29/2008
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	2/29/2008
4-Bromofluorobenzene (Surr)	96.8		% Recovery	EPA 8260B	2/29/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	2/29/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 4000</b>	4000	ug/L	M EPA 8015	3/4/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	105		% Recovery	M EPA 8015	3/4/2008

Approved By:



Project Name : **Lim**

Project Number : **2808**

Sample : **MW-4**

Matrix : Water

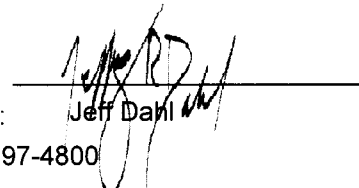
Lab Number : 61282-03

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>3700</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Toluene</b>	<b>2300</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Ethylbenzene</b>	<b>2300</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Total Xylenes</b>	<b>8900</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
<b>Tert-Butanol</b>	<b>90</b>	70	ug/L	EPA 8260B	3/3/2008
<b>TPH as Gasoline</b>	<b>42000</b>	1500	ug/L	EPA 8260B	3/3/2008
<b>1,2-Dichloroethane</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
<b>1,2-Dibromoethane</b>	<b>&lt; 15</b>	15	ug/L	EPA 8260B	3/3/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	3/3/2008
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/3/2008
1,2-Dichloroethane-d4 (Surr)	99.5		% Recovery	EPA 8260B	3/3/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 2000</b>	2000	ug/L	M EPA 8015	3/4/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	110		% Recovery	M EPA 8015	3/4/2008

Approved By:

Jeff Dahl





Project Name : **Lim**

Project Number : **2808**

Sample : **MW-5**

Matrix : Water

Lab Number : 61282-04

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>32</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Toluene</b>	<b>1.3</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethylbenzene</b>	<b>0.62</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Total Xylenes</b>	<b>0.92</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Methyl-t-butyl ether (MTBE)</b>	<b>3.4</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Diisopropyl ether (DIPE)</b>	<b>5.6</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-Butanol</b>	<b>7.7</b>	5.0	ug/L	EPA 8260B	3/1/2008
<b>TPH as Gasoline</b>	<b>260</b>	50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dichloroethane</b>	<b>0.60</b>	0.50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dibromoethane</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	3/1/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 50</b>	50	ug/L	M EPA 8015	3/4/2008
Octacosane (Diesel Silica Gel Surr)	97.8		% Recovery	M EPA 8015	3/4/2008

Approved By:

Jeff Dahl



Project Name : **Lim**

Project Number : **2808**

Sample : **MW-6**

Matrix : Water

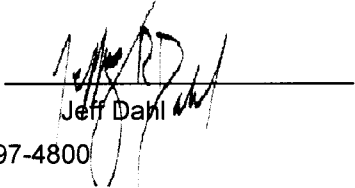
Lab Number : 61282-05

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	3/1/2008
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dichloroethane</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dibromoethane</b>	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	3/1/2008
<b>TPH as Diesel (Silica Gel)</b>	< 50	50	ug/L	M EPA 8015	3/5/2008
Octacosane (Diesel Silica Gel Surr)	108		% Recovery	M EPA 8015	3/5/2008

Approved By:

Jeff Dahl



Project Name : **Lim**

Project Number : **2808**

Sample : **MW-7**

Matrix : Water

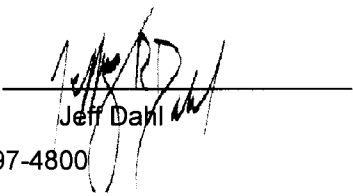
Lab Number : 61282-06

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>190</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Toluene</b>	<b>1000</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Ethylbenzene</b>	<b>740</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Total Xylenes</b>	<b>3000</b>	4.0	ug/L	EPA 8260B	3/3/2008
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>Tert-Butanol</b>	<b>69</b>	15	ug/L	EPA 8260B	3/1/2008
<b>TPH as Gasoline</b>	<b>14000</b>	250	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dichloroethane</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
<b>1,2-Dibromoethane</b>	<b>&lt; 2.5</b>	2.5	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	96.2		% Recovery	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	3/1/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 800</b>	800	ug/L	M EPA 8015	3/4/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	125		% Recovery	M EPA 8015	3/4/2008

Approved By:

Jeff Dahl



Project Name : **Lim**

Project Number : **2808**

Sample : **MW-8**

Matrix : Water

Lab Number : 61282-07

Sample Date :2/26/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>0.51</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Toluene</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Ethylbenzene</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Total Xylenes</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>Tert-Butanol</b>	<b>&lt; 5.0</b>	5.0	ug/L	EPA 8260B	3/5/2008
<b>TPH as Gasoline</b>	<b>&lt; 50</b>	50	ug/L	EPA 8260B	3/5/2008
<b>1,2-Dichloroethane</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
<b>1,2-Dibromoethane</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	3/5/2008
Toluene - d8 (Surr)	94.6		% Recovery	EPA 8260B	3/5/2008
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	3/5/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	3/5/2008
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 50</b>	50	ug/L	M EPA 8015	3/5/2008
Octacosane (Diesel Silica Gel Surr)	101		% Recovery	M EPA 8015	3/5/2008

Approved By:

Jeff Dahl




**QC Report : Method Blank Data**

Project Name : **Lim**

Project Number : **2808**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	3/3/2008
Octacosane (Diesel Silica Gel Surr)	95.0		%	M EPA 8015	3/3/2008
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	3/4/2008
Octacosane (Diesel Silica Gel Surr)	113		%	M EPA 8015	3/4/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/29/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/29/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Toluene - d8 (Surr)	98.8		%	EPA 8260B	2/29/2008
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	2/29/2008
1,2-Dichloroethane-d4 (Surr)	98.4		%	EPA 8260B	2/29/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/1/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/1/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	101		%	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	3/1/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/3/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/3/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/3/2008
Toluene - d8 (Surr)	101		%	EPA 8260B	3/3/2008
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	3/3/2008
1,2-Dichloroethane-d4 (Surr)	98.6		%	EPA 8260B	3/3/2008

Approved By:  Jeff Dah

**QC Report : Method Blank Data**Project Name : **Lim**Project Number : **2808**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/4/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/4/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/4/2008
Toluene - d8 (Surr)	97.0		%	EPA 8260B	3/4/2008
4-Bromofluorobenzene (Surr)	98.2		%	EPA 8260B	3/4/2008
1,2-Dichloroethane-d4 (Surr)	98.4		%	EPA 8260B	3/4/2008

Benzene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	2/29/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	2/29/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	2/29/2008
Toluene - d8 (Surr)	98.6		%	EPA 8260B	2/29/2008
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	2/29/2008
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	2/29/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	3/1/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/1/2008
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	3/1/2008
Toluene - d8 (Surr)	99.7		%	EPA 8260B	3/1/2008
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	3/1/2008
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	3/1/2008

Approved By:  Jeff Dah

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Lim**Project Number : **2808**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	Blank	<50	1000	1000	855	818	ug/L	M EPA 8015	3/3/08	85.5	81.8	4.38	70-130	25
TPH-D (Si Gel)	Blank	<50	1000	1000	1100	1130	ug/L	M EPA 8015	3/4/08	110	113	3.10	70-130	25
Benzene	61286-01	<0.50	39.7	40.0	39.3	40.1	ug/L	EPA 8260B	2/29/08	99.1	100	1.25	70-130	25
Toluene	61286-01	<0.50	39.7	40.0	40.1	40.6	ug/L	EPA 8260B	2/29/08	101	101	0.373	70-130	25
Tert-Butanol	61286-01	<5.0	198	200	182	194	ug/L	EPA 8260B	2/29/08	92.0	97.3	5.55	70-130	25
Methyl-t-Butyl Ether	61286-01	0.52	39.7	40.0	36.5	35.7	ug/L	EPA 8260B	2/29/08	90.7	88.0	3.04	70-130	25
Benzene	61282-07	0.51	40.0	40.0	41.7	42.3	ug/L	EPA 8260B	3/1/08	103	104	1.39	70-130	25
Toluene	61282-07	<0.50	40.0	40.0	40.7	41.8	ug/L	EPA 8260B	3/1/08	102	104	2.55	70-130	25
Tert-Butanol	61282-07	<5.0	200	200	199	211	ug/L	EPA 8260B	3/1/08	99.6	106	5.86	70-130	25
Methyl-t-Butyl Ether	61282-07	<0.50	40.0	40.0	34.4	35.3	ug/L	EPA 8260B	3/1/08	86.1	88.3	2.52	70-130	25
Benzene	61281-09	220	39.8	39.9	249	240	ug/L	EPA 8260B	3/3/08	71.7	51.3	33.2	70-130	25
Toluene	61281-09	19	39.8	39.9	58.8	57.2	ug/L	EPA 8260B	3/3/08	100	95.9	4.20	70-130	25
Tert-Butanol	61281-09	8.2	199	200	192	191	ug/L	EPA 8260B	3/3/08	92.0	91.6	0.474	70-130	25
Methyl-t-Butyl Ether	61281-09	<0.50	39.8	39.9	36.6	35.2	ug/L	EPA 8260B	3/3/08	92.0	88.3	4.10	70-130	25
Benzene	61350-02	<0.50	40.0	40.0	40.0	39.0	ug/L	EPA 8260B	3/4/08	100	97.6	2.54	70-130	25
Toluene	61350-02	<0.50	40.0	40.0	38.4	37.4	ug/L	EPA 8260B	3/4/08	96.0	93.6	2.51	70-130	25
Tert-Butanol	61350-02	<5.0	200	200	212	202	ug/L	EPA 8260B	3/4/08	106	101	4.95	70-130	25

Approved By:  Jeff Dahl

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Lim**Project Number : **2808**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-Butyl Ether	61350-02	0.91	40.0	40.0	38.9	37.6	ug/L	EPA 8260B	3/4/08	95.1	91.8	3.48	70-130	25
Benzene	61310-04	<0.50	40.0	40.0	39.4	39.2	ug/L	EPA 8260B	2/29/08	98.6	97.9	0.678	70-130	25
Toluene	61310-04	<0.50	40.0	40.0	42.3	42.7	ug/L	EPA 8260B	2/29/08	106	107	0.873	70-130	25
Tert-Butanol	61310-04	<5.0	200	200	199	205	ug/L	EPA 8260B	2/29/08	99.5	102	3.01	70-130	25
Methyl-t-Butyl Ether	61310-04	<0.50	40.0	40.0	35.8	36.4	ug/L	EPA 8260B	2/29/08	89.6	91.1	1.65	70-130	25
Benzene	61276-09	<0.50	40.0	40.0	39.1	37.9	ug/L	EPA 8260B	3/1/08	97.7	94.8	3.03	70-130	25
Toluene	61276-09	<0.50	40.0	40.0	42.5	41.5	ug/L	EPA 8260B	3/1/08	106	104	2.41	70-130	25
Tert-Butanol	61276-09	<5.0	200	200	196	194	ug/L	EPA 8260B	3/1/08	97.8	97.0	0.754	70-130	25
Methyl-t-Butyl Ether	61276-09	<0.50	40.0	40.0	35.6	35.2	ug/L	EPA 8260B	3/1/08	88.9	88.1	0.951	70-130	25

Approved By:  Jeff Dahl

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800



## QC Report : Laboratory Control Sample (LCS)

Project Name : **Lim**Project Number : **2808**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	2/29/08	101	70-130
Toluene	40.0	ug/L	EPA 8260B	2/29/08	103	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/29/08	92.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/29/08	86.1	70-130
Benzene	40.0	ug/L	EPA 8260B	3/1/08	98.7	70-130
Toluene	40.0	ug/L	EPA 8260B	3/1/08	100	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/1/08	93.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/1/08	92.6	70-130
Benzene	40.0	ug/L	EPA 8260B	3/3/08	103	70-130
Toluene	40.0	ug/L	EPA 8260B	3/3/08	102	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/3/08	99.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/3/08	101	70-130
Benzene	40.0	ug/L	EPA 8260B	3/4/08	98.6	70-130
Toluene	40.0	ug/L	EPA 8260B	3/4/08	96.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/4/08	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/4/08	90.8	70-130
Benzene	40.0	ug/L	EPA 8260B	2/29/08	96.4	70-130

KIFF ANALYTICAL, LLC

Approved By:

Jeff Dahl

Report Number : 61282

Date : 3/5/2008

**QC Report : Laboratory Control Sample (LCS)**

Project Name : **Lim**

Project Number : **2808**

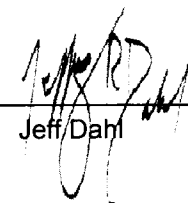
Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	2/29/08	105	70-130
Tert-Butanol	200	ug/L	EPA 8260B	2/29/08	97.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	2/29/08	87.5	70-130
Benzene	40.0	ug/L	EPA 8260B	3/1/08	98.4	70-130
Toluene	40.0	ug/L	EPA 8260B	3/1/08	108	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/1/08	99.1	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/1/08	90.4	70-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Approved By:

Jeff Dahl



101282

# CHAIN OF CUSTODY

Aqua Science Engineers, Inc.  
 55 Oak Court, Suite 220  
 Danville, CA 94588  
 phone: (925) 820-9391  
 fax: (925) 837-4953

JOB # 2808

PAGE 1 OF 1

SAMPLER (SIGNATURE) And C. Kiley DATE 2-26-08 PROJECT NAME: Lim  
 ADDRESS: 250 8th Street, Oakland, CA

ANALYSIS REQUEST					TPH-GAS/BTEX/MTBE (EPA 5030/8015-8020)	TPH-GAS/BTEX/5 OXYs (EPA 8260B) + 1b 3caV	TPH-GAS/BTEX/7 OXYs/HYOCs (EPA 8260B)	TPH-DIESEL (EPA 8015) with silica gel cleanup	TPH-DIESEL & MOTOR OIL (8015) w/ silica gel cleanup	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LIFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	HOLD			
Special Instructions: <u>EDF</u>	Sample ID	Date	Time	Matrix																		No. of Samples	
	MW-1	2-26-08	1250	W	5	X	X															01	
	MW-2		1120			X	X																02
	MW-4		1020			X	X																03
	MW-5		1210			X	X																04
	MW-6		850			X	X																05
	MW-7		940			X	X																06
	MW-8		1400			X	X																07

**SAMPLE RECEIPT**  
 Temp C 7.2 Therm. ID# 78  
 Initials JK Date 022708  
 Time 1612 Coolant present Yes/No

RELINQUISHED BY: <u>And C. Kiley</u> (signature) (time)	RECEIVED BY:  (signature) (time)	RELINQUISHED BY:  (signature) (time)	RECEIVED BY LABORATORY: <u>Jason ~ Kerner</u> (signature) (time) 1300	COMMENTS: <u>EDF</u>
Robert E. Kiley (printed name) (date)	 (printed name) (date)	 (printed name) (date)	Jason ~ Kerner (printed name) (date) 022708	VOAs preserved w/ HCl TURNAROUND TIME
Company: Aqua Science Engineers	Company:	Company:	Company: K&A	STANDARD 24HR 48HR 72HR



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX G**

Analytical Reports for Soil Vapor Samples



AN ENVIRONMENTAL ANALYTICAL LABORATORY

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## **Air Toxics Ltd. Introduces the Electronic Report**

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

**180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630**

**(916) 985-1000 .FAX (916) 985-1020  
Hours 8:00 A.M to 6:00 P.M. Pacific**



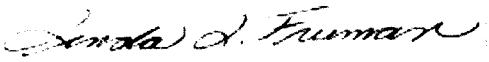
AN ENVIRONMENTAL ANALYTICAL LABORATORY

**WORK ORDER #: 0802172**

Work Order Summary

<b>CLIENT:</b>	Mr. Robert Kitay Aqua Science Engineering 55 Oak Court, Suite 220 Danville, CA 95426	<b>BILL TO:</b>	Mr. Robert Kitay Aqua Science Engineering 55 Oak Court, Suite 220 Danville, CA 95426
<b>PHONE:</b>	925-820-9391 x202	<b>P.O. #</b>	
<b>FAX:</b>	925-837-4853	<b>PROJECT #</b>	2808 LIM
<b>DATE RECEIVED:</b>	02/08/2008	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	02/22/2008		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-8	Modified TO-3	0.5 "Hg	15 psi
02A	SV-9	Modified TO-3	0.5 "Hg	15 psi
03A	SV-10	Modified TO-3	0.0 "Hg	15 psi
04A	Lab Blank	Modified TO-3	NA	NA
05A	LCS	Modified TO-3	NA	NA
05B	LCS	Modified TO-3	NA	NA

CERTIFIED BY:   
 Laboratory Director

DATE: 02/22/08

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004  
 NY NELAP - 11291, UT NELAP - 9166389892

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,  
 Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified TO-3**  
**Aqua Science Engineering**  
**Workorder# 0802172**

Three 1 Liter Summa Canister samples were received on February 08, 2008. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. The TPH (Gasoline Range) results are calculated using the response factor of Gasoline. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<b>Requirement</b>	<b>TO-3</b>	<b>ATL Modifications</b>
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch <= 20 samples
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation $DL = A + 3.3S$ , where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

**Receiving Notes**

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per verbal agreement.

**Analytical Notes**

There were no analytical discrepancies.

### **Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue





AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Summary of Detected Compounds  
MODIFIED EPA METHOD TO-3 GC/PID/FID**

**Client Sample ID: SV-8**

**Lab ID#: 0802172-01A**

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
Benzene	0.0020	0.0065	0.021	0.068
Toluene	0.0020	0.0077	0.041	0.15
Ethyl Benzene	0.0020	0.0089	0.013	0.057
m,p-Xylene	0.0020	0.0089	0.029	0.13
o-Xylene	0.0020	0.0089	0.015	0.064
TPH (Gasoline Range)	0.051	0.21	1.0	4.2

**Client Sample ID: SV-9**

**Lab ID#: 0802172-02A**

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
Benzene	0.0020	0.0065	0.0027	0.0087
Toluene	0.0020	0.0077	0.0088	0.033
Ethyl Benzene	0.0020	0.0089	0.0052	0.023
m,p-Xylene	0.0020	0.0089	0.015	0.064
o-Xylene	0.0020	0.0089	0.0082	0.036
TPH (Gasoline Range)	0.051	0.21	0.32	1.3

**Client Sample ID: SV-10**

**Lab ID#: 0802172-03A**

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
Benzene	0.0020	0.0064	0.0022	0.0069
Toluene	0.0020	0.0076	0.0071	0.027
m,p-Xylene	0.0020	0.0088	0.0057	0.025
o-Xylene	0.0020	0.0088	0.0027	0.012
TPH (Gasoline Range)	0.050	0.21	0.095	0.39



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: SV-8

Lab ID#: 0802172-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

<b>File Name:</b>	<b>d021806</b>	<b>Date of Collection:</b> 2/9/08
<b>Dil. Factor:</b>	<b>2.05</b>	<b>Date of Analysis:</b> 2/19/08 06:33 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0020	0.0065	0.021	0.068
Toluene	0.0020	0.0077	0.041	0.15
Ethyl Benzene	0.0020	0.0089	0.013	0.057
m,p-Xylene	0.0020	0.0089	0.029	0.13
o-Xylene	0.0020	0.0089	0.015	0.064
TPH (Gasoline Range)	0.051	0.21	1.0	4.2

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	112	75-150
Fluorobenzene (PID)	102	75-125



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: SV-9

Lab ID#: 0802172-02A

**MODIFIED EPA METHOD TO-3 GC/PID/FID**

<b>File Name:</b>	<b>d021807</b>	<b>Date of Collection:</b>	<b>2/9/08</b>
<b>Dil. Factor:</b>	<b>2.05</b>	<b>Date of Analysis:</b>	<b>2/18/08 07:00 PM</b>

<b>Compound</b>	<b>Rpt. Limit (ppmv)</b>	<b>Rpt. Limit (uG/L)</b>	<b>Amount (ppmv)</b>	<b>Amount (uG/L)</b>
Benzene	0.0020	0.0065	0.0027	0.0087
Toluene	0.0020	0.0077	0.0088	0.033
Ethyl Benzene	0.0020	0.0089	0.0052	0.023
m,p-Xylene	0.0020	0.0089	0.015	0.064
o-Xylene	0.0020	0.0089	0.0082	0.036
TPH (Gasoline Range)	0.051	0.21	0.32	1.3

**Container Type: 1 Liter Summa Canister**

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	107	75-150
Fluorobenzene (PID)	96	75-125



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: SV-10

Lab ID#: 0802172-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

<b>File Name:</b>	<b>d021808</b>	<b>Date of Collection:</b> 2/8/08
<b>Dil. Factor:</b>	<b>2.02</b>	<b>Date of Analysis:</b> 2/18/08 07:41 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0020	0.0064	0.0022	0.0069
Toluene	0.0020	0.0076	0.0071	0.027
Ethyl Benzene	0.0020	0.0088	Not Detected	Not Detected
m,p-Xylene	0.0020	0.0088	0.0057	0.025
o-Xylene	0.0020	0.0088	0.0027	0.012
TPH (Gasoline Range)	0.050	0.21	0.095	0.39

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	109	75-150
Fluorobenzene (PID)	98	75-125



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: Lab Blank

Lab ID#: 0802172-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

<b>File Name:</b>	<b>d021803</b>	<b>Date of Collection:</b> NA
<b>DIL Factor:</b>	<b>1.00</b>	<b>Date of Analysis:</b> 2/19/08 04:15 PM

Compound	Rpt. Limit (ppmv)	Rpt. Limit (uG/L)	Amount (ppmv)	Amount (uG/L)
Benzene	0.0010	0.0032	Not Detected	Not Detected
Toluene	0.0010	0.0038	Not Detected	Not Detected
Ethyl Benzene	0.0010	0.0043	Not Detected	Not Detected
m,p-Xylene	0.0010	0.0043	Not Detected	Not Detected
o-Xylene	0.0010	0.0043	Not Detected	Not Detected
TPH (Gasoline Range)	0.025	0.10	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-150
Fluorobenzene (PID)	93	75-125



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0802172-05A

MODIFIED EPA METHOD TO-3 GC/PID/FID

File Name:	d021831b	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	2/19/08 01:16 PM

Compound	%Recovery
Benzene	91
Toluene	105
Ethyl Benzene	94
m,p-Xylene	107
o-Xylene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorobenzene (PID)	87	75-125



AN ENVIRONMENTAL ANALYTICAL LABORATORY

Client Sample ID: LCS

Lab ID#: 0802172-05B

**MODIFIED EPA METHOD TO-3 GC/PID/FID**

<b>File Name:</b>	<b>d021830</b>	<b>Date of Collection: NA</b>
<b>Dil. Factor:</b>	<b>1.00</b>	<b>Date of Analysis: 2/19/06 12:45 PM</b>

<b>Compound</b>	<b>%Recovery</b>
TPH (Gasoline Range)	82

Container Type: NA - Not Applicable

<b>Surrogates</b>	<b>%Recovery</b>	<b>Method Limits</b>
Fluorobenzene (FID)	118	75-150



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX H**

### Survey Data





## Mid Coast Engineers

Civil Engineers and Land Surveyors

70 Penny Lane, Suite A - Watsonville, CA 95076

phone: (831) 724-2580

fax: (831) 724-8026

e-mail: lee@midcoastengineers.com

Richard A. Wadsworth

Civil Engineer

Stanley O. Nielsen

Land Surveyor

Lee D. Vaage

Land Surveyor

Jeff S. Nielsen

Land Surveyor

February 25, 2008

Robert Kitay  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Re: **Lim Property, 250 8<sup>th</sup> Street, Oakland, California;** Aqua Science Engineers Project,  
MCE Job No. 02142X

Dear Mr. Kitay,

As you requested, on February 21 we surveyed one monitoring well, three soil borings and seven soil vapor borings located at the referenced site. Our findings are shown on the attached sheets, expressed in State Plane Coordinates and Latitude/Longitude, and are consistent with data from our previous surveys of June 27 and July 11, 2002.

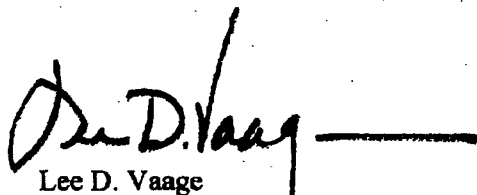
A notch was cut in the north rim of the PVC casing (TOC) and a cross chiseled in the north rim of the box (TOB). Measurements were taken at the approximate center of the grouted borings at ground level.

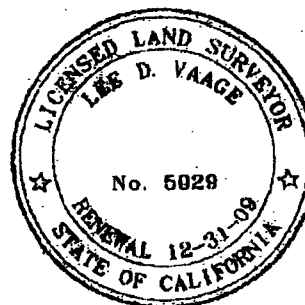
Measurements were obtained from conventional survey techniques in combination with GPS techniques (Code CGPS), using control points H016 and H031 as shown on the map entitled "Record of Survey No. 990, "Monumentation System for the Port of Oakland", filed in Book 18 of Surveys at Pages 50-60, Alameda County Records. Latitude and Longitude as shown were determined from the California Coordinate System, Zone 3, NAD 83 Datum. The accuracy range of the reported information is +/- 1cm. GPS equipment is the Trimble 5700 system (Code T57).

The benchmark used for this survey is City of Oakland BM 25A, a brass pin in monument box in the sidewalk at the northeast corner of the intersection of 7<sup>th</sup> Street and Harrison. Elevation =25.812 feet, NGVD 29 (City of Oakland Datum).

Please let me know if you have questions or need additional information.

Yours truly,

  
Lee D. Vaage



**LIM PROPERTY**  
**250 8th Street**  
**Oakland, California**

**Aqua Science Engineers**

Project : 02142X

User name MCE Date & Time 1:14:54 PM 2/25/2008  
Coordinate System US State Plane 1983 Zone California Zone 3 0403  
Project Datum NAD 1983 (Conus)  
Vertical Datum NGVD 29  
Coordinate Units US survey feet  
Distance Units US survey feet  
Elevation Units US survey feet

Point Number	Northing	Easting	Elevation	Description
143	2118108.40	6050476.13	30.14	MW-8toc
144	2118108.76	6050475.98	30.49	MW-8tob
132	2118122.58	6050567.06	30.60	SB-8
131	2118109.96	6050589.87	30.16	SB-9
154	2118151.77	6050602.64	31.17	SB-10
147	2118063.03	6050375.75	29.14	SV-1
148	2118040.19	6050420.55	29.04	SV-2
149	2118023.92	6050450.72	28.86	SV-3
151	2118007.72	6050482.44	28.90	SV-4
145	2118113.45	6050443.28	30.13	SV-5
139	2118117.13	6050478.17	30.23	SV-6
133	2118103.66	6050579.37	30.59	SV-7

**LIM PROPERTY**  
**250 8th Street**  
**Oakland, California**

**Aqua Science Engineers**

Project : 02142X

User name MCE Date & Time 1:14:54 PM 2/25/2008  
Coordinate System US State Plane 1983 Zone California Zone 3 0403  
Project Datum NAD 1983 (Conus)  
Vertical Datum NGVD 29  
Coordinate Units US survey feet  
Distance Units US survey feet  
Elevation Units US survey feet

Point Number	Latitude	Longitude	Elevation	Description
143	37.798670392°N	122.269363471°W	30.14	MW-8toc
144	37.798671384°N	122.269364042°W	30.49	MW-8tob
132	37.798714056°N	122.269049759°W	30.60	SB-8
131	37.798680605°N	122.268970008°W	30.16	SB-9
154	37.798796051°N	122.268928524°W	31.17	SB-10
147	37.798540621°N	122.269707869°W	29.14	SV-1
148	37.798480223°N	122.269551368°W	29.04	SV-2
149	37.798437127°N	122.269445899°W	28.86	SV-3
151	37.798394279°N	122.269335052°W	28.90	SV-4
145	37.798682571°N	122.269477498°W	30.13	SV-5
139	37.798694476°N	122.269356981°W	30.23	SV-6
133	37.798662762°N	122.269005934°W	30.59	SV-7

	A	B	C	D	E	F	G	H	I	J	K	L
1	LIM PROPERTY											
2	250 8th Street											
3	Oakland, California											
4												
5	Aqua Science Engineers											
6												
7	Project : 02142X											
8	User name MCE Date & Time 1:14:54 PM 2/25/2008											
9	Coordinate System US State Plane 1983 Zone California Zone 3 0403											
10	Project Datum NAD 1983 (Conus)											
11	Vertical Datum NGVD 29											
12	Coordinate Units US survey feet											
13	Distance Units US survey feet											
14	Elevation Units US survey feet											
15												
16	MW-8	MW	02/21/2008	37.7986704	-122.2693635	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing	
17												
18	SB-8	SB	02/21/2008	37.7987141	-122.2690498	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
19	SB-9	SB	02/21/2008	37.7986806	-122.2689700	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
20	SB-10	SB	02/21/2008	37.7987961	-122.2689285	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
21												
22	SV-1	SV	02/21/2008	37.7985406	-122.2697079	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
23	SV-2	SV	02/21/2008	37.7984802	-122.2695514	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
24	SV-3	SV	02/21/2008	37.7984371	-122.2694459	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
25	SV-4	SV	02/21/2008	37.7983943	-122.2693351	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
26	SV-5	SV	02/21/2008	37.7986828	-122.2694775	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
27	SV-6	SV	02/21/2008	37.7986945	-122.2693570	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	
28	SV-7	SV	02/21/2008	37.7986628	-122.2690059	CGPS	NAD83	1	Mid Coast Engineers	T57	ground	

	A	B	C	D	E	F	G	H	I
1	LIM PROPERTY								
2	250 8th Street								
3	Oakland, California								
4									
5	Aqua Science Engineers								
6									
7	Project : 02142X								
8	User name MCE		Date & Time 1:14:54 PM 2/25/2008						
9	Coordinate System US State Plane 1983		Zone California Zone 3 0403						
10	Project Datum NAD 1983 (Conus)								
11	Vertical Datum NGVD 29								
12	Coordinate Units US survey feet								
13	Distance Units US survey feet								
14	Elevation Units US survey feet								
15									
16		MW-8	02/21/2008	30.14	CGPS	29	0.5	Mid Coast Engineers	
17									
18		SB-8	02/21/2008	30.60	CGPS	29	0.5	Mid Coast Engineers	
19		SB-9	02/21/2008	30.16	CGPS	29	0.5	Mid Coast Engineers	
20		SB-10	02/21/2008	31.17	CGPS	29	0.5	Mid Coast Engineers	
21									
22		SV-1	02/21/2008	29.14	CGPS	29	0.5	Mid Coast Engineers	
23		SV-2	02/21/2008	29.04	CGPS	29	0.5	Mid Coast Engineers	
24		SV-3	02/21/2008	28.86	CGPS	29	0.5	Mid Coast Engineers	
25		SV-4	02/21/2008	28.90	CGPS	29	0.5	Mid Coast Engineers	
26		SV-5	02/21/2008	30.13	CGPS	29	0.5	Mid Coast Engineers	
27		SV-6	02/21/2008	30.23	CGPS	29	0.5	Mid Coast Engineers	
28		SV-7	02/21/2008	30.59	CGPS	29	0.5	Mid Coast Engineers	