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November 15, 2008

Attn. Mr. Jerry Wickham  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**RECEIVED**

9:24 am, Dec 02, 2008

Alameda County  
Environmental Health

**Subject: System Modifications & Quarterly Site Monitoring Report  
(Third Quarter, 2008)**

245 8<sup>th</sup> Street  
Oakland, California 94607  
Project No. 116907  
ACHCSA RO#0000202


Dear Mr. Wickham:

Enclosed is a copy of the recently completed "System Modifications & Quarterly Site Monitoring Report (Third Quarter, 2008)" prepared for the subject property.

As required, an electronic version of this report has been uploaded to the State Water Resources Control Board's GeoTracker information system and the Alameda County Health Care Services Agency ftp site for review.

We look forward to hearing your comments regarding this report and our recommendations regarding the next scope of work. Should you have any questions or comments, or need any additional information, you may reach me at (925) 944-2899, ext. 148.

Sincerely,  
**AEI Consultants**

  
Richard J. Bradford  
Project Engineer

RB/

Enclosure

cc: Mr. Victor Lum, Vic's Automotive, 245 8<sup>th</sup> Street, Oakland, California 94607

November 15, 2008

**SYSTEM MODIFICATIONS &  
QUARTERLY SITE MONITORING REPORT  
(THIRD QUARTER, 2008)**

245 8<sup>th</sup> Street  
Oakland, California

AEI Project No. 116907  
ACHCSA RO#00000202

Prepared For:

Vic's Automotive  
245 8<sup>th</sup> Street  
Oakland, California 94607

Prepared By:

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**AEI**

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## 1.0 INTRODUCTION

AEI Consultants (AEI) has prepared this report on behalf of Mr. Victor Lum, owner and operator of Vic's Auto automotive repair and fuel service station located at 245 8<sup>th</sup> Street in the City of Oakland, Alameda County, California (Figure 1). AEI has been retained by Mr. Lum to provide environmental engineering and consulting services related to the release of gasoline fuel hydrocarbons from the former underground storage tank (UST) and dispensing system on the property. The ongoing investigation and mitigation of the release is being performed under the direction of the Alameda County Health Care Services Agency (ACHCSA). This report has been prepared to document the field activities and results of groundwater and soil gas monitoring for the Third Quarter, 2008 as well as the high vacuum dual phase extraction (HVDPE) system processing monitoring and operations and maintenance (O&M) activities for the months of July, August, and September of 2008. This report also discusses decommissioning of soil gas probes GP-3 and GP-4 and the installation of the HVPDE conveyance piping laterals at 708 Alice Street as approved by ACHCSA and the Alameda County Public Works Agency (ACPWA). The piping laterals were installed so that monitoring wells MW-10, 11, and 12 could continue to be used for dual phase extraction while the property was being developed. While soil gas probe GP-3 cannot be reinstalled, GP-4 will be reinstalled once the building construction activities have been completed.

The HVDPE system was installed and started up in June of 2007. The main purposes for installing and operating a HVDPE system onsite as interim corrective action include:

- Hydrocarbon mass removal by performing continuous HVDPE using existing monitoring/extraction wells for the removal, recovery, and treatment of light non-aqueous phase liquid (LNAPL), soil gas, and groundwater from the vadose zone, capillary fringe, and shallow saturated zone in accordance with state and local air and water quality permit requirements.
- Performing continuous HVDPE at the source and along the southwestern property boundary to mitigate the potential for vapor intrusion into nearby residences situated above and in close proximity to the LNAPL and groundwater plumes by maintaining a low negative pressure (i.e., high vacuum) in the subsurface relative to the building foundations.

## 2.0 SITE DESCRIPTION & BACKGROUND

The subject property (hereafter referred to as the "site" or "property") is located in a mixed commercial and residential area of Oakland. The site is a lot on the south corner of Alice Street and 8<sup>th</sup> Street, and is currently developed with a gasoline service station and automotive repair facility (Figure 2). The property covers approximately 9,375 square feet and is improved with an approximately 1,200 square foot building located centrally on the property with two bays used for automotive repair, two restrooms, and a cashier's office. The current UST hold and the dispenser island are located to the north of the building, along 8<sup>th</sup> Street. The former UST hold was located to the south of the building, along Alice Street. The remainder of the property is paved with asphalt and used for parking and staging vehicles for repairs.

- Between June of 1993 and August of 1994, AEI removed seven (7) underground storage tanks (USTs) from the property. The tanks consisted of four (4) 1,000-gallon gasoline tanks located in the sidewalk along Alice Street, two (2) 6,000-gallon gasoline tanks and one (1) 250-gallon waste oil tank. Impacted soil was removed from beneath the former tank area. Groundwater was encountered beneath the former 6,000-gallon tanks. Light non-aqueous phase liquid (LNAPL) was observed on the water table beneath the southern tank. The excavated soil was transported to an appropriate disposal facility and the excavation was backfilled with clean fill material. A new tank system was installed just west of the dispenser island.
- In July of 1995, two (2) groundwater monitoring wells (MW-1 and MW-2) were installed onsite. Total petroleum hydrocarbons as gasoline (TPH-g) and benzene were detected in MW-2 at concentrations up to 210,000 µg/L and 720 µg/L, respectively during the first two monitoring episodes. Light non-aqueous phase liquid (LNAPL) or free phase gasoline was discovered in MW-1. The apparent LNAPL thickness in MW-1 ranged from 1.20 to 4.39 feet between December 1995 and March 1996.
- In August of 1996, AEI advanced three (3) soil borings (i.e., SB-1 through SB-3) onsite. TPH-g and benzene were detected in the groundwater samples from these borings at concentrations ranging from 120,000 to 140,000 µg/L, and from 12,000 to 19,000 µg/L, respectively. Methyl tertiary-butyl ether (MTBE) was also detected in all three samples at concentrations up to 27,000 µg/L. Although free phase product was not observed in the field, qualitative laboratory observations indicated an immiscible sheen was present in the samples.
- Manual bailing and pumping of LNAPL from MW-1 occurred intermittently from 1997 to 1998.
- In May of 2001, two (2) additional groundwater monitoring wells (MW-3 and MW-4) were installed onsite. In June of 2001, a free product recovery system was installed in MW-1. The free product recovery system removed several hundred gallons of LNAPL between 2001 and 2003.
- In April of 2003, AEI advanced twelve (12) additional soil borings (SB-4 to SB-15) onsite and offsite for the collection of soil, shallow groundwater, and soil vapor samples to further characterize the magnitude and lateral extent of the release.
- In January of 2005, AEI installed six (6) additional monitoring/extraction wells (MW-5, MW-6 and MW-7 were installed onsite and wells MW-10 to MW-12 were installed offsite at the 708 Alice Street property). Wells MW-8 and MW-9 were proposed for installation in the parking lane along 7<sup>th</sup> and Alice Streets; however, due to difficult insurance wording requirements imposed by the City of Oakland, these wells were not installed until March of 2008.

- From July 11 to July 27, 2005, a 16-day HVDPE pilot test was performed on wells MW-1, MW-2, MW-5, MW-6, and MW-7. Combined vapor influent flow rates ranged from approximately 170 to 190 standard cubic feet per minute (scfm) under a sustained vacuum of 16 to 17 inches of mercury (in-Hg). The average water flow rate was approximately 4.1 gallons per minute (gpm). A total of 80,740 gallons of groundwater was recovered, treated, and discharged to the sanitary sewer under a short-term, limited volume groundwater discharge permit from the East Bay Municipal Utilities District (EBMUD). Significant drawdown and pressure (i.e., vacuum) response was observed in the vadose and saturated zone monitoring points. Approximately 5 pounds per day (lbs/day) of dissolved phase and 697 lbs/day of vapor phase hydrocarbons were recovered during the test. A total of 10,719 pounds or 1,716 gallons of gasoline was removed during this test. Based on the encouraging results of this pilot test, AEI recommended interim corrective action using HVDPE for 12 to 18 months using fixed equipment. Please refer to AEI's "HVDPE Event Report", dated December 14, 2005, for more information.
- In March of 2006, the ACHSA concurred with the implementation of HVDPE using fixed equipment and requested a system design, operations and maintenance, and monitoring plan. In this letter, the ACHSA also requested soil vapor sampling to evaluate the potential for vapor intrusion due to the elevated concentrations of fuel hydrocarbons detected in the soil and groundwater onsite and offsite.
- In May of 2006, a HVDPE system design, operations and maintenance, and monitoring plan and a separate soil gas investigation work plan were submitted to ACHSA for review and comment. Please refer to AEI's "High Vacuum Dual Phase Extraction System Design, Operations, and Maintenance Plan," dated May 24, 2006 and "Soil Gas Investigation Work Plan", dated May 12, 2006, for more information.
- In November of 2006, trenching and installation of the conveyance piping for HVDPE system was conducted. The system completion and delivery was scheduled for 1<sup>st</sup> Quarter 2007; however, the system was delivered in April 2007. The remaining infrastructure, such as the rotary phase converter, equipment, fence, and wellhead connections were installed in May of 2007 and the system was started up on June 26, 2007.
- On June 11, 2007, two (2) 55-gallon drums, or approximately 100 gallons of water containing about 50% LNAPL, was removed from MW-1 and MW-6 by operating the HVDPE system in product skimming mode.
- In November of 2007, additional HVDPE conveyance piping was installed above grade behind the onsite building to the rear of the property and the system was expanded to include monitoring/extraction wells MW-10, MW-11, and MW-12.
- In March of 2008, wells (MW-8, MW-9 and MW-13) were finally installed. Elevated concentrations of TPH-g, BTEX, and MTBE were detected in samples collected from MW-9. Low to none-detectable concentrations of TPH-g, BTEX, and MTBE were detected in MW-8 and MW-13. Elevated concentrations of MTBE were detected in MW-13.

### **3.0 GEOLOGY AND HYDROGEOLOGY**

The elevation of the site is approximately 27 to 29 feet above mean sea level (amsl). The site is flat; however, the topography of the area slopes gently to the southwest. The site is located between Lake Merritt and the Oakland Inner Harbor channel, approximately one-half mile from each. The near surface sediments are mapped as Holocene and Pleistocene Merritt Sand (Qms), which are further described as “fine-grained, well-sorted, well-drained, Aeolian sand deposits” (Helley and Graymer, 1997 and Graymer, 2000). Depth to the Franciscan Formation basement underlying the unconsolidated deposits is approximately 400 feet (Norfleet Consultants, 1998).

Based on the logs of soil borings advanced on and offsite, the native soils generally consist of fine to medium grained sands with silt and clay present to at least 28 feet bgs, the deepest explored at the site. Typically, silty and clayey fine grained sand have been encountered to depths of 15 to 18 feet bgs. This is underlain by poorly graded, clean to slightly clayey and silty fine to medium sand. Both sand bodies represent a single hydro-geologic system. Sediments have been relatively uniform throughout the investigation area.

Groundwater depths have typically ranged from 13 to 17 feet bgs, corresponding to elevation of approximately 10 to 14 feet above mean sea level (msl). Annual groundwater levels fluctuate by approximately 3 to 4 feet. Groundwater has consistently flowed to the south, southeast, or southwest with a hydraulic gradient of approximately 0.010 ft/ft. Recent water levels have been affected by the groundwater extraction activities.

### **4.0 HVDPE CONVEYANCE PIPING LATERAL INSTALLATION**

Between August 21 and 22, 2008, soil gas probes GP-3 and GP-4 was decommissioned by physical removal and three (3) horizontal HVDPE conveyance piping laterals were installed to MW-10, 11, and 12 so that these wells could continue to be used for dual phase extraction while the property was being developed. Installation of the piping laterals in lieu of destroying the wells was a critical step towards the successful remediation of the down gradient extent of the fuel hydrocarbon plume because there is no access or space whatsoever to install vertical treatment wells between the source area and 7<sup>th</sup> Street. The piping laterals were installed from each monitoring/extraction well to the northeast rear corner of 708 Alice Street as shown on Figure 3.

#### **4.1 Permits and Clearances**

Prior to decommissioning of soil gas probes GP-3 and GP-4 and construction of the HVDPE piping laterals and modification to the existing wellheads, the ACHCSA and the ACPWA were contacted to discuss the potential option of leaving MW-10, 11 and 12 beneath the proposed building at 708 Alice Street. The main concern of the ACHCSA and the ACPWA was the ability to effectively seal or pressure-grout the wells with a cement slurry once the remediation was completed. Because the wells are relatively shallow, or roughly 22-feet bgs, AEI proposed using the 1-inch flexible PVC suction hose, also called a “drop tube” or “stinger”, used for dual phase extraction as a tremi-pipe. A description of the process and draft plans were sent to both the ACHCSA and ACPWA on June 12, 2008. Because GP-3 and GP-4 were constructed of very small diameter tubing with a bentonite seal under a soil boring permit and have little potential for acting as vertical conduits,



ACPWA allowed the probes to either be capped or physically removed (pulled-out) if possible. ACPWA approved the plan on June 12, 2008 via email and the ACHCSA approved the plan on June 19, 2008 via email after an onsite meeting with the case manager Mr. Jerry Wickham. Please refer to Appendix D for copies of the electronic correspondence with the ACHCSA and the ACPWA.

At least three (3) days prior to trenching, the work area was clearly identified with white marking paint and Underground Service Alert (USA) North was notified to identify any underground public utilities in the work area.

#### **4.2 Health & Safety Meeting**

Prior to trenching, a site safety meeting was held at a designated command post near the working area to review the Health and Safety Plan (HASP). Working hazards and emergency procedures were discussed at this meeting, including an explanation of the hazards of the known or suspected chemicals of interest as well as the location and route to the nearest hospital. All site personnel were in modified Level D personal protection equipment. A work area or “exclusion zone” was established with orange cones and/or barricades and warning tape to delineate the zone where hard hats and steel-toed shoes must be worn and where unauthorized personnel will not be allowed. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR was available on site at all times during the project.

#### **4.3 Soil Gas Probe Removal & HVDPE Conveyance Piping Lateral Construction**

The well boxes were removed and soil gas probes GP-3 and GP-4 were physically removed by pulling on the strong Kynar<sup>®</sup> polyvinylidene difluoride (PVDF) tubing by hand. The tubing with the 6-inch long stainless steel implants were successfully removed using this technique. The conveyance piping laterals were installed by AEI’s Construction Department under the direct supervision of an AEI project engineer from the Site Mitigation Department. Trench lines were marked out using 3/8inch nylon rope and orange marking paint. Trenching was performed using a DitchWitch (Model RT40) compact, ride-on trenching machine equipped with HT314 trencher and 64-inch wide backfill blade. The HT314 trencher is capable of cutting a 6 to 12-inch wide trench up to 52-inches deep with a 6 to 8-inch offset. Medium dense sands with some clay and silt were encountered during trenching. Native soil was placed next to the trench for possible reuse and excess soil was consolidation in a pre-determined location onsite.

The trenches were excavated to the maximum depth of approximately 52-inches below grade and leveled on the bottom with a 2-inch layer of fine-grained backfill sand. The immediate areas around the piping were backfilled with fine sand. The sand was raised about 4-inches above the pipe at which point native soils were placed and compacted in 8 to 12-inch lifts. Excess native soil was spread out and graded onsite.

Standard 4-inch diameter schedule 80 (SCH80) polyvinyl chloride (PVC) piping rated for full vacuum service was used for the HVDPE conveyance piping laterals. A clear flexible, spiral reinforced, 1-inch diameter PVC suction hoses also rated for full vacuum service were installed

inside the 4-inch SCH80 PVC laterals to be used for the stingers. The existing wellhead seals were reused and the stingers were tied into the existing suction hoses. The locations of the piping runs are shown on Figure 3.

## **5.0 HVDPE TECHNOLOGY AND PROCESS DESCRIPTION**

### **5.1 Technology Overview**

HVDPE is a proven and effective technology for a wide range of soil types and subsurface conditions. HVDPE is often also referred to as dual phase extraction (DPE), multi-phase extraction (MPE), two-phase extraction (TPE), and sometimes “bioslurping”. There are several variations of this technology, but a great majority of HVDPE systems use a water-sealed liquid-ring vacuum pump to simultaneously extract and recover LNAPL, groundwater, and soil gas through a single 1-inch diameter adjustable drop tube (also called a “stinger”) sealed within a 2 to 4-inch diameter extraction well. The application of high vacuum enhances soil vapor extraction (SVE) by lowering the water table and creating dewatered zones and exposing previously saturated soils to airflow. The airflow through the subsurface supplies oxygen needed to enhance in-situ aerobic biodegradation of fuel hydrocarbons, which is analogous to bioventing technology.

### **5.2 Site, System, & Process Description**

Light non-aqueous phase liquid (LNAPL), soil gas and groundwater are simultaneously extracted through a single 1-inch diameter drop tube currently installed in eight (8) monitoring/extracting wells (MW-1, MW-2, MW-5 to MW-7, and MW-10 to MW-12) using two (2) 15 horsepower water-sealed liquid ring pumps piped in parallel. These pumps can generate flows up to 140 cubic feet per minute (cfm) each (i.e., 280 cfm combined capacity) and high vacuums of up to 28 in-Hg, but normally operate in the range of 18 to 22 in-Hg.

The monitoring wellheads were modified for dual phase extraction by installing a 1-inch PVC ambient bleed air valve, two-hole cast iron wellhead pump seal, stinger and casing vacuum gauges, and 1-inch clear, flexible PVC stinger. The manifold and conveyance piping leading up to the manifold were constructed out of schedule 80 PVC. Recovered LNAPL, soil gas, and groundwater are separated by a knock-out tank. Because the LNAPL and other gasoline fuel hydrocarbons dissolved in the groundwater are volatilized under high vacuum (i.e., >20 in-Hg), an oil-water separator is not used. A progressive cavity pump transfers the groundwater from the knock-out tank to the top of the low-profile air stripping unit. Groundwater trickles-down through small holes in the air stripper trays, where nearly 99% of the remaining volatile fuel hydrocarbons are stripped from the groundwater. Groundwater is pumped from the air stripper reservoir to a single 1,000-pound activated carbon absorber, where its further treated and polished and then discharged to the onsite sanitary sewer under a wastewater discharge permit from the East Bay Municipal Utilities District (EBMUD).

The soil gas and off-gas from the air stripping unit is routed to a thermal/catalytic oxidizer operating in catalytic mode for direct thermal destruction. The catalytic oxidizer operates at 700 °F with a minimum destruction efficiency of 99% as required by permit. The treated off-gas is

discharge through a stack located 15 feet above grade under a Bay Area Air Quality Management District (BAAQMD) air quality permit.

A Dwyer<sup>®</sup> Instruments (Model No. DS-300) averaging pitot tube combined with a Magnehelic<sup>®</sup> differential pressure gauge is used to measure the well velocity and total velocity. The well velocity and total velocity are multiplied by the cross sectional area of the pipe (i.e., 0.0491 ft<sup>2</sup> for a 3-inch pipe) to obtain the actual flow rate. The difference between the well flow rate and total flow rate is the air stripper flow rate. All flow rates are corrected to standard temperature and pressure (i.e., 70°F and 1 atm or 29.92 in-Hg) using formulas provided by Dwyer<sup>®</sup>. The groundwater recovery volume is measured with a Neptune (Model T-10) cold water flow totalizer and recorded along with the equipment hour meter reading during each O&M visit. The flow totalizer and hour meter readings are used to estimate the average daily flow rate between sampling dates.

The field point names for the vapor influent sample ports are the monitoring well identification followed by the letter "S" (i.e., MW-1S, MW-2S, MW-5S, MW-6S, MW-7S and MW-10S to MW-12S). These sample ports are labeled and located along a common manifold inside the fenced equipment enclosure. Control valves are installed on each line to regulate the vacuum and flow. Clear sections of pipe are also installed on each line to observe the flow patterns and process streams.

The field point names for the vapor influent samples ports before dilution air, after dilution air, and from the air stripping unit and the stack gas effluent sample port are: PRED, POST, AS, and STACK.

The field point names for the water influent sample ports for the combined influent, after the air stripper, after the first carbon absorber, and after the last carbon absorber at the effluent: INF, POST-AS, POST-C1, and EFF.

The four (4) nested soil gas probes used for collecting soil gas samples and vacuum measurements are as follows: SG-1-5', SG-10', SG-2-5', SG-2-10', SG-3-5', SG-3-10', to SG-4-5' and SG-1-10'.

The location of the sample ports for the extraction wells are shown on Figure 3. The soil gas probe locations are shown on Figure 2.

## **6.0 SUMMARY OF MONITORING ACTIVITIES**

### **6.1 Quarterly Groundwater Monitoring**

The HVDPE system was shutdown on August 2, 2008, approximately three (3) days prior to groundwater monitoring event. On August 5, 2008, the water levels were measured and groundwater samples were collected from monitoring wells MW-1 through MW-13. The well locations are shown in Figure 2.

The well caps and stingers, where applicable, were removed and depths from the top of the well casings were measured with an electronic water level indicator prior to sampling. Wells with no measurable free product were purged of at least three well volumes of water with a submersible purge pump and sampled using disposable polyethylene bailers.

Temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured while purging the wells and the turbidity was visually noted. Once temperature, pH, specific conductivity stabilized after three consecutive readings, and following the recovery of water levels to at least 90% of the static level, a water sample was collected.

The groundwater samples were collected with disposable clear PVC bailers into 40-milliliter (mL) volatile organic analysis (VOA) vials and capped so that no head space or air bubbles were present within the sample containers. Samples were preserved on ice and transported under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (DHS Certification #1644). A total of thirteen (13) groundwater samples were submitted for chemical analysis for TPH-g by EPA Method 8015C and MBTEX by EPA Method 8021B.

## **6.2 Quarterly Soil Gas Monitoring for Vapor Intrusion Evaluation**

Soil gas sampling for vapor intrusion evaluation, including purging, leak testing, sampling, and sample analyses was performed in accordance with the most current “Advisory – Active Soil Gas Investigations” (ASGI), dated January 28, 2003.

The HVDPE system was shutdown on August 2, 2008, approximately two (2) weeks prior to soil gas monitoring event. On August 15, 2008, soil gas samples were collected from four (4) nested gas probes GP-1 through GP-4 at two depths of approximately 5 and 10 feet bgs. The soil gas probe locations are shown on Figure 2.

Prior to sampling, the soil gas probes were purged of three (3) volumes of dead air using a 30 to 60 milliliter (ml) plastic syringe connected to the purging/sampling manifold using a 3-way stopcock valve and small section of 3/16-inch diameter silicone tubing. Low to no-flow conditions were immediately detected in GP-4-10’ using the syringe purging method. Purging prior to sampling helped to ensure that a sufficient volume of ambient air was removed from the sampling point and that samples collected were representative of subsurface conditions. The purge volume was calculated by summing the volume of the sample tubing and annular space around the probe tip. One purge volume for the 5 and 10-foot probes are approximately 16 and 28 milliliters (mL), respectively. Three default purge volumes for the 5 and 10-foot probes are approximately 50 and 86 mL, respectively.

After the probes were adequately purged, soil gas samples were collected into 1-Liter laboratory-evacuated Summa canisters and labeled with unique identification. The purging and sampling manifold, supplied by McCampbell Analytical, Inc., was equipped with a critical orifice flow regulator and down-hole pressure (i.e., vacuum) gauge. The critical orifice device was designed maintain a constant sampling flow rate of approximately 200 milliliters per minute (mL/min) as recommended by the ASGI. However, please note that the actual flow rate varies depending upon

the down-hole pressure (i.e., vacuum). The soil gas sampling manifold was placed inline between the soil gas probe and Summa™ canister and used for both purging and sample collection. A new laboratory-certified clean sampling manifold was used at each sampling point. A field duplicate was not collected and a trip blank was not used during this sampling event. The presence of free moisture or water was encountered in GP-4-10', but sample collection was still possible.

The sampling manifolds and all valves and connections downstream of the Summa canisters were leak tested and confirmed to hold a vacuum for at least 5-minutes. Places where ambient air could enter the sampling train, including all Swagelok® valves and connections and the permanent bentonite seals around the soil gas probes, were also leak checked with a tracer compound. A 12-inch plastic leak test dome was placed over the sampling probe at the surface. A rag moistened with isopropyl alcohol (i.e., 2-propanol) was placed under the dome as a tracer compound. Cotton strips moistened with isopropyl alcohol were also placed around the Swagelok® valves and fittings. To avoid possible cross contamination, the isopropyl alcohol leak check compound was stored separately from other sampling tools in a zipper locking bag. This tracer compound is not known or suspected to be present in gasoline or anywhere in the subsurface onsite.

The soil gas samples were transported in Summa canisters under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (DHS No. 1644) on the day of collection. A total of eight (8) soil gas samples were analyzed for TPH-g by modified EPA Method TO-3 and for select volatile organic compounds (VOCs), including BTEX, MTBE, and tetrachloroethene (PCE) by modified EPA Method TO-15 along with the 2-propanol leak check compound. The detection limit for 2-propanol was at least 10 µg/L or 10,000 µg/m<sup>3</sup>. Laboratory procedures included appropriate quality assurance and quality control protocols, including method blanks and use of surrogates during sample analyses.

### **6.3 HVDPE System Process Monitoring**

#### **6.3.1 Routine Monitoring and Data Collection**

An AEI project engineer monitored the system using the remote monitoring system via email daily from the office. The system was also monitored and checked by a senior field technician weekly to biweekly and as needed to respond to system shutdowns. A Daily Field Report and O&M Field Logs were filled out during each site visit. Routine O&M visits ranged from approximately 2 to 4 hours per visit, depending upon the activities performed.

The following data was recorded on the Daily Field Report and/or O&M Field Log during each site visit:

- HVDPE System: current hour meter reading, PG&E meter reading (kilowatt-hours), system runtime (hours), system inlet vacuum (in-Hg), vacuum at the inlets of both liquid ring pumps (in-Hg), well velocity (fpm) and calculated well flow rate (cfm) by multiplying the well velocity by the cross-sectional area (ft<sup>2</sup>) of a 3-inch pipe, control valve initial and final positioning (% open), and cooling fan(s) status (on/off).

- HVDPE Wells: the stinger vacuum (in-Hg), casing vacuum (in-Hg), and drop tube depth (ft toc) data were collected monthly or as needed.
- Thermal/Catalytic Oxidizer: propane level (%), preheat controller temperature (°F), exhaust controller temperature (°F), total velocity (fpm) and calculated total flow rate (cfm) by multiplying the total velocity and by the cross-sectional area (ft<sup>2</sup>) of a 3-inch pipe.
- Air Stripper: variable frequency drive setting (Hz), outlet velocity (fpm) and calculated outlet flow rate (cfm) by subtracting the well flow rate from the total flow rate, air stripper tray backpressure (in-H<sub>2</sub>O), control valve positioning (% open).
- Activated Carbon Absorbers: inlet pressure (psig), outlet pressure (psig), flow totalizer reading (gallons), and whether or not the bag filter was change and/or carbon absorber backwashed.

### ***6.3.2 Influent & Effluent Vapor Monitoring***

Influent and effluent vapor samples were collected on July 30 and September 30, 2008. Vapor samples were not collected during the month of August because the system was shutdown pending the replacement of a faulty capacitor bank on rotary phase converter (RPC). The RPC is used to power the HVDPE equipment. The extraction well and other process sample ports were continuously purged and sampled with a Gast<sup>®</sup> (Model DOA-P707-FB) 1/3 horsepower diaphragm vacuum pressure pump, capable of up to 1.1 cfm free airflow and vacuums up to 25.5 in-Hg, using the “side-stream” purging and sampling method as described in Downey, et al., 2004 and Hinchee, et al., 1996. A 2-liter water separator device was used to collect vapor samples from the dual-phase air-water influent process stream.

TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> concentrations were continuously monitored with an RKI Instruments Eagle (Type 474-04) multi-gas detector using a sampling tee placed several feet downstream of the pump outlet. The hydrocarbon detector, which is a catalytic bead sensor, was calibrated with a 40% LEL (i.e., 4,400 ppmv) hexane gas standard. The methane, oxygen, and carbon dioxide detectors were also calibrated with the appropriate gas standards. Once the readings stabilized, they were recorded on the field data sheets and a vapor sample was collected into 1-liter Tedlar bag using the same sampling tee.

The Tedlar bags were stored in a cardboard box and transported under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (DHS Certification No. 1644) on the day of collection. The samples were analyzed for TPH-g by EPA Method 8015C and MBTEX by EPA Method 8021B.

### ***6.3.3 Influent & Effluent Water Monitoring***

Influent and effluent water samples were collected on July 30 and September 30, 2008. The process water sample ports were purge of approximately 1-Liter of water prior to sample

collection. Water was collected into three (3) 40-millileter (mL) volatile organic analysis (VOA) vials, or as required by the analysis, and capped so that no head space or air bubbles were present within the sample containers.

A total of three (3) water samples were collected and transported in a pre-chilled cooler on a mixture of water and ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (DHS Certification #1644) on the day of collection. The samples were analyzed for TPH-g by EPA Method 8015C and MBTEX by EPA Method 8021B.

Additionally, as required by EBMUD semi-annually, an effluent sample (i.e., Sample ID "EFF") was collected on September 23, 2008 and analyzed for Total Oil and Grease Hydrocarbon by EPA Method 1664 HEM-SGT with silica gel cleanup.

#### ***6.3.4 Soil Gas Composition & Vacuum Influence Monitoring***

The soil gas probes were screened in the field for TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> and vacuum influence was measured on August 15, 2008.

The vacuum influence was measured with a set of Magnehelic differential pressure gauges and recorded first. A 3/16-inch inside diameter clear vinyl or equivalent tubing was used to connect the Magnehelic<sup>®</sup> gage to the plug valve and soil gas probe. The following pressure ranges in inches of water were normally available: 0-0.2", 0-1", 0-5", 0-10", 0-20", 0-50", 0-100", and 0-150".

Then the soil gas probes were continuously purged and sampled with a Geotech (Model Geopump II) peristaltic pump, capable of vacuums up to 25 in-Hg, using the "side-stream" purging and sampling method as described in Downey, et al., 2004 and Hinchee, et al., 1996.

TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> concentrations were continuously monitored with an RKI Instruments Eagle (Type 474-04) multi-gas detector using a sampling tee placed several feet downstream of the pump outlet. The hydrocarbon detector, which is a catalytic bead sensor, was calibrated with a 40% LEL (i.e., 4,400 ppmv) hexane gas standard. The methane, oxygen, and carbon dioxide detectors were also calibrated with the appropriate gas standards. Once the readings stabilized, they were recorded on the field data sheets. Vapor samples were not collected into 1-liter tedlar bags for laboratory analysis.

## **6.4 HVDPE System Operations & Maintenance**

### **6.4.1 Routine Maintenance**

Routine maintenance performed during this quarter included:

- Performed visual inspections of all major system components, including checking for signs of leaks, physical wear, and/or damage during each site visit.
- Checked the cooling blower filter, dilution air inlet filter, and air stripper blower filter. No filter changes were required during this quarter. However, filter changes will likely be required during the next quarter.
- The PV-1000 (1,000-pound) liquid-phase carbon absorber was not backwashed during this quarter.
- No other routine maintenance was performed during this quarter.

### **6.4.2 Non-Routine Maintenance**

Non-routine maintenance performed during this quarter included:

- On July 29, 2007 the wiring associated with Liquid Ring Pump #1 (LRP #1) was inspected because it continued to trip the thermal overload relay on the motor starter. The setting on the thermal overload relay was 50 amps. The wiring from the control panel to the junction box of the motor for LRP#1 was visually inspected. Burn marks and odors typically associated with electrical shorts were noted inside the junction box of the motor for LRP#1. Furthermore, the wire leads running to the stator and a small section of the stator was inspected and a shorted circuit was identified. Wiring of insufficient capacity was also identified inside the control panel. The air-cooled heat exchanger was cleaned and operation was switched back to Liquid Ring Pump #2 (LRP #2) pending repairs to LRP#1 and upgrades to the wiring inside the control panel.
- On August 2, 2008, the HVDPE system shutdown because LRP#2 ran out of seal water. The system was not restarted because quarterly groundwater event (Third Quarter, 2008) was scheduled for later that week.
- On August 15, 2008, the separator/reservoir was re-filled with tap water after the soil gas monitoring event (Third Quarter, 2008) was completed.
- On August 18, 2008, the HVDPE shutdown due to a possible power outage in the area.
- On August 21, 2008, AEI mobilized to the site to restart the HVDPE system. Upon arriving at the site the RPC was not running and the main breaker had tripped. An AEI technician



attempted to restart the RPC, but it sounded very “sluggish” and the breaker tripped again. The technical support division of Kay Industries, manufacturer of the RPC, was contacted for trouble-shooting. After a few diagnostic tests, it was determined that a faulty capacitor bank had caused the problem and a new set of capacitors would be sent under warranty.

- On September 8, 2008, twenty (20) capacitors (4 banks with 5 capacitors per bank) were replaced, several diagnostic checks were performed, the RPC was energized, and the HVDPE was restarted.
- On September 20, 2008, the HVDPE system shutdown due to a low gas pressure alarm and/or flame monitoring system alarm because a propane delivery was missed the pervious Friday. This was confirmed by a brief site visit on September 23, 2008. A propane delivery was scheduled and the system was restarted on September 26, 2008.
- No other none-routine maintenance was performed during this quarter.

### **6.4.3 System Modifications**

System modifications completed during this quarter included:

- Three (3) monitoring wells (MW-10, 11, and 12) being used for dual phase extraction were modified as described in Section 4.0 so that these well could still be used while a building was being constructed at 708 Alice Street.
- The system was operated to mainly focus on extraction from offsite wells MW-10, MW-11, and MW-12 and at times on MW-2, MW-6, and MW-7.
- No other major system modifications were performed during this quarter.

## **7.0 RESULTS & CONCLUSIONS**

### **7.1 Apparent LNAPL Thickness, Groundwater Elevations, and Hydraulic Gradient**

The results of the apparent LNAPL thickness measurements, groundwater elevations, and hydraulic gradient for this monitoring episode are summarized below:

- LNAPL was not encountered, nor was a hydrocarbon sheen noted, in any of the monitoring wells, although elevated concentrations of dissolved hydrocarbons, such as TPH-g, BTEX, and MTBE, remain onsite and offsite.
- Not including the recently installed wells MW-8, MW-9, and MW-13, groundwater elevations ranged from approximately 14.41 (MW-12) to 15.91 (MW-5) feet above mean sea level (msl). The elevations of MW-8, MW-9, and MW-13 relative to msl have not been

surveyed pending the installation of two (2) additional monitoring wells (MW-15 and MW-16) in a parking lane along the southeastern side of 7<sup>th</sup> Street and installation of one (1) monitoring well (MW-14) along Alice Street.

- The groundwater elevations have been influenced by the HVDPE groundwater extraction activities. Therefore, groundwater elevation contours have not been included on Figure 4.
- The normal historical groundwater flow direction has been predominantly to the south with a hydraulic gradient of approximately 0.010 ft/ft.

The historic and current groundwater elevation data is summarized in Table 1 with the current data shown on Figure 4. A summary of the current and historic average groundwater elevations and flow directions are presented in Table 2.

## 7.2 Groundwater Sample Analytical Data

The analytical results for the groundwater sample collected for this monitoring episode are summarized below:

- The highest concentrations of TPH-g were detected in MW-1 at 110,000 µg/L, MW-9 at 42,000 µg/L, and MW-6 at 33,000 µg/L. Furthermore, the concentration of TPH-g and BTEX in MW-1 rebounded significantly because extraction was not performed on this well for most of the Third Quarter, 2008.
- The highest concentrations of benzene were detected in MW-9 at 13,000 µg/L, MW-11 at 1,800 µg/L, and MW-7 at 1,100 µg/L.
- The highest concentration of MTBE was detected in MW-13 at 3,400µg/L and the second highest concentration was detected in MW-11 at 1,100 µg/L.
- Elevated concentrations of TPH-g were detected in source area wells MW-1 and MW-6 and moderate concentrations were detected in MW-5, MW-7, MW-10, MW-11, and MW-12
- Lower, but significant concentrations of TPH-g was detected in MW-2 at 520 µg/L.
- Very low to almost none-detectable levels of TPH-g, BTEX, and MTBE were detected in MW-3, MW-4, and MW-8. Very low to almost none-detectable levels of TPH-g and BTEX were detected in MW-13.
- LNAPL of any apparent measurable thickness has not been detected in MW-1, MW-6, and MW-7 since May of 2007.
- Dissolved hydrocarbons have been significantly reduced (by at least one order of magnitude) onsite and offsite by operating the HVDPE system.

- It is unknown at this time if the elevated concentrations of TPH-g and BTEX in MW-9 will be reduced by operating the HVDPE system.

A summary of the current and historic groundwater analytical data is summarized in Table 3 with current data shown on Figure 5. Refer to Appendix A for the monitoring well field sampling forms. The laboratory analytical report with chain of custody and quality assurance/quality control documentation is included in Appendix C.

### **7.3 Soil Vapor Sample Analytical Data**

The analytical results for the soil gas samples collected for the evaluation of vapor intrusion potential for this monitoring episode are summarized below:

- TPH-g was not detected at or above the laboratory reporting limit of 1,800  $\mu\text{g}/\text{m}^3$  in all samples analyzed.
- Benzene was not detected at or above the laboratory reporting limit of 6.5  $\mu\text{g}/\text{m}^3$  in all samples analyzed.
- PCE was not detected at or above the laboratory reporting limit of 14  $\mu\text{g}/\text{m}^3$  in all samples analyzed, except for GP-2-5' at 39  $\mu\text{g}/\text{m}^3$  and GP-2-10' at 48  $\mu\text{g}/\text{m}^3$ , which is still below the ESLs for residential land use.
- 2-propanol leak check compound was not detected at or above the laboratory reporting limit of 25  $\mu\text{g}/\text{m}^3$  in all samples analyzed.
- Although the HVDPE was shutdown two (2) prior to soil gas monitoring, significant short-term rebound has not occurred.
- Soil gas sample analytical data collected one year prior to and since the installation and startup of the HVDPE system did not indicate a potential vapor intrusion concern onsite or offsite.

The historic and current soil vapor sample analytical data is summarized in Table 4 with current data shown on Figure 6. Refer to Appendix B for the soil gas field sampling forms. The laboratory analytical report with chain of custody and quality assurance/quality control documentation is included in Appendix C.

## 7.4 HVDPE System Process Monitoring

### 7.4.1 Influent & Effluent Vapor Sample Analytical Data

The analytical results of the monthly influent and effluent vapor samples are summarized below:

- The highest concentrations of TPH-g were detected in MW-5S at 2,000 ppmv, MW-7S at 2,800 ppmv, MW-10S at 1,600 ppmv, and MW-11S at 1,600 ppmv. The highest levels of CO<sub>2</sub> were also detected in these wells at concentrations ranging from 0.2% in MW-11S to 5.9% in MW-7S.
- Likewise, the highest concentrations of benzene were also detected in MW-5S at 27 ppmv, MW-7S at 57 ppmv, MW-10S at 16 ppmv, and MW-11S at 22 ppmv.
- Moderate to low concentrations of TPH-g were detected in MW-1S at 65 ppmv, MW-6S at 640 ppmv, and MW-12S at 450 ppmv. Elevated levels of CO<sub>2</sub> were also detected in these wells.
- The pre-dilution (PRED) influent concentrations of TPH-g ranged from 1,100 to 2,200 ppmv.
- The air stripping system effluent concentrations of TPH-g ranged from non-detect (ND) to 41 ppmv.
- Sampling the post-dilution (POSTD) process sample port was discontinued during this quarter because it does not provide any additional useful data above of beyond what has already been collected.
- TPH-g, BTEX, and MTBE were not detected in the STACK sample at or above the laboratory reporting limit of 7 ppmv, except for a trace amount (27 ppmv) on July 30, 2008.

A summary of the historic and current vapor influent and effluent sample analytical and field screening data is presented in Table 5. The laboratory analytical report with chain of custody and quality assurance/quality control documentation is included in Appendix C.

### 7.4.2 Influent & Effluent Water Sample Analytical Data

The results of the monthly influent and effluent water samples are summarized below:

- The concentrations of TPH-g and benzene detected in the combined water influent (i.e., Sample ID “INF”) ranged from 6,100 to 9,400 µg/L and 160 to 240 µg/L, respectively.
- The concentrations of TPH-g and benzene detected in the water effluent from the air stripper (i.e., Sample ID “POST-AS”) ranged from 94 to 130 µg/L and 0.85 to 0.85 µg/L, respectively.

- The average air stripper removal efficiency during this quarter was approximately 98.5%.
- TPH-g and BTEX were not detected in the effluent (i.e., Sample ID “EFF”) at or above the laboratory reporting limits.
- MTBE, which has a high solubility and is difficult to adsorb, was detected in the effluent at a concentration of 18 µg/L. MTBE is not regulated by EBMUD wastewater discharge permit.

A summary of the historic and current water influent/effluent sample analytical data is presented in Table 6. The laboratory analytical report with chain of custody and quality assurance/quality control documentation is included in Appendix C.

### ***7.4.3 Influent Well Vapor and Water Flow Rates***

The total well influent vapor velocity ranged from approximately 1,600 to 2,000 feet per minute (fpm) and the total well influent flow rate ranged from 79 to 98 standard cubic feet per minute (scfm). Average groundwater extraction rates ranged from 769 to 2,449 gallons per day or 0.53 to 1.7 gallons per minute (gpm). Approximately 72,160 gallons of groundwater was recovered, treated, and discharged to the sanitary sewer between June 26 and September 30, 2008. A total of 1,111,770 gallons have been recovered and treated since startup in June of 2007.

A summary of the historic and current well vapor and water flow rates is presented in Tables 9 and 12. The laboratory analytical report with chain of custody and quality assurance/quality control documentation is included in Appendix C.

### ***7.4.4 Mass Removal Rates***

Short-term and long-term vapor phase and dissolved phase mass removal rates in pounds per day (lbs/day) and gallons per day (gpd) were estimated using TPH-g concentrations based on lab data and the actual system runtime between sampling dates.

The vapor phase mass removal rates ranged from approximately 43 to 69 pounds per day (lbs/day) with an overall average of approximately 56 lbs/day during this reporting period. Approximately 2,888 pounds or 481 gallons of gasoline in the vapor phase was recovered and treated between June 26 and September 30, 2008. Approximately 23,304 pounds or 3,884 gallons of vapor phase gasoline have been removed since startup in June of 2007.

Although insignificant when compared with the vapor phase mass removal data, the dissolved phase mass removal rates ranged from approximately 0.06 to 0.12 lbs/day with an overall average of approximately 0.09 lbs/day. Approximately 4.3 pounds or 0.71 gallons of gasoline in the dissolved phase was recovered and treated between June 26 and September 30, 2008. Approximately 122 pounds or 20 gallons of dissolved phase gasoline has been removed since startup.

A summary of the historic and current vapor phase mass removal rates with assumptions, unit conversions, and sample calculations are presented in Tables 9 and 10 and shown on Figure 9. The dissolve phase mass removal rates are presented in Table 12. A cumulative vapor phase mass removal graph is shown on Figure 10.

#### ***7.4.5 Soil Gas Composition and Vacuum Influence***

The results of the TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> field screening data and vacuum influence measurements collected on August 15, 2008 are summarized below:

- Screening the soil gas probes for TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> with the RKI Eagle gas detector and collecting vacuum influence measurements was moved from monthly to quarterly. Soil gas probes GP-1 to GP-4 were screened immediately after the soil gas sampling for vapor intrusion evaluation.
- Although the purge vacuum was relatively high (>50 in-H<sub>2</sub>O) purging and sampling GP-4-10' was possible during this quarter.
- Concentrations of total volatile hydrocarbons (TVH) were not detected in any of the soil gas probes at or above the detection limit of 5 ppmv.
- The concentration of O<sub>2</sub> in all probes sampled at 5 and 10-feet bgs was nearly 20.9% even after the HVDPE system was shutdown for nearly two (2) weeks.
- The concentrations of CO<sub>2</sub> in all probes sampled ranged from approximately 0.0% to 0.1%.
- Significant vacuum influence (i.e., greater than 0.1 inches of water – Hinchee, R.E., et al., 1996 and others) was not measured in GP-1 through GP-4 at 10-feet bgs due to the fact that the HVDPE was shutdown.

A summary of the historic and current TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> soil gas field screening data and vacuum influence measurements are presented in Table 8.

## 8.0 SUMMARY & PLANNED ACTIVITIES

This report presented the findings of the Third Quarter, 2008 groundwater monitoring and soil gas sampling events and included a discussion of the field activities and results of the HVDPE system operations and maintenance and process monitoring. This report also discussed decommissioning of soil gas probes GP-3 and GP-4 and the installation of the HVPDE conveyance piping laterals at 708 Alice Street as approved by the ACHCSA and ACPWA. The piping laterals were installed so that monitoring wells MW-10, 11, and 12 could continue to be used for dual phase extraction while the property was being developed.

The main results of this monitoring episode are summarized below:

- Elevated concentrations of TPH-g, BTEX, and MTBE were detected in MW-9. Very low to nearly non-detectable concentrations of TPH-g and BTEX were detected in MW-8 and MW-13. MTBE was not detected in MW-8; however, high concentrations of MTBE were detected in MW-13.
- Additional monitoring wells will need to be installed on the southwest side of 7<sup>th</sup> Street to complete the lateral plume delineation.
- The results of this groundwater and soil gas monitoring event are generally consistent with previous episodes with a notable decrease in groundwater table elevation, which is most probably a result of the groundwater extraction activities onsite and offsite.
- LNAPL has not been detected since the HVDPE system was installed and started up in June of 2007, although elevated dissolved phase concentrations remain onsite and offsite.
- Decreases in the concentrations of dissolved phase hydrocarbons in several wells onsite and offsite (most notably MW-2, 5, 7, 10, 11, and 12) are the result of ongoing HVDPE remediation activities. The concentrations of dissolved phase hydrocarbons rebounded significantly in MW-1 because this well was shutdown for most of the Third Quarter, 2008.
- The influent vapor concentrations of hydrocarbons are within the range for catalytic oxidation, but may be still be too high for activated carbon to be a more cost-effective treatment option.
- Nearly ambient concentrations of oxygen indicate the HVDPE is fully oxygenating the soils in the vadose zone, which can support and enhance aerobic biodegradation of hydrocarbons in the subsurface.
- TPH-g, BTEX, MTBE, and PCE were not detected at or above the laboratory reporting limits, except for in GP-2 or the residential Environmental Screening Levels (ESLs) during this quarter although the HVDPE system was shutdown for nearly two (2) weeks prior to sampling or since the HVDPE was installed and started up.

The following activities and system modifications are planned for the next quarter:

- The Fourth Quarter, 2008 groundwater monitoring event was completed on November 7, 2008. Soil gas sampling was suspended as approved by the ACHCSA in a recent technical review letter dated October 3, 2008.
- The recently installed monitoring wells MW-8, MW-9, and MW-13 will continue to be sampled quarterly and analyzed for TPH-g by EPA Method 8015C and MBTEX by EPA Method 8021B.
- Due to the elevated reporting limit for MTBE in MW-9, AEI recommends testing this well for MTBE by EPA Method 8260B also during the Fourth Quarter, 2008 groundwater monitoring event.
- Continue operation of the HVPDE system, including weekly system checks and monthly O&M and process monitoring, evaluate the system performance, and conduct air and water discharge compliance sampling and reporting as required by permit.
- Continue to screen the soil gas probes for TVH, CH<sub>4</sub>, O<sub>2</sub>, and CO<sub>2</sub> with the RKI Eagle gas detector on a quarterly rather than monthly basis. The soil gas probes will be screened according to the methods described in Downey, et al., 2004.
- Continue operation of the thermal oxidizer in catalytic mode to reduce auxiliary fuel consumption. As the influent vapor concentrations decline over the next quarter of system operation, evaluate (as applicable) if and when the system should be shutdown for rebound testing or operated on an intermittent schedule.
- Finish permitting with the City of Oakland and ACPWA for the installation of two (2) additional monitoring wells (MW-15 and MW-16) in the parking lane on the northwest side of 7<sup>th</sup> Street and one (1) monitoring well (MW-14) in a parking lane along Alice Street as discussed in AEI's "Site Monitoring Report (Second Quarter, 2008)", dated August 1, 2008. If permits can be obtained and the wells installed, developed, and sampled within a reasonable period of time, the results will be incorporated into the next Site Monitoring Report as requested by the ACHCSA in a technical review letter dated October 3, 2008.
- Because the motor stator on LRP#1 short-circuited during the last quarter, operation was switched to LRP#2. LRP#1 will be removed during the next quarter and the 15 horsepower electric motor will be sent to an electric motor repair facility to have to motor rewind.
- While there is no room to reinstall soil gas probe GP-3 at 708 Alice Street, soil gas probe GP-4 will be reinstalled once the building construction activities have been completed, most likely during the First or Second Quarters of 2009.



## 9.0 REFERENCES

Department of Toxic Substances Control (DTSC) & Los Angeles Regional Water Quality Control Board, 2003. "Advisory – Active Soil Gas Investigations", issued January 28, 2003.

Downey, D., Miller, R.N., and Dragoo, T., 2004. "Procedures for Conducting Bioventing Pilot Tests and Long-Term Monitoring of Bioventing Systems", prepared for the United States Air Force Center for Environmental Excellence by Parsons, Inc, Denver, Colorado.

DTSC, 2004. "Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air", Interim-Final, California Environmental Protection Agency, Sacramento, California, issued December 15, 2004, revised February 7, 2005.

Graymer, R.W., 2000. "Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California", U.S. Geologic Survey, Miscellaneous Field Studies MF2342, Online Version 1.0, includes 1 geologic map and 33 page pamphlet.

Helley, E.J. and Graymer, R.W., 1997. "Quaternary Geology of Alameda County, and parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin counties, California: A Digital Database", U.S. Geological Survey, Open-File Report 97-97, includes 1 geologic map, 1 map explanation sheet, and 9 page discussion booklet.

Hinchee, R.E., et al., 1992. "Test Plan and Technical Protocol for a Field Treatability Test for Bioventing", prepared for United States Air Force Center for Environmental Excellence by the Battelle, Columbus, Ohio.

Miller, R.N., et al., 1995. "Test Plan and Technical Protocol for a Field Treatability Test for POL Free Product Recovery – Evaluating the Feasibility of Traditional and Bioslurping Technologies", prepared for the United States Air Force Center for Environmental Excellence by the Battelle, Columbus, Ohio.

Norfleet Consultants, 1998. "Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, California", prepared for the Friends of the San Francisco Estuary, P.O. Box 791, Oakland, California, and dated June 15, 1998.

Place, M.C., Coonfare, C.T., Chen, A., Hoepfel, R.E., and Rosansky, S.H., 2001. "Principles and Practices of Bioslurping", Battelle Press, Columbus, Ohio


United States Army Core of Engineers, 1999. "Multi-Phase Extraction Engineer Manual", EM 1110-1-4010, Washington, DC.

## 10.0 REPORT LIMITATIONS AND SIGNATURES

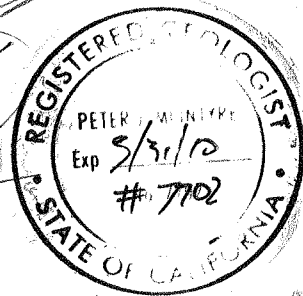
This report presents a summary of work completed by AEI Consultants, including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide requested information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices in the environmental engineering and geology fields that existed at the time and location of the work.

Should you have any questions or comments, or need any additional information, please contact Mr. Bradford (925) 944-2899, ext. 148 or Mr. McIntyre at (925) 944-2899, ext. 104.

Sincerely,  
**AEI Consultants**

  
Richard J. Bradford  
Project Engineer

  
Peter J. McIntyre, PG  
Senior Project Manager



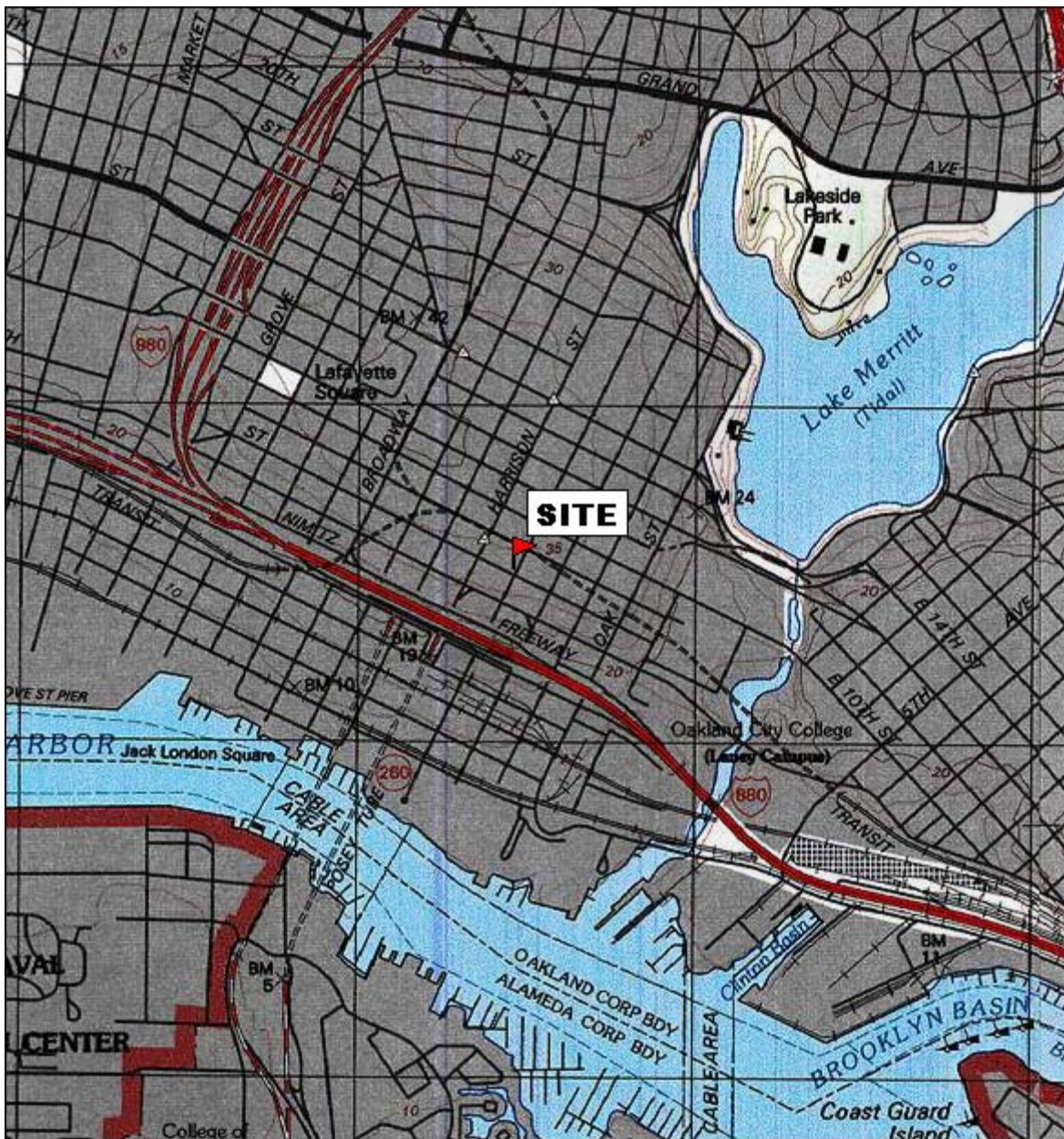
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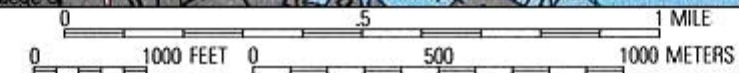
Attn. Mr. Jerry Wickham (electronic)  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

SWRCB's GeoTracker Information System (electronic)

## **FIGURES**



TN  $\star$  MN  
15 1/4°



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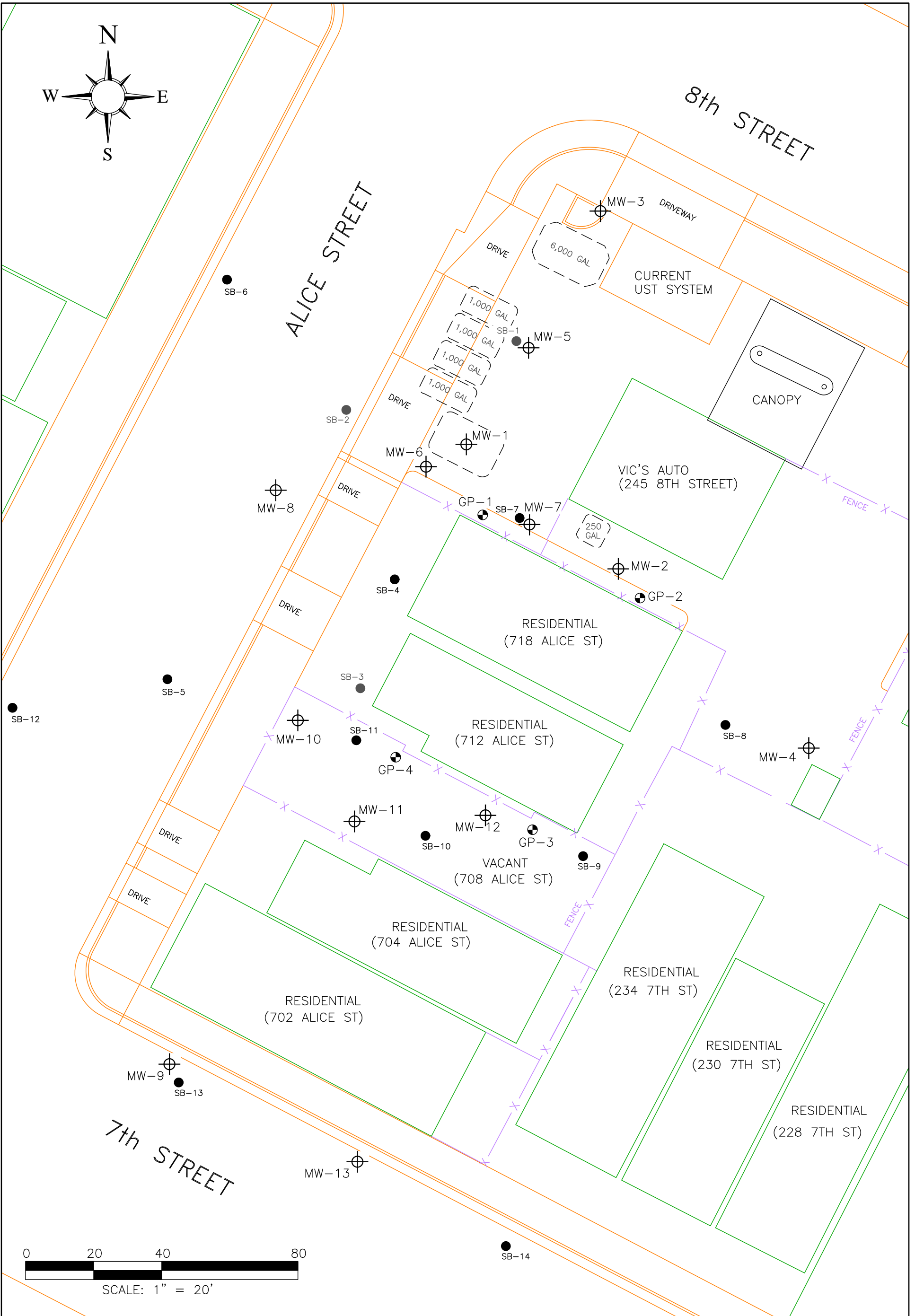
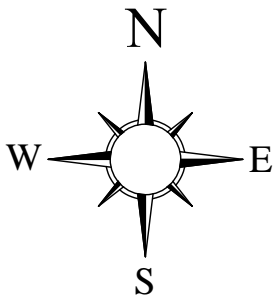
## AEI CONSULTANTS

2500 CAMINO DIABLO BLVD, SUITE 200, WALNUT CREEK, CA





### SITE LOCATION MAP

245 8<sup>th</sup> STREET  
OAKLAND, CALIFORNIA

**FIGURE 1**  
PROJECT No. 116907



**LEGEND**

-  MONITORING WELL
-  SOIL BORING (8/9/96)
-  SOIL BORING (04/02 & 03/03)
-  SOIL GAS PROBE

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 REVISED BY RJB 11-10-08

  
 FORMER UST  
 LOCATION

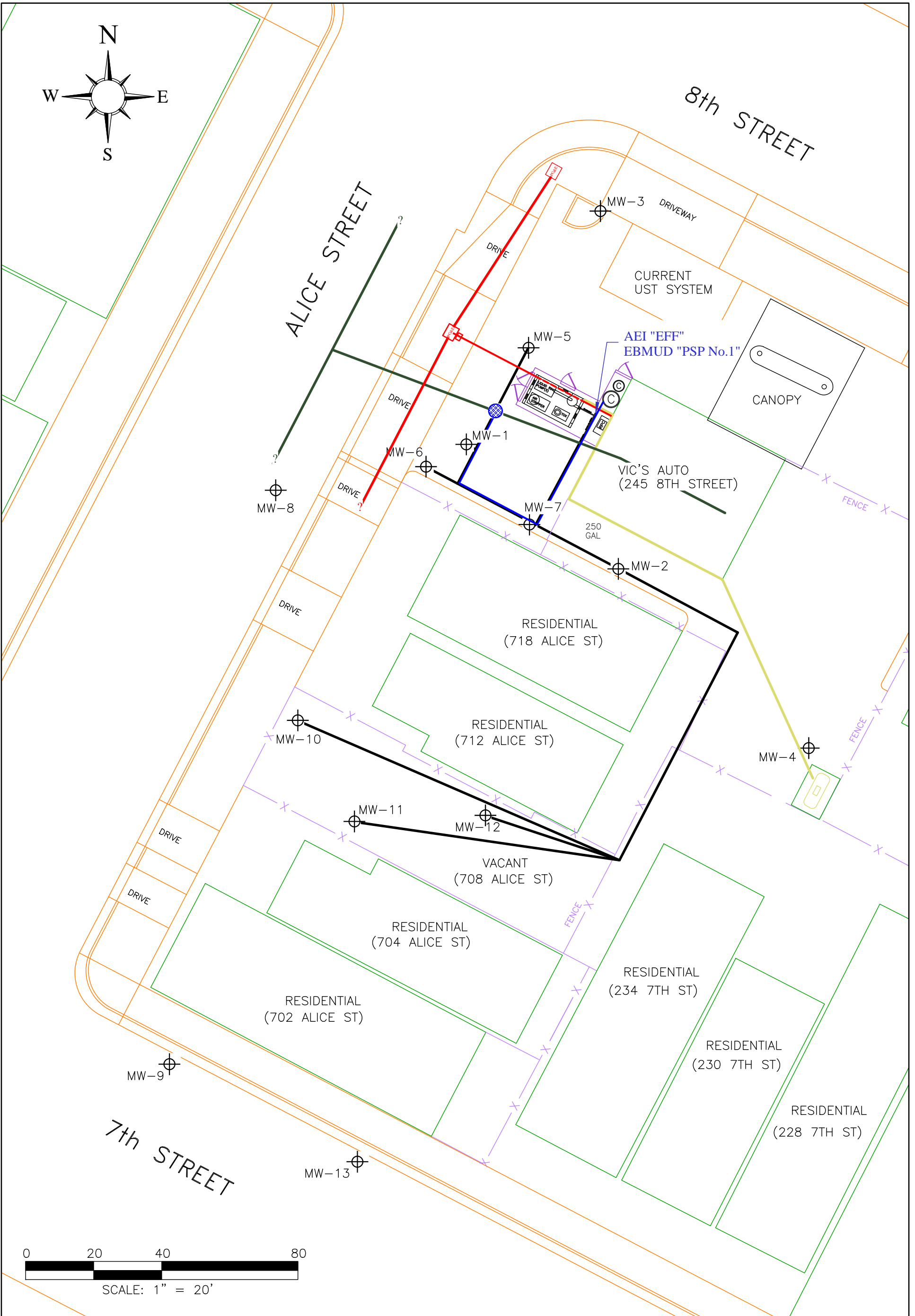
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 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

**SITE PLAN**

245 8TH STREET  
 OAKLAND, CALIFORNIA

**FIGURE 2**  
 PROJECT NO. 116907





**LEGEND**

- ⊕ MONITORING WELL
- SOIL BORING (8/9/96)
- SOIL BORING (04/02 & 03/03)
- ⊕ SOIL GAS PROBE
- ⊕ MONITORING STRUCTURE
- HVHPE CONVEYANCE PIPING (~18 - 24" BGS)
- WATER DISCHARGE (~24" BGS)
- SANITARY SEWER (~36 - 48" BGS)
- TEMPORARY POWER SERVICE (~24" BGS)
- PROPANE LINE (~18 - 24" BGS)

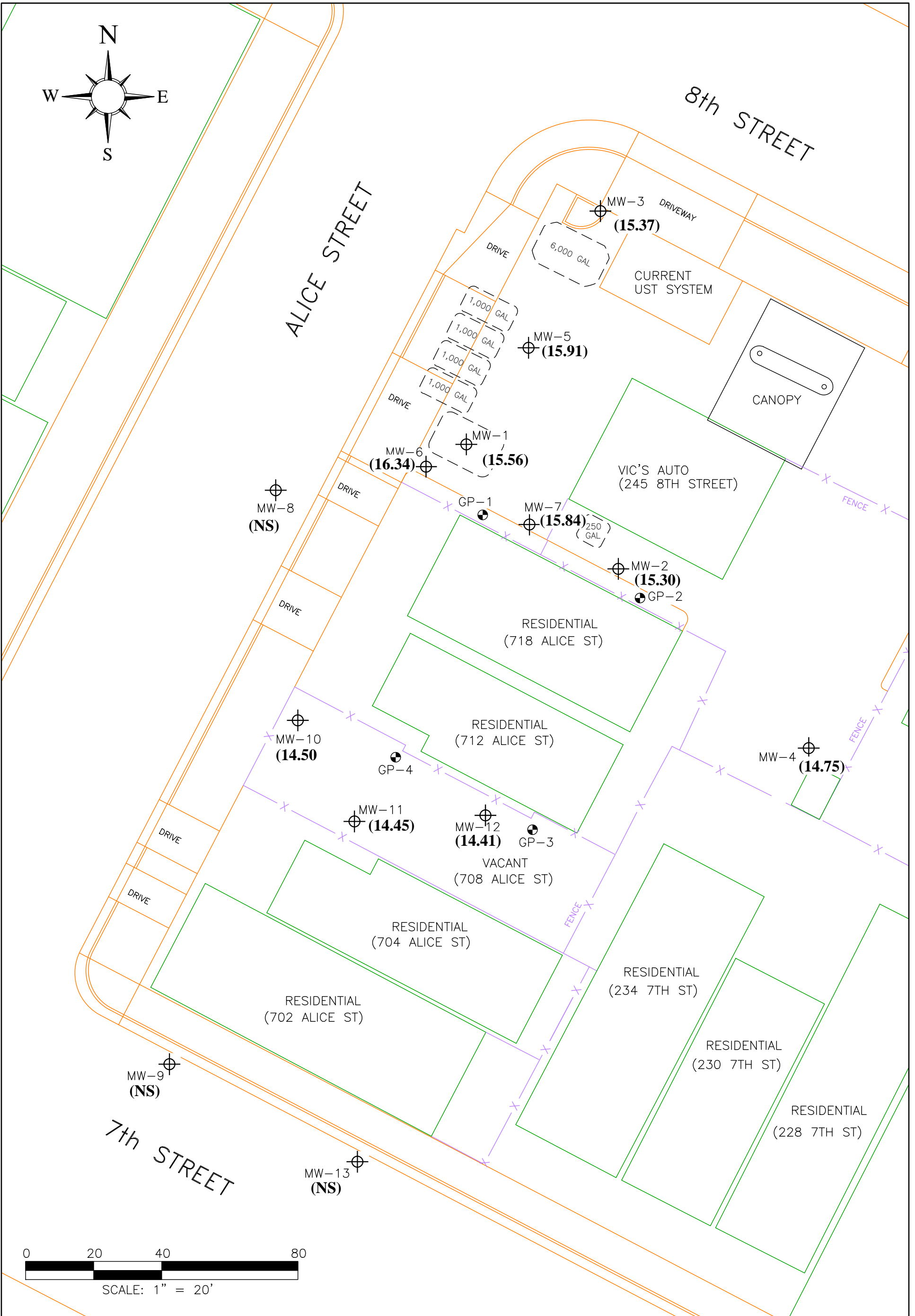
DRAFTED BY RJB 10-01-07  
 REVISED BY RJB 11-10-08

**AEI CONSULTANTS**  
 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

**SYSTEME LAYOUT PLAN**

245 8TH STREET  
 OAKLAND, CALIFORNIA

**FIGURE 3**  
 PROJECT NO. 116907



**LEGEND**

- ⊕ MONITORING WELL
- SOIL BORING (8/9/96)
- SOIL BORING (04/02 & 03/03)
- ⊕ SOIL GAS PROBE

MW-1  
**(15.00)** = feet above mean sea level  
 Contour Interval = n/a  
 Contours plotted with Surfer V.7.0  
 NS = well has not been surveyed  
 System was shutdown 2 days prior to monitoring

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 REVISED BY RJB 06-10-08



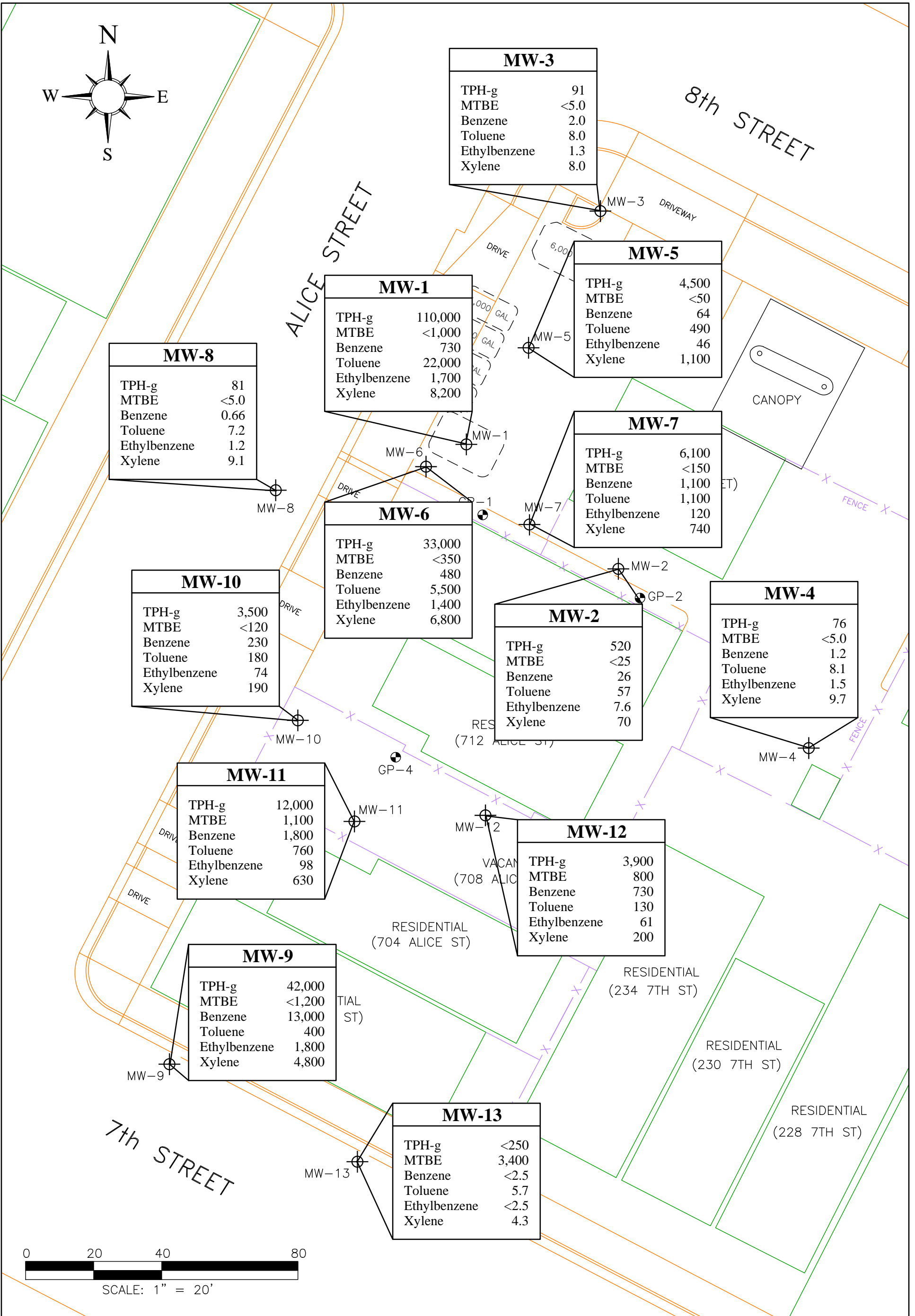
**AEI CONSULTANTS**

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

**GROUNDWATER ELEVATION DATA (08/05/08)**

245 8TH STREET  
 OAKLAND, CALIFORNIA

**FIGURE 4**  
 PROJECT NO. 116907



MW-3	
TPH-g	91
MTBE	<5.0
Benzene	2.0
Toluene	8.0
Ethylbenzene	1.3
Xylene	8.0

MW-1	
TPH-g	110,000
MTBE	<1,000
Benzene	730
Toluene	22,000
Ethylbenzene	1,700
Xylene	8,200

MW-5	
TPH-g	4,500
MTBE	<50
Benzene	64
Toluene	490
Ethylbenzene	46
Xylene	1,100

MW-8	
TPH-g	81
MTBE	<5.0
Benzene	0.66
Toluene	7.2
Ethylbenzene	1.2
Xylene	9.1

MW-7	
TPH-g	6,100
MTBE	<150
Benzene	1,100
Toluene	1,100
Ethylbenzene	120
Xylene	740

MW-6	
TPH-g	33,000
MTBE	<350
Benzene	480
Toluene	5,500
Ethylbenzene	1,400
Xylene	6,800

MW-10	
TPH-g	3,500
MTBE	<120
Benzene	230
Toluene	180
Ethylbenzene	74
Xylene	190

MW-2	
TPH-g	520
MTBE	<25
Benzene	26
Toluene	57
Ethylbenzene	7.6
Xylene	70

MW-4	
TPH-g	76
MTBE	<5.0
Benzene	1.2
Toluene	8.1
Ethylbenzene	1.5
Xylene	9.7

MW-11	
TPH-g	12,000
MTBE	1,100
Benzene	1,800
Toluene	760
Ethylbenzene	98
Xylene	630

MW-12	
TPH-g	3,900
MTBE	800
Benzene	730
Toluene	130
Ethylbenzene	61
Xylene	200

MW-9	
TPH-g	42,000
MTBE	<1,200
Benzene	13,000
Toluene	400
Ethylbenzene	1,800
Xylene	4,800

MW-13	
TPH-g	<250
MTBE	3,400
Benzene	<2.5
Toluene	5.7
Ethylbenzene	<2.5
Xylene	4.3

**LEGEND**

- ⊕ MONITORING WELL
- SOIL BORING (8/9/96)
- SOIL BORING (04/02 & 03/03)
- ⊕ SOIL GAS PROBE

All groundwater sample analytical data in micrograms per liter (ug/L) or ppb  
 TPH-g = Total Petroleum Hydrocarbons as gasoline  
 MTBE = Methyl tertiary-butyl ether  
 NS/FP= not sampled / free product present  
 \*Note: HVDPE system was shutdown approximately 3 days prior to sampling

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 REVISED BY RJB 11-10-08



FORMER UST LOCATION

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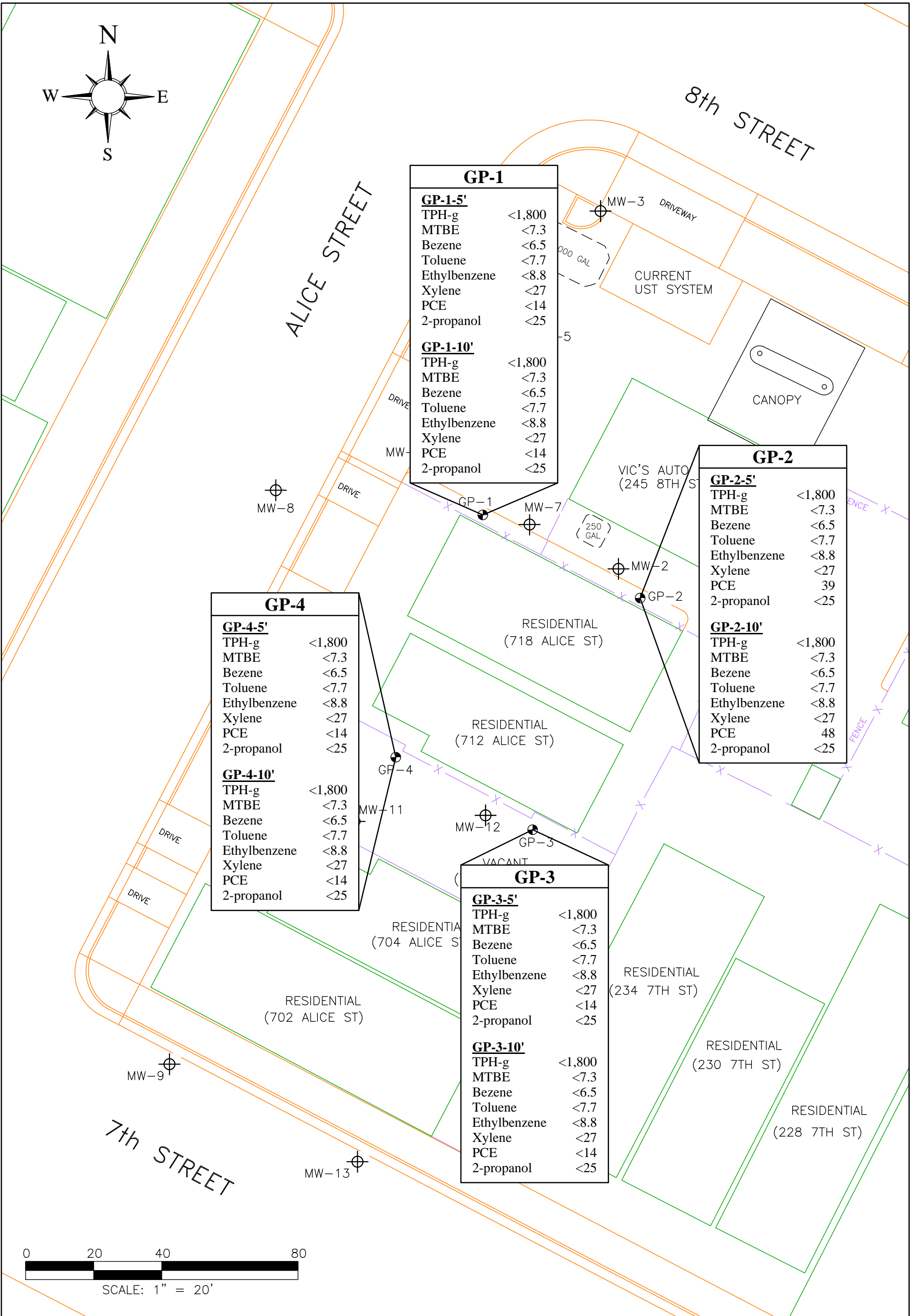
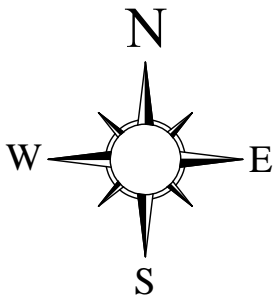
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

**GROUNDWATER SAMPLE ANALYTICAL DATA (08/05/08)**

245 8TH STREET  
 OAKLAND, CALIFORNIA

**FIGURE 5**  
 PROJECT NO. 116907



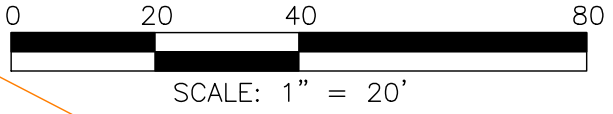


GP-1	
<b>GP-1-5'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25
<b>GP-1-10'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25

GP-2	
<b>GP-2-5'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	39
2-propanol	<25
<b>GP-2-10'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	48
2-propanol	<25

GP-4	
<b>GP-4-5'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25
<b>GP-4-10'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25

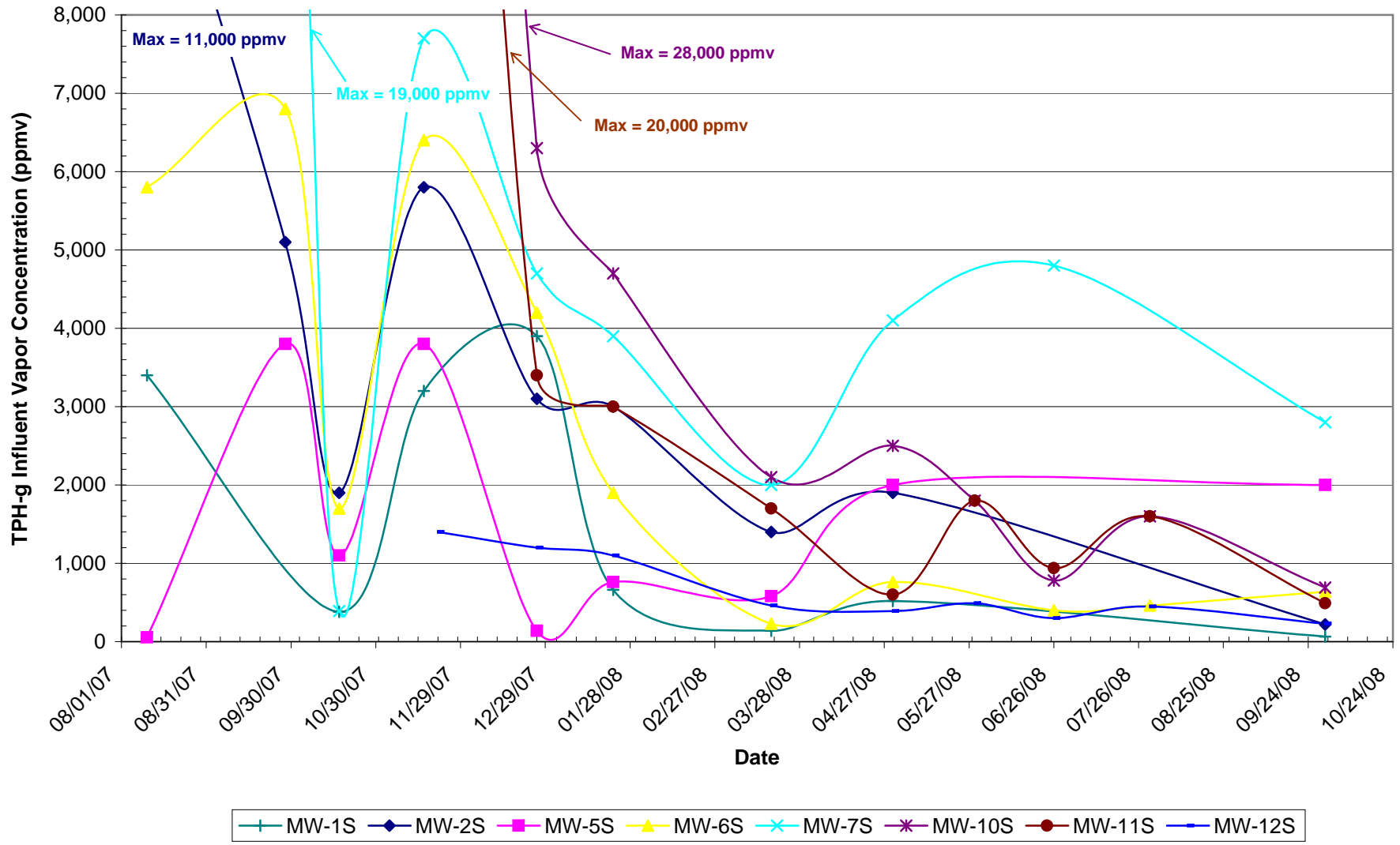
GP-3	
<b>GP-3-5'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25
<b>GP-3-10'</b>	
TPH-g	<1,800
MTBE	<7.3
Bezene	<6.5
Toluene	<7.7
Ethylbenzene	<8.8
Xylene	<27
PCE	<14
2-propanol	<25



<b>LEGEND</b>		DRAFTED BY RJB 10-01-07 REVISED BY RJB 11-10-08	
<ul style="list-style-type: none"> <li> MONITORING WELL</li> <li> SOIL BORING (8/9/96)</li> <li> SOIL BORING (04/02 &amp; 03/03)</li> <li> SOIL GAS PROBE</li> </ul>	<p>Soil gas analytical data in micrograms per cubic meter (ug/m<sup>3</sup>)</p> <p>TPH-g = Total Petroleum Hydrocarbons as gasoline            MTBE = Methyl tertiary-butyl ether            PCE = Tetrachloroethene            - Not sampled and/or analyzed            * Sampling not possible due to seasonal wet soil conditions            *Note: HVDPE system was shutdown approximately 2 weeks prior to sampling</p>	FORMER UST LOCATION	<p><b>AEI CONSULTANTS</b>            2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK</p> <p><b>SOIL GAS SAMPLE ANALYTICAL DATA (08/15/08)</b></p> <p>245 8TH STREET            OAKLAND, CALIFORNIA</p>
			<p><b>FIGURE 6</b>            PROJECT NO. 116907</p>

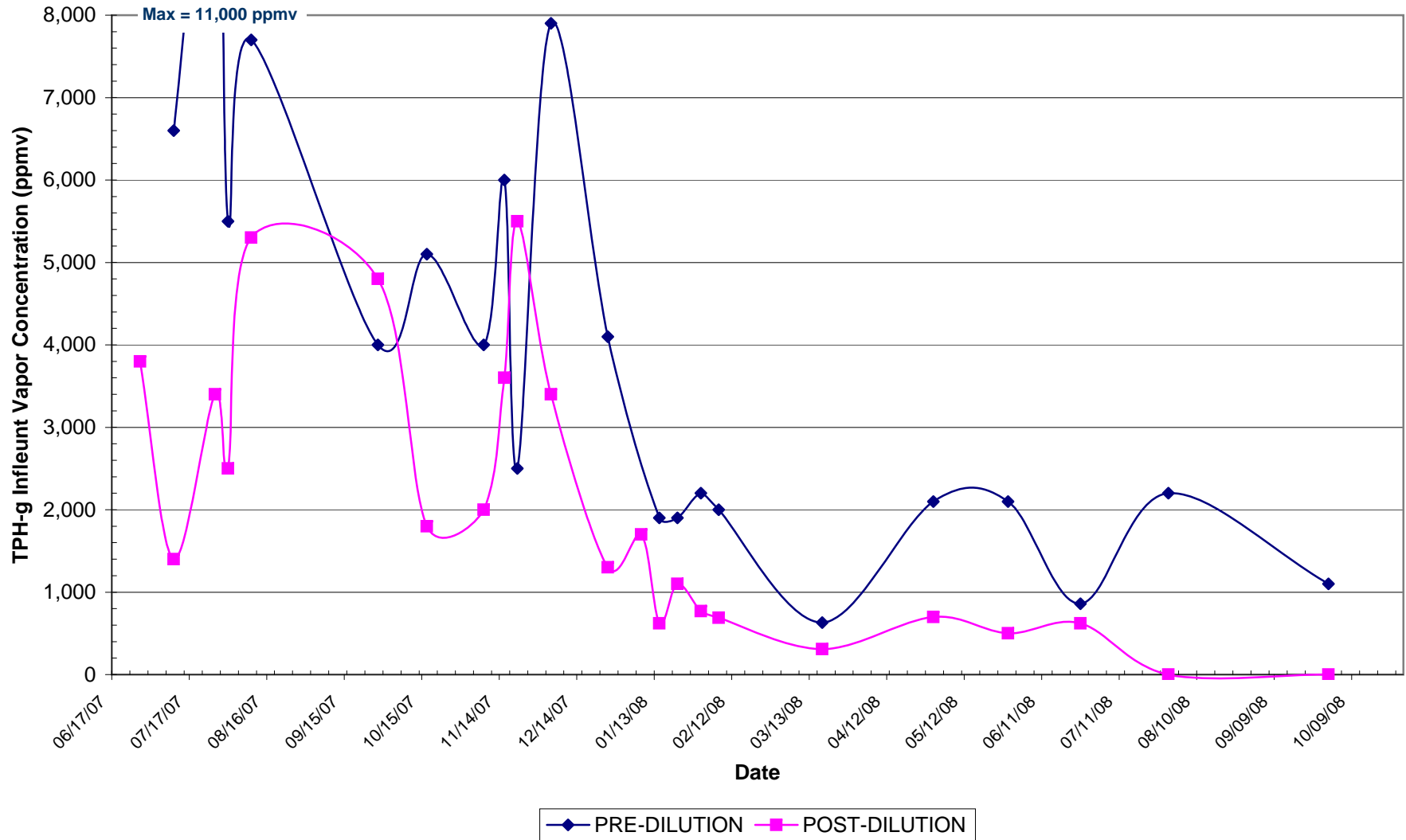
**FIGURE 7: EXTRACTION WELL INFLUENT CONCENTRATIONS OVER TIME**

Vic's Auto, 245 8th Street, Oakland, California



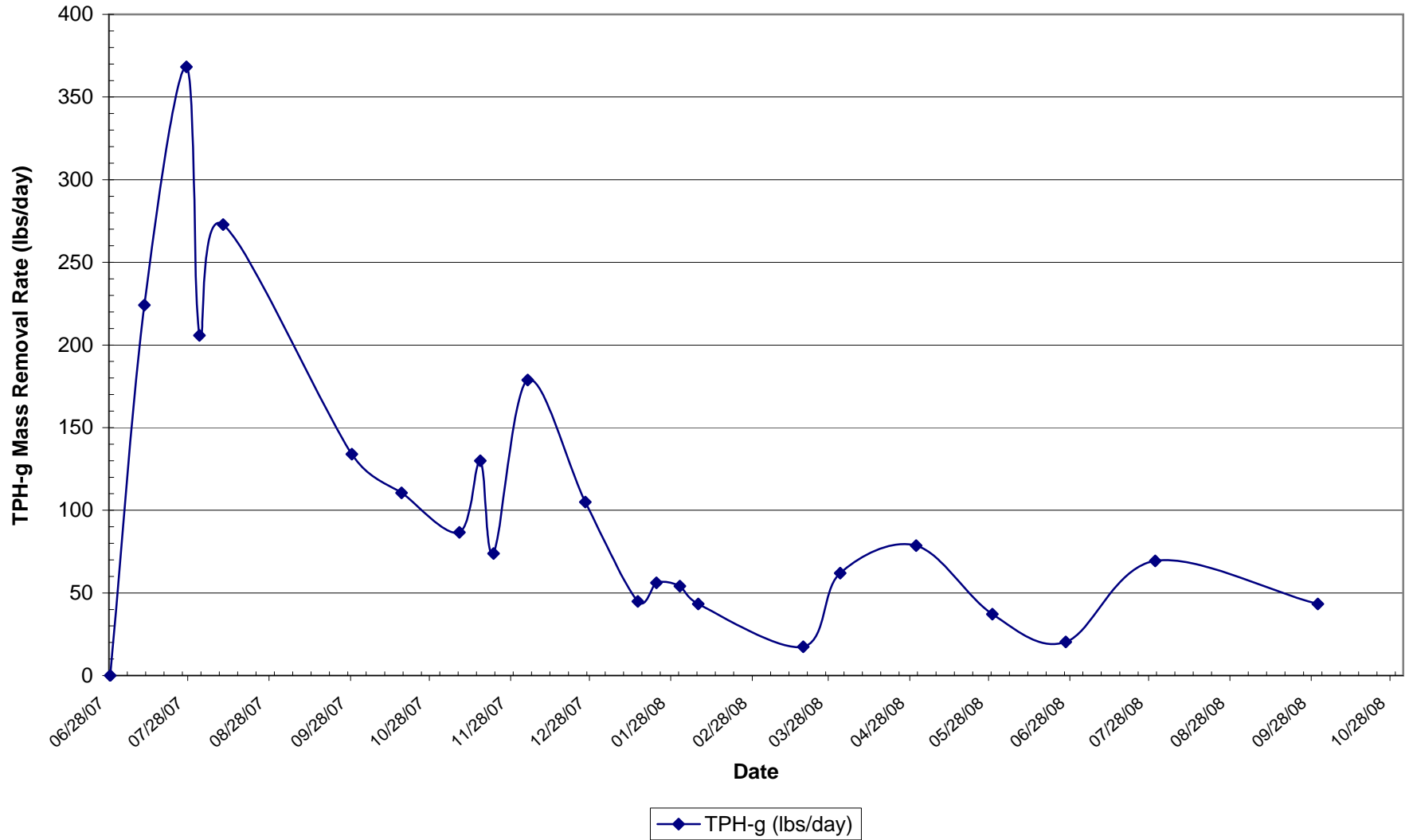
**FIGURE 8: COMBINED SYSTEM INFLUENT CONCENTRATIONS OVER TIME**

Vic's Auto, 245 8th Street, Oakland, California



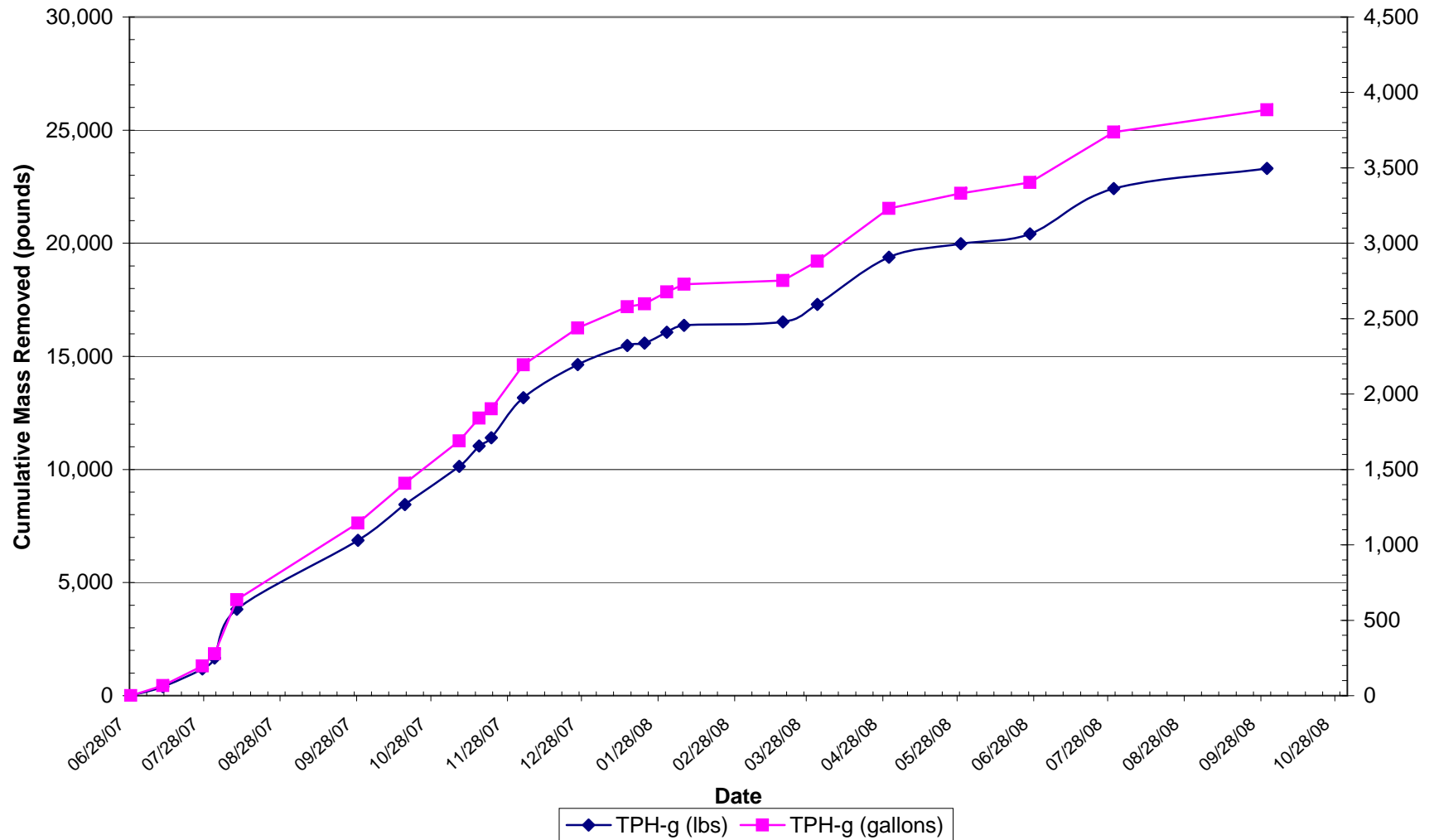
**FIGURE 9: HYDROCARBON MASS REMOVAL RATES BASED ON LAB DATA**

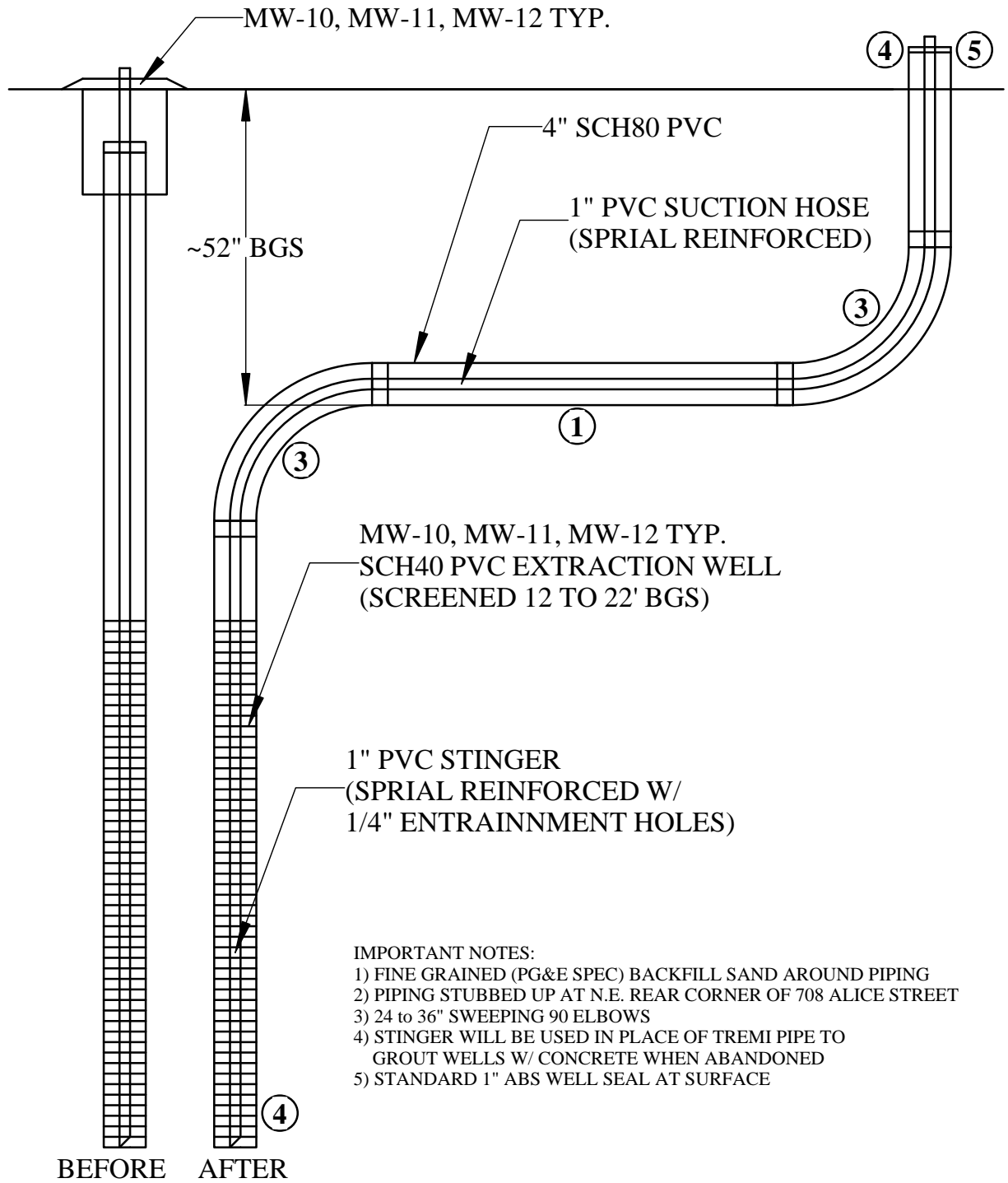
Vic's Auto, 245 8th Street, Oakland, California



**FIGURE 10: CUMULATIVE HYDROCARBON MASS REMOVED BASED ON LAB DATA**

Vic's Auto, 245 8th Street, Oakland, California





NOT TO SCALE

LEGEND

DRAFTED BY RJB 06-10-08  
 REVISED BY RJB 11-10-08

**AEI CONSULTANTS**

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

HVDPE CONVEYANCE  
 PIPING LATERAL (AS-BUILT)

245 8TH STREET  
 OAKLAND, CALIFORNIA

**FIGURE 11**  
 PROJECT NO. 116907

**AS-BUILT**

## **TABLES**

**TABLE 1: GROUNDWATER ELEVATION DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
<b>MW-1</b> (8-28)	06/29/01	27.73	16.52	11.21	14.89	1.63
	10/10/01	27.73	15.45	12.28	15.37	0.08
	01/09/02	27.73	12.61	15.12	-	<0.01
	04/24/02	27.73	13.35	14.38	-	<0.01
	07/24/02	27.73	14.19	13.54	-	<0.01
	11/05/02	27.73	14.85	12.88	-	<0.01
	02/04/03	27.73	14.91	12.82	-	<0.01
	05/02/03	27.73	14.43	13.30	-	0.08
	08/04/03	27.73	15.24	12.49	15.01	0.23
	11/03/03	27.73	16.94	10.79	15.67	1.27
	02/09/04	27.73	14.61	13.12	14.43	0.18
	05/10/04	27.73	Obstructed	-	-	-
	08/09/04	27.73	15.24	12.49	15.03	0.21
	11/09/04	27.73	15.95	11.78	15.71	0.24
	02/03/05	32.55	13.75	18.80	13.58	0.17
	05/09/05	32.55	13.93	18.62	13.81	0.12
	08/05/05	32.55	15.40	17.15	15.39	0.01
	11/09/05	32.55	15.76	16.79	15.75	0.01
	02/09/06	32.55	13.52	19.03	13.50	0.02
	05/04/06	32.55	12.47	20.08	12.46	0.01
	08/04/06	32.55	15.11	17.44	15.09	0.02
	11/08/06	32.55	16.03	16.52	16.02	0.01
	02/08/07	32.55	16.51	16.04	16.48	0.03
	05/29/07	32.55	15.56	16.99	15.51	0.05
	09/05/07	32.55	16.33	16.22	-	Sheen
	12/12/07	32.55	17.62	14.93	-	Sheen
	02/13/08	32.55	15.94	16.61	-	Sheen
	05/15/08	32.55	16.64	15.91	-	-
	<b>08/05/08</b>	<b>32.55</b>	<b>16.99</b>	<b>15.56</b>	-	-
	<b>MW-2</b> (8-28)	06/29/01	28.16	16.14	12.02	-
10/10/01		28.16	16.43	11.73	-	-
01/09/02		28.16	13.50	14.66	-	-
04/24/02		28.16	14.40	13.76	-	-
07/24/02		28.16	14.91	13.25	-	-
11/05/02		28.16	16.96	11.20	-	-
02/04/03		28.16	15.42	12.74	-	-
05/02/03		28.16	15.24	12.92	-	-
08/04/03		28.16	15.98	12.18	-	-
11/03/03		28.16	16.60	11.56	-	Sheen
02/09/04		28.16	15.22	12.94	-	Sheen
05/10/04		28.16	15.34	12.82	-	Sheen
08/09/04		28.16	15.92	12.24	-	Sheen
11/09/04		28.16	16.51	11.65	-	Sheen
02/03/05		33.24	14.44	18.80	-	Sheen
05/09/05		33.24	14.67	18.57	-	Sheen
08/05/05		33.24	16.27	16.97	-	Sheen
11/09/05		33.24	16.53	16.71	-	Sheen
02/09/06		33.24	14.36	18.88	-	Sheen
05/04/06		33.24	13.46	19.78	-	Sheen
08/04/06	33.24	15.95	17.29	-	Sheen	



**TABLE 1: GROUNDWATER ELEVATION DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
<b>MW-2 cont.</b>	11/08/06	33.24	16.86	16.38	-	Sheen
	02/08/07	33.24	17.13	16.11	-	Sheen
	05/29/07	33.24	16.51	16.73	-	Sheen
	09/05/07	33.24	17.48	15.76	-	-
	12/12/07	33.24	18.72	14.52	-	-
	02/13/08	33.24	16.91	16.33	-	-
	05/15/08	33.24	17.67	15.57	-	-
	<b>08/05/08</b>	<b>33.24</b>	<b>17.94</b>	<b>15.30</b>	-	-
<b>MW-3 (10-25)</b>	06/29/01	29.21	16.60	12.61	-	-
	10/10/01	29.21	16.92	12.29	-	-
	01/09/02	29.21	14.20	15.01	-	-
	04/24/02	29.21	15.07	14.14	-	-
	07/24/02	29.21	16.40	12.81	-	-
	11/05/02	29.21	16.47	12.74	-	-
	02/04/03	29.21	16.92	12.29	-	-
	05/02/03	29.21	15.45	13.76	-	-
	08/04/03	29.21	16.46	12.75	-	-
	11/03/03	29.21	17.15	12.06	-	-
	02/09/04	29.21	15.78	13.43	-	-
	05/10/04	29.21	15.77	13.44	-	-
	08/09/04	29.21	16.45	12.76	-	-
	11/09/04	29.21	17.26	11.95	-	-
	02/03/05	34.25	15.92	18.33	-	-
	05/09/05	34.25	15.03	19.22	-	-
	08/05/05	34.25	16.59	17.66	-	-
	11/09/05	34.25	16.82	17.43	-	-
	02/09/06	34.25	14.65	19.60	-	-
	05/04/06	34.25	13.61	20.64	-	-
	08/04/06	34.25	16.28	17.97	-	-
	11/08/06	34.25	17.28	16.97	-	-
	02/08/07	34.25	17.68	16.57	-	-
	05/29/07	34.25	17.37	16.88	-	-
	09/05/07	34.25	18.53	15.72	-	-
	12/12/07	34.25	19.61	14.64	-	-
	02/13/08	34.25	18.12	16.13	-	-
05/15/08	34.25	18.64	15.61	-	-	
<b>08/05/08</b>	<b>34.25</b>	<b>18.88</b>	<b>15.37</b>	-	-	
<b>MW-4 (10-25)</b>	06/29/01	29.38	17.71	11.67	-	-
	10/10/01	29.38	18.00	11.38	-	-
	01/09/02	29.38	15.02	14.36	-	-
	04/24/02	29.38	15.74	13.64	-	-
	07/24/02	29.38	16.69	12.69	-	-
	11/05/02	29.38	17.64	11.74	-	-
	02/04/03	29.38	16.02	13.36	-	-
	05/02/03	29.38	16.72	12.66	-	-
	08/04/03	29.38	17.51	11.87	-	-
	11/03/03	29.38	18.09	11.29	-	-
	02/09/04	29.38	16.67	12.71	-	-

**TABLE 1: GROUNDWATER ELEVATION DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)	
<b>MW-4 cont.</b>	05/10/04	29.38	16.89	12.49	-	-	
	08/09/04	29.38	17.44	11.94	-	-	
	11/09/04	29.38	17.89	11.49	-	-	
	02/03/05	34.42	14.98	19.44	-	-	
	05/09/05	34.42	16.20	18.22	-	-	
	08/05/05	34.42	17.73	16.69	-	-	
	11/09/05	34.42	17.91	16.51	-	-	
	02/09/06	34.42	15.62	18.80	-	-	
	05/04/06	34.42	15.12	19.30	-	-	
	08/04/06	34.42	17.39	17.03	-	-	
	11/08/06	34.42	18.30	16.12	-	-	
	02/08/07	34.42	18.57	15.85	-	-	
	05/29/07	34.42	18.29	16.13	-	-	
	09/05/07	34.42	19.27	15.15	-	-	
	12/12/07	34.42	20.44	13.98	-	-	
	02/13/08	34.42	18.52	15.90	-	-	
	05/15/08	34.42	19.42	15.00	-	-	
	<b>08/05/08</b>	<b>34.42</b>	<b>19.67</b>	<b>14.75</b>	-	-	
<b>MW-5 (12-22)</b>	02/03/05	33.33	14.23	19.10	-	-	
	05/09/05	33.33	14.33	19.00	-	-	
	08/05/05	33.33	15.89	17.44	-	-	
	11/09/05	33.33	16.18	17.15	-	-	
	02/09/06	33.33	14.02	19.31	-	-	
	05/04/06	33.33	12.97	20.36	-	-	
	08/04/06	33.33	15.63	17.70	-	-	
	11/08/06	33.33	16.55	16.78	-	-	
	02/08/07	33.33	16.12	17.21	-	-	
	05/29/07	33.33	15.87	17.46	-	-	
	09/05/07	33.33	16.95	16.38	-	-	
	12/12/07	33.33	18.13	15.20	-	-	
	02/13/08	33.33	16.58	16.75	-	-	
	05/15/08	33.33	17.08	16.25	-	-	
	<b>08/05/08</b>	<b>33.33</b>	<b>17.42</b>	<b>15.91</b>	-	-	
<b>MW-6 (12-22)</b>	02/03/05	32.82	13.99	18.83	-	Sheen	
	05/09/05	32.82	13.61	19.21	-	Sheen	
	08/05/05	32.82	15.50	17.32	15.13	0.37	
	11/09/05	32.82	15.87	16.95	15.50	0.37	
	02/09/06	32.82	13.93	18.89	13.22	0.71	
	05/04/06	32.82	12.88	19.94	12.13	0.75	
	08/04/06	32.82	15.22	17.60	14.81	0.41	
	11/08/06	32.82	16.16	16.66	15.78	0.38	
	02/08/07	32.82	15.48	17.34	15.14	0.34	
	05/29/07	32.82	15.35	17.47	15.04	0.31	
	09/05/07	32.82	15.55	17.27	-	-	
	12/12/07	32.82	17.22	15.60	-	Sheen	
	02/13/08	32.82	15.54	17.28	-	Sheen	
	05/15/08	32.82	16.25	16.57	-	-	
		<b>08/05/08</b>	<b>32.82</b>	<b>16.48</b>	<b>16.34</b>	-	-

**TABLE 1: GROUNDWATER ELEVATION DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
MW-7 (12-22)	02/03/05	33.07	14.17	18.90	-	Sheen
	05/09/05	33.07	14.47	18.60	14.44	0.03
	08/05/05	33.07	16.07	17.00	16.02	0.05
	11/09/05	33.07	16.47	16.60	16.35	0.12
	02/09/06	33.07	14.18	18.89	14.11	0.07
	05/04/06	33.07	13.12	19.95	13.11	0.01
	08/04/06	33.07	15.74	17.33	-	Sheen
	11/08/06	33.07	16.59	16.48	-	Sheen
	02/08/07	33.07	16.23	16.84	-	Sheen
	05/29/07	33.07	16.13	16.94	-	Sheen
	09/05/07	33.07	16.40	16.67	-	Sheen
	12/12/07	33.07	18.02	15.05	-	Sheen
	02/13/08	33.07	16.27	16.80	-	Sheen
	05/15/08	33.07	17.01	16.06	-	-
	<b>08/05/08</b>	<b>33.07</b>	<b>17.23</b>	<b>15.84</b>	-	-
	MW-8 (12-22)	05/15/08	33.00	16.47	16.53	-
<b>08/05/08</b>		<b>33.00</b>	<b>16.88</b>	<b>16.12</b>	-	-
MW-9 (12-22)	05/15/08	32.00	15.16	16.84	-	-
	<b>08/05/08</b>	<b>32.00</b>	<b>15.38</b>	<b>16.62</b>	-	-
MW-10 (12-22)	02/03/05	31.17	12.65	18.52	-	-
	05/09/05	31.17	13.09	18.08	-	-
	08/05/05	31.17	14.68	16.49	-	-
	11/09/05	31.17	14.94	16.23	-	-
	02/09/06	31.17	12.82	18.35	-	-
	05/04/06	31.17	12.11	19.06	-	-
	08/04/06	31.17	14.38	16.79	-	-
	11/08/06	31.17	15.32	15.85	-	-
	02/08/07	31.17	15.59	15.58	-	-
	05/29/07	31.17	15.27	15.90	-	-
	09/05/07	31.17	16.25	14.92	-	-
	12/12/07	31.17	17.75	13.42	-	Sheen
	02/13/08	31.17	15.59	15.58	-	-
	05/15/08	31.17	16.40	14.77	-	-
	<b>08/05/08</b>	<b>31.17</b>	<b>16.67</b>	<b>14.50</b>	-	-
	MW-11 (12-22)	02/03/05	31.78	13.39	18.39	-
05/09/05		31.78	13.89	17.89	-	Sheen
08/05/05		31.78	15.47	16.31	-	Sheen
11/09/05		31.78	15.73	16.05	-	Sheen
02/09/06		31.78	13.53	18.25	-	Sheen
05/04/06		31.78	12.73	19.05	-	Sheen
08/04/06		31.78	15.17	16.61	-	Sheen
11/08/06		31.78	16.15	15.63	-	-
02/08/07		31.78	16.36	15.42	-	Sheen
05/29/07		31.78	16.06	15.72	-	Sheen
09/05/07	31.78	17.03	14.75	-	Sheen	

**TABLE 1: GROUNDWATER ELEVATION DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
<b>MW-11</b> <b>cont.</b>	12/12/07	31.78	18.68	13.10	-	-
	02/13/08	31.78	16.28	15.50	-	-
	05/15/08	31.78	17.12	14.66	-	-
	<b>08/05/08</b>	<b>31.78</b>	<b>17.33</b>	<b>14.45</b>	-	-
<b>MW-12</b> (12-22)	02/03/05	32.05	13.70	18.35	-	Sheen
	05/09/05	32.05	14.17	17.88	-	Sheen
	08/05/05	32.05	15.69	16.36	-	Sheen
	11/09/05	32.05	15.93	16.12	-	Sheen
	02/09/06	32.05	13.78	18.27	-	Sheen
	05/04/06	32.05	12.98	19.07	-	Sheen
	08/04/06	32.05	15.39	16.66	-	Sheen
	11/08/06	32.05	16.29	15.76	-	-
	02/08/07	32.05	16.54	15.51	-	-
	05/29/07	32.05	16.27	15.78	-	-
	09/05/07	32.05	17.24	14.81	-	-
	12/12/07	32.02	18.65	13.37	-	-
	02/14/08	32.02	16.50	15.52	-	-
	05/15/08	32.02	17.34	14.68	-	-
	<b>08/05/08</b>	<b>32.02</b>	<b>17.61</b>	<b>14.41</b>	-	-
<b>MW-13</b> (12-22)	05/15/08	<b>32.00</b>	14.87	17.13	-	-
	<b>08/05/08</b>	<b>32.00</b>	<b>15.10</b>	<b>16.90</b>	-	-

**NOTES:**

all well elevations are measured from the top of the casing

- not applicable

ft = feet

ft amsl = feet above mean sea level

LNAPL = light non-aqueous phase liquid (i.e., free product)

1) Monitoring well top of casing (TOC) elevations were resurveyed by Morrow Surveying on January 10, 2006 and February 7, 2006

2) Groudwater elevations for the February 3, 2005 and subsequent monitoring episodes use the new well survey data

3) When LNAPL is present at &gt;0.10 ft, the groundwater elevations are assumed to be affected by the LNAPL

Red = Assumed elevation, awaiting final survey data upon  
upcomming installation of MW-14 and MW-15

**TABLE 2: GROUNDWATER FLOW SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Episode #	Date	Average Groundwater Elevation <sup>1</sup> (ft amsl)	Change from Previous Episode (ft)	Flow direction (gradient)
1	06/29/01	12.10	-	SSE (0.0074)
2	10/10/01	11.80	-0.30	SSE (0.0071)
3	01/09/02	14.68	2.88	SE (0.0054)
4	04/24/02	13.85	-0.83	SSW (0.005)
5	07/24/02	12.92	-0.93	NE (0.021)
6	11/05/02	11.89	-1.02	SW (0.019)
7	02/04/03	12.80	0.90	NNW (0.01)
8	05/02/03	13.11	0.32	SSE (0.01)
9	08/04/03	12.27	-0.85	SSE(0.007)
10	11/03/03	11.64	-0.63	SSE (0.006)
11	02/09/04	13.03	1.39	SSE (0.006)
12	05/10/04	12.92	-0.11	SSE (0.008)
13	08/09/04	12.31	-0.60	SSE (0.006)
14	11/09/04	11.70	-0.62	SSE (0.004)
15	02/03/05	18.75	-	W (0.007)
16	05/09/05	18.53	-0.22	S (0.010)
17	08/05/05	16.94	-1.59	S (0.010)
18	11/09/05	16.65	-0.28	S (0.010)
19	02/09/06	18.83	2.17	SSW (0.010)
20	05/04/06	19.72	0.90	SSW (0.012)
21	08/04/06	17.24	-2.48	SSW (0.010)
22	11/08/06	16.32	-0.93	SSW(0.0007)
23	02/08/07	16.25	-0.07	SSE (0.0009)
24	05/29/07	16.60	0.35	SSE (0.0009)
25*	09/05/07	15.77	-0.84	-
26*	12/12/07	14.38	-1.38	-
27*	02/13/08	16.24	1.86	-
28*	05/15/08	15.81	-0.43	-
<b>29*</b>	<b>08/05/08</b>	<b>15.54</b>	<b>-0.27</b>	-

**NOTES:**

- not applicable

ft = feet

ft amsl = feet above mean sea level

1) MW-2 to MW-4 only used for episodes 1 through 14; all wells used for episodes 15 and later

\* = Flow direction not calculated due to onsite operation of dual-phase extraction remediation system

**TABLE 3: GROUNDWATER SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	HVOC (µg/L)	
MW-1 (8-28)	06/29/01	1.63	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	10/10/01	0.08	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	01/09/02	<0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	04/24/02	<0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	07/24/02	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	11/05/02	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	02/04/03	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	05/02/03	0.08	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	08/04/03	0.23	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	11/03/03	1.27	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	02/09/04	0.18	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	05/10/04	Obstructed	-	-	-	-	-	-	-	
	08/09/04	0.21	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	11/09/04	0.24	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	02/03/05	0.17	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	05/09/05	0.12	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	08/05/05	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	11/09/05	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	02/09/06	0.02	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	05/04/06	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	08/04/06	0.02	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	11/08/06	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	02/08/07	0.03	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	05/29/07	0.05	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-	
	09/05/07	Sheen	47,000	47,000	<500	4,200	11,000	1,100	6,400	-
	12/12/07	Sheen	80,000	80,000	<250	630	22,000	1,700	8,900	-
	02/13/08	Sheen	22,000	22,000	<250	750	4,100	340	3,200	-
	05/15/08	0.00	25,000	25,000	<600	580	9,200	970	4,200	-
<b>08/05/08</b>	<b>0.00</b>	<b>110,000</b>	<b>110,000</b>	<b>&lt;1,000</b>	<b>730</b>	<b>22,000</b>	<b>1,700</b>	<b>8,200</b>	-	
MW-2 (8-28)	06/29/01	0.00	69,000	4,100/4,400*	7,200	6,100	1,500	7,000	-	
	10/10/01	0.00	87,000	14,000	22,000	12,000	2,700	9,100	-	
	01/09/02	0.00	130,000	11,000	30,000	19,000	3,800	14,000	-	
	04/24/02	Sheen	210,000	32,000	38,000	23,000	4,600	19,000	-	
	07/24/02	Sheen	170,000	36,000	48,000	12,000	3,700	8,600	-	
	11/05/02	Sheen	190,000	36,000	45,000	25,000	4,600	16,000	-	
	02/04/03	Sheen	150,000	27,000	51,000	24,000	4,200	14,000	-	
	05/02/03	Sheen	150,000	35,000	39,000	11,000	3,800	9,900	-	
	08/04/03	Sheen	120,000	29,000	32,000	5,000	3,200	7,200	-	
	11/03/03	Sheen	120,000	24,000	33,000	4,300	3,200	5,400	-	
	02/09/04	Sheen	130,000	19,000	27,000	7,700	3,100	7,600	-	
	05/10/04	Sheen	67,000	13,000	20,000	3,000	2,300	4,100	-	
	08/09/04	Sheen	100,000	22,000	27,000	7,100	2,800	6,600	-	
	11/09/04	Sheen	100,000	23,000	27,000	6,100	3,000	5,600	-	
	02/03/05	Sheen	84,000	11,000	23,000	5,000	3,000	5,500	-	
	05/09/05	Sheen	74,000	14,000	21,000	4,200	2,300	3,300	-	
	07/27/05	Sheen	9,500	910	1,400	1,000	180	960	-	
08/05/05	Sheen	74,000	4,000	8,800	11,000	1,300	7,600	-		
11/09/05	Sheen	120,000	16,000	21,000	14,000	2,300	13,000	-		
02/09/06	Sheen	120,000	10,000	18,000	16,000	2,200	13,000	-		
05/04/06	Sheen	71,000	8,300	14,000	11,000	1,500	7,600	-		
08/04/06	Sheen	160,000	14,000	22,000	14,000	2,400	11,000	-		
11/08/06	Sheen	110,000	6,400	17,000	9,200	1,600	6,800	<DL		

**TABLE 3: GROUNDWATER SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	HVOC (µg/L)
MW-2 continued	02/08/07*	Sheen	68,000	5,400	11,000	7,800	1,500	7,700	-
	05/29/07	Sheen	49,000	4,800	7,600	4,400	940	4,600	-
	09/05/07	Sheen	25,000	1,000	3,300	3,400	490	2,800	-
	12/12/07	0.00	5,500	870	1,100	440	28	550	-
	02/13/08	0.00	5,700	250	440	290	43	1,000	-
	05/15/08	0.00	490	68	110	11	0.90	42	-
	<b>08/05/08</b>	<b>0.00</b>	<b>520</b>	<b>&lt;25</b>	<b>26</b>	<b>57</b>	<b>7.6</b>	<b>70</b>	-
MW-3 (10-25)	06/29/01	0.00	550	<5.0	<0.5	3.1	3.2	1.2	-
	10/10/01	0.00	470	<5.0	0.77	5.3	3.3	5.9	-
	01/09/02	0.00	1,000	<5.0	0.90	7.6	7.8	25	-
	04/24/02	0.00	1,500	<5.0	0.64	7.2	12	14	-
	07/24/02	0.00	1,200	<5.0	10	17.0	11	25	-
	11/05/02	0.00	1,800	<25	33	43.0	18	31	-
	02/04/03	0.00	450	<5.0	<0.5	5.0	<0.5	0.77	-
	05/02/03	0.00	340	<5.0	7.3	10.0	2.5	7.3	-
	08/04/03	0.00	170	<5.0	5.8	5.9	1.5	4.9	-
	11/03/03	0.00	54	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/09/04	0.00	190	<5.0	<0.5	3.6	<0.5	<0.5	-
	05/10/04	0.00	280	<5.0	<0.5	3.4	<0.5	<0.5	-
	08/09/04	0.00	290	<5.0	<0.5	3.8	<0.5	<0.5	-
	11/09/04	0.00	220	<5.0	<0.5	4.0	<0.5	<0.5	-
	02/03/05	0.00	160	<5.0	13	30	3	21	-
	05/09/05	0.00	200	<5.0	<0.5	3.9	<0.5	<0.5	-
	08/05/05	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	11/09/05	0.00	130	<5.0	<0.5	2.3	<0.5	<0.5	-
	02/09/06	0.00	270	<5.0	<0.5	5.6	<0.5	<0.5	-
	05/04/06	0.00	220	<5.0	<0.5	4.3	<0.5	<0.5	-
	08/04/06	0.00	93	<5.0	<0.5	1.5	<0.5	<0.5	-
	11/08/06	0.00	160	<5.0	<0.5	2.9	<0.5	<0.5	<DL
	02/08/07*	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	05/29/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	09/05/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	12/12/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/13/08	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	05/15/08	0.00	<50	<5.0	0.99	<0.5	<0.5	0.68	-
<b>08/05/08</b>	<b>0.00</b>	<b>91</b>	<b>&lt;5.0</b>	<b>2.0</b>	<b>8.0</b>	<b>1.3</b>	<b>8.0</b>	-	
MW-4 (10-25)	06/29/01	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	10/10/01	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	01/09/02	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	04/24/02	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	07/24/02	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	11/05/02	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/04/03	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	05/02/03	0.00	500	10	68	71	18	65	-
08/04/03	0.00	270	<5.0	30	29	9.2	32	-	

**TABLE 3: GROUNDWATER SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	HVOC (µg/L)
<b>MW-4</b> continued	11/03/03	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/09/04	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	05/10/04	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	08/09/04	0.00	130	<5.0	14	13	5.3	17	-
	11/09/04	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/03/05	0.00	370	<5.0	<0.5	4.1	<0.5	0.64	-
	05/09/05	0.00	840	<5.0	50	180	21	110	-
	07/27/05	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	08/05/05	0.00	310	<5.0	7.5	57	10	53	-
	11/09/05	0.00	290	<5.0	12	61	8.8	49	-
	02/09/06	0.00	250	<5.0	9.9	42	7.5	45	-
	05/04/06	0.00	300	<5.0	37	76	7.8	42	-
	08/04/06	0.00	270	<5.0	7.3	33	5.6	32	-
	11/08/06	0.00	1,300	<5.0	75	230	31	160	<DL
	02/08/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	05/29/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	09/05/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	12/12/07	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-
	02/13/08	0.00	75	<5.0	2.4	8.3	1.2	14	-
	05/15/08	0.00	<50	<5.0	0.65	<0.5	<0.5	0.52	-
<b>08/05/08</b>	<b>0.00</b>	<b>76</b>	<b>&lt;5.0</b>	<b>1.2</b>	<b>8.1</b>	<b>1.5</b>	<b>9.7</b>	-	
<b>MW-5</b> (12-22)	02/03/05	0.00	78,000	<1,000	7,600	13,000	2,200	9,600	-
	05/09/05	0.00	60,000	<900	6,100	9,900	1,600	6,600	-
	07/27/05	nm	120,000	1,100	10,000	19,000	2,100	13,000	-
	08/05/05	0.00	59,000	<500	4,100	10,000	1,200	6,600	-
	11/09/05	0.00	44,000	<500	3,300	7,400	1,100	4,900	-
	02/09/06	0.00	110,000	<500	10,000	22,000	2,400	13,000	-
	05/04/06	0.00	110,000	<250	11,000	22,000	2,900	15,000	-
	08/04/06	0.00	73,000	<500	4,700	8,600	1,700	7,600	-
	11/08/06	0.00	51,000	<500	3,700	7,200	1,400	6,700	<DL
	02/08/07	0.00	67,000	<800	5,100	10,000	1,800	10,000	-
	05/29/07	0.00	86,000	<1000	6,200	12,000	2,000	11,000	-
	09/05/07	0.00	36,000	<350	2,100	4,000	560	4,600	-
	12/12/07	0.00	8,200	<100	160	56	290	1,200	-
	02/13/08	0.00	4,600	<50	77	440	41	1,300	-
	05/15/08	0.00	3,000	<10	59	330	47	670	-
<b>08/05/08</b>	<b>0.00</b>	<b>4,500</b>	<b>&lt;50</b>	<b>64</b>	<b>490</b>	<b>46</b>	<b>1,100</b>	-	
<b>MW-6</b> (12-22)	02/03/05	Sheen	130,000	<1,000	2,400	33,000	2,400	15,000	-
	05/09/05	Sheen	170,000	<4,000	11,000	43,000	3,100	16,000	-
	08/05/05	0.37	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	11/09/05	0.37	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	02/09/06	0.71	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	05/04/06	0.75	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	08/04/06	0.41	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	11/08/06	0.38	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-



**TABLE 3: GROUNDWATER SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	HVOC (µg/L)
MW-6 continued	02/08/07	0.34	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	05/29/07	0.31	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	09/05/07	0.00	74,000	<750	870	7,000	2,400	12,000	-
	12/12/07	Sheen	12,000	<10	556	560	550	1,800	-
	02/13/08	Sheen	27,000	<250	700	4,900	620	5,300	<DL
	05/15/08	0.00	25,000	<150	410	2,500	1,000	3,700	-
	<b>08/05/08</b>	<b>0.00</b>	<b>33,000</b>	<b>&lt;350</b>	<b>480</b>	<b>5,500</b>	<b>1,400</b>	<b>6,800</b>	-
MW-7 (12-22)	02/03/05	Sheen	220,000	18,000	45,000	44,000	3,500	18,000	-
	05/09/05	0.03	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	08/05/05	0.05	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	11/09/05	0.12	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	02/09/06	0.07	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	05/04/06	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	08/04/06	Sheen	230,000	19,000	37,000	37,000	3,100	14,000	-
	11/08/06	Sheen	240,000	13,000	41,000	39,000	3,000	14,000	<DL
	02/08/07	Sheen	230,000	15,000	41,000	37,000	3,700	20,000	-
	05/29/07	Sheen	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	-
	09/05/07	Sheen	14,000	<450	41	210	99	1,600	-
	12/12/07	Sheen	9,200	<500	1,100	870	66	1,100	-
	02/13/08	0.00	17,000	590	2,800	2,700	300	1,900	-
	05/15/08	0.00	10,000	230	1,700	1,900	200	950	-
	<b>08/05/08</b>	<b>0.00</b>	<b>6,100</b>	<b>&lt;150</b>	<b>1,100</b>	<b>1,100</b>	<b>120</b>	<b>740</b>	-
MW-8 (12-22)	05/15/08	0.00	90	<5.0	0.62	2.4	<0.5	1.0	-
	<b>08/05/08</b>	<b>0.00</b>	<b>81</b>	<b>&lt;5.0</b>	<b>0.66</b>	<b>7.2</b>	<b>1.2</b>	<b>9.1</b>	-
MW-9 (12-22)	05/15/08	0.00	60,000	960	14,000	410	1,500	3,500	-
	<b>08/05/08</b>	<b>0.00</b>	<b>42,000</b>	<b>&lt;1,200</b>	<b>13,000</b>	<b>400</b>	<b>1,800</b>	<b>4,800</b>	-
MW-10 (12-22)	02/03/05	0.00	36,000	<500	4,700	7,200	660	3,400	-
	05/09/05	0.00	88,000	<1,500	6,900	20,000	2,300	9,900	-
	08/05/05	0.00	88,000	<1,100	10,000	21,000	1,900	9,800	-
	11/09/05	0.00	63,000	<1,100	5,400	13,000	1,900	7,900	-
	02/09/06	0.00	100,000	<500	6,600	19,000	2,900	13,000	-
	05/04/06	0.00	100,000	<500	8,500	25,000	3,000	13,000	-
	08/04/06	0.00	190,000	<2,200	17,000	35,000	2,800	13,000	-
	11/08/06	0.00	57,000	<500	2,500	7,600	1,600	5,700	<DL
	02/08/07	0.00	69,000	<1,000	4,400	14,000	2,200	8,800	-
	05/29/07	0.00	100,000	<1,000	5,300	19,000	2,600	12,000	-
	09/05/07	0.00	87,000	<1,000	6,100	20,000	2,400	12,000	-
	12/12/07	Sheen	4,700	<50	95	280	110	730	-
	02/13/08	0.00	4,500	<250	190	370	65	880	-
	05/15/08	0.00	4,800	<50	130	320	110	710	-
	<b>08/05/08</b>	<b>0.00</b>	<b>3,500</b>	<b>&lt;120</b>	<b>230</b>	<b>180</b>	<b>74</b>	<b>190</b>	-

**TABLE 3: GROUNDWATER SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID (screen interval)	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	HVOC (µg/L)
MW-11 (12-22)	02/03/05	Sheen	170,000	<3,000	23,000	35,000	3,100	16,000	-
	05/09/05	Sheen	210,000	3,500	29,000	40,000	3,400	16,000	-
	07/27/05	Sheen	220,000	2,500	26,000	37,000	3,200	18,000	-
	08/05/05	Sheen	210,000	<2,500	35,000	42,000	3,300	16,000	-
	11/09/05	Sheen	180,000	9,100	32,000	47,000	3,600	18,000	-
	02/09/06	Sheen	210,000	10,000	33,000	39,000	3,800	20,000	-
	05/04/06	Sheen	190,000	12,000	34,000	41,000	3,500	17,000	-
	08/04/06	Sheen	290,000	11,000	33,000	43,000	3,300	15,000	-
	11/08/06	0.00	240,000	14,000	34,000	44,000	3,300	16,000	<DL
	02/08/07	0.00	230,000	19,000	43,000	44,000	3,900	20,000	-
	05/29/07	0.00	230,000	19,000	35,000	39,000	3,600	20,000	-
	09/05/07	0.00	200,000	19,000	34,000	36,000	3,700	23,000	-
	12/12/07	0.00	81,000	4,000	9,400	9,500	1,700	9,700	-
	02/13/08	0.00	36,000	4,200	5,700	4,000	560	5,300	-
	05/15/08	0.00	15,000	2,300	2,800	1,400	120	1,900	-
	<b>08/05/08</b>	<b>0.00</b>	<b>12,000</b>	<b>1,100</b>	<b>1,800</b>	<b>760</b>	<b>98</b>	<b>630</b>	-
MW-12 (12-22)	02/03/05	Sheen	250,000	100,000	52,000	41,000	3,400	15,000	-
	05/09/05	Sheen	210,000	91,000	44,000	28,000	3,300	13,000	-
	08/05/05	Sheen	170,000	52,000	38,000	28,000	3,000	12,000	-
	11/09/05	Sheen	180,000	52,000	39,000	25,000	2,900	12,000	-
	02/09/06	Sheen	170,000	34,000	40,000	23,000	3,500	15,000	-
	05/04/06	Sheen	160,000	47,000	33,000	28,000	2,800	10,000	-
	08/04/06	Sheen	240,000	55,000	40,000	24,000	3,200	12,000	-
	11/08/06	0.00	190,000	33,000	40,000	23,000	2,700	13,000	<DL
	02/08/07	0.00	150,000	34,000	38,000	19,000	3,300	12,000	-
	05/29/07	0.00	150,000	30,000	30,000	15,000	3,100	13,000	-
	09/05/07	0.00	160,000	38,000	33,000	21,000	3,200	14,000	-
	12/12/07	0.00	58,000	6,700	10,000	7,100	1,200	4,900	-
	02/13/08	0.00	17,000	3,000	3,600	2,300	440	1,800	-
	05/15/08	0.00	7,800	1,900	2,000	500	130	640	-
		<b>08/05/08</b>	<b>0.00</b>	<b>3,900</b>	<b>800</b>	<b>730</b>	<b>130</b>	<b>61</b>	<b>200</b>
MW-13 (12-22)	05/15/08	0.00	<250	6,700	18	<2.5	<2.5	<2.5	-
	<b>08/05/08</b>	<b>0.00</b>	<b>&lt;250</b>	<b>3,400</b>	<b>&lt;2.5</b>	<b>5.7</b>	<b>&lt;2.5</b>	<b>4.3</b>	-

**NOTES:**

- not sampled/analyzed

ft = feet

ns/fp = not sampled / free product present

µg/L = micrograms per liter or parts per billion (ppb)

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

HVOC= halogenated volatile organic compounds (e.g., PCE, TCE, DCE, VC)

DL = detection limit

TPH-g by modified EPA Method 8015

BTEX & MTBE by modified EPA Method 8021B

\* MTBE sample re-analyzed by modified EPA Method 8260B (expressed as 8021B / 8260B)

\* = Analytical results for MW-2 and MW-3 reversed from lab data based on historical concentration trends observed

**TABLE 4: SOIL GAS SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID	Date Collected	Sample Depth (ft bgs)	TPH-g (µg/m <sup>3</sup> )	MTBE (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Toluene (µg/m <sup>3</sup> )	Ethylbenzene (µg/m <sup>3</sup> )	Xylenes (µg/m <sup>3</sup> )	Ethanol (µg/m <sup>3</sup> )	PCE (µg/m <sup>3</sup> )	2-propanol (µg/m <sup>3</sup> )
GP-1-5	08/04/06	5	331	<8.0	<7.1	<8.4	<9.7	<9.7	<17	17	23
GP-1-5D <sub>1</sub>	08/04/06	5	-	<8.0	<7.1	<8.4	<9.7	<9.7	<17	18	23
GP-1-5	11/08/06	5	1,100	<4.6	<4.0	<4.8	<5.5	<5.5	<9.5	12	<12
GP-1-5	03/06/07*	5	-	-	-	-	-	-	-	-	-
GP-1-5	05/17/07	5	457	<3.6	<3.2	<3.8	<4.4	<4.4	<7.6	14	<9.9
GP-1-5D <sub>1</sub>	05/17/07	5	-	<3.6	<3.2	<3.8	<4.4	<4.4	<7.6	14	<9.9
GP-1-5	12/12/07	5	<1,500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-1-5	02/14/08	5	<1,800	<48	<6.5	<7.7	<8.8	<27	<96	<14	<10,000
GP-1-5	05/08/08	5	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-1-5</b>	<b>08/15/08</b>	<b>5</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>&lt;14</b>	<b>&lt;10,000</b>
<b>GP-1-5D<sub>f</sub></b>	<b>08/15/08</b>	<b>5</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>&lt;14</b>	<b>&lt;10,000</b>
GP-1-10	08/04/06	10	493	<4.1	<3.6	<4.3	<5.0	<5.0	<8.6	20	<11
GP-1-10	11/08/06	10	950	<4.2	<3.7	<4.4	<5.0	<5.0	<8.8	<7.9	<11
GP-1-10	03/06/07*	10	-	-	-	-	-	-	-	-	-
GP-1-10	05/17/07^	10	-	-	-	-	-	-	-	-	-
GP-1-10	12/12/07	10	<1,500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-1-10	02/14/08	10	<1,800	<48	<6.5	<7.7	<8.8	<27	-	<14	<10,000
GP-1-10	05/08/08	10	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-1-10</b>	<b>08/15/08</b>	<b>10</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>&lt;14</b>	<b>&lt;10,000</b>
GP-2-5	08/04/06	5	493	<4.4	<3.9	6.9	<5.4	10	<9.3	600	<12
GP-2-5	11/08/06	5	1,100	<4.0	<3.6	<4.2	<4.9	<4.9	<8.4	240	<11
GP-2-5	03/06/07*	5	-	-	-	-	-	-	-	-	-
GP-2-5	05/17/07	5	582	<4.0	<3.5	<4.1	<4.8	<4.8	<8.3	420	<11
GP-2-5	12/12/07	5	<1,500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-2-5	02/14/08	5	<1,800	<48	<6.5	<7.7	<8.8	<27	<14	<14	<10,000
GP-2-5	05/08/08	5	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-2-5</b>	<b>08/15/08</b>	<b>5</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>39</b>	<b>&lt;10,000</b>
GP-2-10	08/04/06	10	352	<10	<9.0	18	<12	<12	<21	270	<28
GP-2-10	11/08/06	10	910	<3.9	<3.4	<4.1	<4.7	<4.7	<8.1	450	<11
GP-2-10	03/06/07*	10	-	-	-	-	-	-	-	-	-
GP-2-10	05/17/07	10	748	<3.8	<3.3	<3.9	<4.5	<4.5	<7.9	440	<10
GP-2-10	12/12/07	10	<1500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-2-10	02/14/08	10	<1800	<48	<6.5	<7.7	<8.8	<27	-	<14	<10,000
GP-2-10	05/08/08	10	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-2-10</b>	<b>08/15/08</b>	<b>10</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>48</b>	<b>&lt;10,000</b>
GP-3-5	08/04/06	5	<240	<4.2	<3.7	<4.4	<5.0	<5.0	<8.8	<7.9	<11
GP-3-5	11/08/06	5	930	<4.4	<3.9	<4.6	<5.2	<5.2	<9.1	<8.2	<12
GP-3-5	03/06/07*	5	-	-	-	-	-	-	-	-	-
GP-3-5	05/17/07	5	582	<4.0	<3.5	<4.1	<4.8	<4.8	17	<7.5	<11
GP-3-5D <sub>f</sub>	05/17/07	5	582	<4.0	<3.5	<4.1	<4.8	<4.8	<8.3	16	<11
GP-3-5	12/12/07	5	<1500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-3-5	02/14/08	5	<1800	<48	<6.5	<7.7	<8.8	<27	-	<14	<10,000
GP-3-5	05/08/08	5	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-3-5</b>	<b>08/15/08</b>	<b>5</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	-	<b>&lt;14</b>	<b>&lt;10,000</b>

**TABLE 4: SOIL GAS SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Well ID	Date Collected	Sample Depth (ft bgs)	TPH-g (µg/m <sup>3</sup> )	MTBE (µg/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	Toluene (µg/m <sup>3</sup> )	Ethylbenzene (µg/m <sup>3</sup> )	Xylenes (µg/m <sup>3</sup> )	Ethanol (µg/m <sup>3</sup> )	PCE (µg/m <sup>3</sup> )	2-propanol (µg/m <sup>3</sup> )
GP-3-10	08/04/06	10	564	<4.2	<3.7	<4.4	<5.0	<5.0	<8.8	<7.9	<11
GP-3-10	11/08/06	10	1,800	<4.0	<3.6	<4.2	<4.9	<4.9	<8.4	<7.6	<11
GP-3-10	03/06/07*	10	-	-	-	-	-	-	-	-	-
GP-3-10	05/17/07	10	1,538	<4.1	<3.6	<4.3	<5.0	<5.0	18	<7.8	12
GP-3-10	12/12/07	10	<1500	<48	<6.5	<7.7	<8.8	<27	<96	<14	-
GP-3-10	02/14/08	10	<1800	<48	<6.5	<7.7	<8.8	<27	-	<14	<10,000
GP-3-10	05/08/08	10	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-3-10</b>	<b>08/15/08</b>	<b>10</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	<b>-</b>	<b>&lt;14</b>	<b>&lt;10,000</b>
GP-4-5	08/04/06	5	705	<4.4	5.4	<4.6	<5.4	<5.4	<9.3	<8.4	<12
GP-4-5D <sub>i</sub>	08/04/06	5	599	-	-	-	-	-	-	-	-
GP-4-5	11/08/06	5	540	<4	<3.5	<4.1	<4.8	<4.8	<8.3	<7.5	<11
GP-4-5D <sub>f</sub>	11/08/06	5	610	<7.7	<6.8	<8.0	<9.2	<9.2	<16	<14	<21
GP-4-5	03/06/07*	5	-	-	-	-	-	-	-	-	-
GP-4-5	05/17/07	5	873	<4	<3.6	<4.2	<4.9	<4.9	15	<7.6	<11
GP-4-5	12/12/07	5	<1500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-4-5D <sub>f</sub>	12/12/07	5	<1500	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-4-5	02/14/08	5	<1800	<48	<6.5	<7.7	<8.8	<27	<96	<14	<10,000
GP-4-5	05/08/08	5	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-4-5</b>	<b>08/15/08</b>	<b>5</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	<b>-</b>	<b>&lt;14</b>	<b>&lt;10,000</b>
GP-4-10	08/04/06	10	564	<4.1	6.1	17	5.7	16	12	<7.8	<11
GP-4-10D <sub>f</sub>	08/05/06	10	529	<3.8	4.2	18	<4.6	17	18	<7.2	<10
GP-4-10	11/08/06	10	900	<4.0	<3.5	4.1	<4.8	5.2	<8.3	<7.5	<11
GP-4-10D <sub>i</sub>	11/08/06	10	880	<1.8	<1.6	<1.9	<2.2	<2.2	<3.8	<3.4	<4.9
GP-4-10	03/06/07*	10	-	-	-	-	-	-	-	-	-
GP-4-10	05/17/07^	10	-	-	-	-	-	-	-	-	-
GP-4-10	12/12/07	10	1,600	<48	<6.5	<7.7	<8.8	<27	<96	<14	<25
GP-4-10	02/14/08	10	-	-	-	-	-	-	-	-	-
GP-4-10	05/08/08	10	<1,800	<7.3	<6.5	<7.7	<8.8	<27	-	<14	<25
<b>GP-4-10</b>	<b>08/15/08</b>	<b>10</b>	<b>&lt;1,800</b>	<b>&lt;7.3</b>	<b>&lt;6.5</b>	<b>&lt;7.7</b>	<b>&lt;8.8</b>	<b>&lt;27</b>	<b>-</b>	<b>&lt;14</b>	<b>&lt;10,000</b>
<b>ESLs</b>			<b>26,000</b>	<b>9,400</b>	<b>85</b>	<b>63,000</b>	<b>420,000</b>	<b>150,000</b>	<b>1.9E+07</b>	<b>410</b>	<b>-</b>
<b>CHHSLs</b>			<b>-</b>	<b>4,000</b>	<b>36.2</b>	<b>135,000</b>	<b>pp</b>	<b>315,000</b>	<b>-</b>	<b>180</b>	<b>-</b>

**NOTES:**

- not sampled/analyzed

2-propanol (i.e., isopropyl alcohol) tracer/leak check compound

ft bgs = feet below ground surface

µg/m<sup>3</sup> = micrograms per cubic meter

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

PCE = tetrachloroethene

ESLs = Environmental Screening Levels - for residential land use

CHHSLs = California Human Health Screening Levels

pp = CHHSL postponed

\* = Sampling not possible due to seasonal wet soil conditions

^ = No sample analysis due to presence of free moisture in sample tubing

D<sub>f</sub> = after the probe/sample ID indicates a duplicate sample collected in the field

D<sub>i</sub> = after the probe/sample ID indicates a duplicate sample prepared and analyzed by the lab

TPH-g by modified EPA Method TO-3

BTEX, MTBE, Ethanol, PCE, 2-propanol by modified EPA Method TO-15

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)
MW-1S	08/10/07		100%	OFF	21	-	-	-	-	3,400	ND<14	68	210	30	160
	09/28/07	1,2	OFF	OFF	20	-	-	-	-	-	-	-	-	-	-
	10/17/07		100%	100%	21	0	0.0	20.9	0.0	380	ND<14	26	58	5.7	46
	11/16/07		50%	50%	21	2,800	0.5	20.7	0.5	3,200	ND<14	69	220	20	110
	12/26/07		50%	50%	18	3,000	1.5	20.7	0.4	3,900	ND<27	79	210	41	210
	01/22/08		100%	OFF	18	160	0.0	19.7	0.3	660	ND<14	5.8	23	2.7	28
	02/07/08	4	OFF	OFF	21.5	0	0.0	20.9	0.0	-	-	-	-	-	-
	03/18/08		100%	100%	14.5	0	xx	20.9	0.0	140	ND<0.68	1.3	6.9	0.78	6.9
	04/30/08		OFF	OFF	18	50	0	20.9	0.1	520	3.3	13	38	6.7	53
	05/29/08		OFF	OFF	19.5	-	-	-	-	-	-	-	-	-	-
	06/26/08		OFF	OFF	23	-	-	-	-	-	-	-	-	-	-
	07/30/08	7	<b>OFF</b>	<b>OFF</b>	<b>17</b>	<b>310</b>	<b>0</b>	<b>18.3</b>	<b>1.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	09/30/08		<b>OFF</b>	<b>100%</b>	<b>16.5</b>	<b>5</b>	<b>0</b>	<b>20.9</b>	<b>0.4</b>	<b>65</b>	<b>0.71</b>	<b>0.44</b>	<b>2.2</b>	<b>0.65</b>	<b>12</b>
MW-2S	08/10/07		100%	100%	21	-	-	-	-	11,000	ND<110	280	770	81	360
	09/28/07	1	100%	100%	20	5,900	2.5	20.6	0.4	5,100	ND<35	110	310	46	260
	10/17/07		100%	100%	21	1,450	1.0	20.9	0.1	1,900	ND<20	59	120	12	73
	11/16/07		100%	100%	21	4,600	2.5	20.7	0.5	5,800	ND<27	120	340	40	200
	12/26/07		100%	100%	18	2,600	1.5	20.9	0.4	3,100	ND<27	84	230	37	190
	01/22/08		100%	100%	18	1,000	0.5	17.7	0.6	3,000	ND<14	61	190	24	180
	02/07/08	5	100%	100%	21.5	1,000	0.5	20.9	0.2	-	-	-	-	-	-
	03/18/08		100%	100%	14.5	100	xx	20.9	0.6	1,400	2.3	17	51	13	81
	04/30/08		100%	OFF	18	190	0	20.7	0.5	1,900	ND<6.8	22	75	16	110
	05/29/08		OFF	OFF	19.5	-	-	-	-	-	-	-	-	-	-
	06/26/08		OFF	OFF	23	-	-	-	-	-	-	-	-	-	-
	07/30/08	7	<b>OFF</b>	<b>OFF</b>	<b>17</b>	<b>100</b>	<b>0</b>	<b>20.3</b>	<b>0.6</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	09/30/08		<b>OFF</b>	<b>100%</b>	<b>16.5</b>	<b>160</b>	<b>0</b>	<b>16.7</b>	<b>1.8</b>	<b>220</b>	<b>ND&lt;0.068</b>	<b>0.44</b>	<b>3.1</b>	<b>1.0</b>	<b>17</b>
MW-5S	08/10/07		100%	100%	21	-	-	-	-	54	ND<0.68	0.60	2.7	0.60	3.7
	09/28/07	1	100%	100%	20	8,000	5.5	20.2	0.3	3,800	ND<60	70	150	19	120
	10/17/07		100%	100%	21	880	0.5	20.9	0.1	1,100	ND<14	27	56	5.3	36
	11/16/07		100%	100%	21	4,600	3.0	20.0	0.7	3,800	ND<110	64	170	21	170
	12/26/07		OFF	OFF	18	200	0.0	20.9	0.0	140	ND<0.68	0.45	3.7	1.5	14
	01/22/08		100%	100%	18	300	0.0	18.0	0.4	760	ND<4.5	3.3	16	2.4	28
	02/07/08	4	OFF	OFF	21.5	-	-	-	-	-	-	-	-	-	-
	03/18/08		100%	100%	14.5	0	xx	19.9	0.3	580	ND<2.7	3	24	4.2	39
	04/30/08		OFF	OFF	18	0	0.0	19.4	1.0	2,000	ND<10	18	56	5.7	63
	05/29/08		OFF	OFF	19.5	-	-	-	-	-	-	-	-	-	-
	06/26/08		OFF	OFF	23	-	-	-	-	-	-	-	-	-	-
	07/30/08	7	<b>OFF</b>	<b>50%</b>	<b>17</b>	<b>1,000</b>	<b>0</b>	<b>14.0</b>	<b>2.8</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	09/30/08		<b>OFF</b>	<b>100%</b>	<b>16.5</b>	<b>1,850</b>	<b>0</b>	<b>16.0</b>	<b>2.8</b>	<b>2,000</b>	<b>ND&lt;14</b>	<b>27.0</b>	<b>61</b>	<b>6.2</b>	<b>87</b>

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)	
MW-6S	08/10/07	1	100%	100%	21	-	-	-	-	5,800	ND<30	69	280	24	140	
	09/28/07		100%	100%	20	>11,000	8.0	19.7	0.5	6,800	ND<60	100	360	34	190	
	10/17/07		100%	100%	21	1,350	0.5	20.9	0.1	1,700	ND<10	24	90	9.7	79	
	11/16/07		100%	50%	21	6,300	4.5	19.2	1.0	6,400	ND<27	56	270	40	310	
	12/26/07		100%	100%	18	4,600	2.5	18.5	1.3	4,200	ND<27	21	96	14	180	
	01/22/08		50%	100%	18	1,050	0.5	15.6	1.0	1,900	ND<14	11	74	13	100	
	02/07/08		-	-	21.5	-	-	-	-	-	-	-	-	-	-	-
	03/18/08		100%	100%	14.5	15	xx	20.5	0.1	230	ND<1.4	1.2	9.2	2.4	16	
	04/30/08		100%	100%	18	140	0.0	20.7	0.7	760	ND<6.8	3.5	18	3.2	36	
	05/29/08		OFF	OFF	19.5	-	-	-	-	-	-	-	-	-	-	
	06/26/08		OFF	100%	23	210	0.0	19.8	0.4	400	ND<10	2	18	3.1	24	
	<b>07/30/08</b>		<b>7</b>	<b>100%</b>	<b>OFF</b>	<b>17</b>	<b>270</b>	<b>0.0</b>	<b>20.2</b>	<b>0.7</b>	<b>460</b>	<b>ND&lt;4.5</b>	<b>1.7</b>	<b>14</b>	<b>2.2</b>	<b>19</b>
	<b>09/30/08</b>		<b>OFF</b>	<b>100%</b>	<b>16.5</b>	<b>570</b>	<b>0.0</b>	<b>17.4</b>	<b>2.0</b>	<b>640</b>	<b>ND&lt;14</b>	<b>7.7</b>	<b>42</b>	<b>3.7</b>	<b>31</b>	
MW-7S	08/10/07	1			21	-	-	-	-	19,000	ND<450	620	590	27	100	
	09/28/07		100%	100%	20	11,000	19	20.0	0.5	13,000	ND<150	350	630	69	370	
	10/17/07		100%	100%	21	0	0.0	20.9	0.0	390	ND<14	27	60	6	51	
	11/16/07		100%	50%	21	10,000	8.0	20.5	0.4	7,700	ND<45	170	390	47	280	
	12/26/07		100%	100%	18	5,500	3.0	20.4	0.5	4,700	ND<45	100	220	27	190	
	01/22/08		100%	100%	18	2,050	1.0	18.2	0.4	3,900	ND<14	69	200	20	210	
	02/07/08		-	-	21.5	-	-	-	-	-	-	-	-	-	-	
	03/18/08		100%	100%	14.5	390	xx	20.2	0.3	2,000	ND<5.0	25	81	11	78	
	04/30/08		100%	100%	18	600	1.0	19.0	1.2	4,100	ND<14	66	150	15	150	
	05/29/08		OFF	OFF	19.5	-	-	-	-	-	-	-	-	-	-	
	06/26/08		OFF	100%	23	5,200	1.5	15.8	2.7	4,800	ND<30	56	71	4	110	
	<b>07/30/08</b>		<b>7</b>	<b>100%</b>	<b>100%</b>	<b>17</b>	<b>2,750</b>	<b>0.5</b>	<b>18.3</b>	<b>1.7</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
	<b>09/30/08</b>		<b>OFF</b>	<b>100%</b>	<b>16.5</b>	<b>4,200</b>	<b>1.0</b>	<b>12.6</b>	<b>5.9</b>	<b>2,800</b>	<b>ND&lt;30</b>	<b>57</b>	<b>72</b>	<b>4.2</b>	<b>110</b>	
MW-10S	11/21/07	7	100%	100%	19	>44,000	43.0	17.0	2.2	28,000	ND<68	300	800	63	230	
	12/26/07		100%	100%	18	3,900	2.5	19.4	0.5	6,300	ND<14	55	350	64	300	
	01/22/08		100%	100%	16.5	1,850	0.5	16.1	0.5	4,700	ND<14	38	230	49	310	
	02/07/08		-	-	-	-	-	-	-	-	-	-	-	-	-	
	03/18/08		100%	100%	14.5	270	xx	19.0	0.9	2,100	ND<14	13	73	31	190	
	04/30/08		100%	100%	18	310	0.5	19.6	0.9	2,500	ND<14	11	76	33	230	
	05/29/08		100%	100%	18	1,750	0.0	19.6	0.8	1,800	ND<6.8	13	47	17	120	
	06/26/08		100%	100%	23	370	0.0	20.7	0.1	780	ND<1.4	4.1	15	4.9	38	
	<b>07/30/08</b>		<b>100%</b>	<b>100%</b>	<b>17</b>	<b>1,050</b>	<b>0.0</b>	<b>20.3</b>	<b>0.8</b>	<b>1,600</b>	<b>ND&lt;14</b>	<b>16</b>	<b>50</b>	<b>9.5</b>	<b>95</b>	
	<b>09/30/08</b>		<b>100%</b>	<b>OFF</b>	<b>16.5</b>	<b>640</b>	<b>0.0</b>	<b>20.9</b>	<b>0.4</b>	<b>690</b>	<b>ND&lt;4.0</b>	<b>10</b>	<b>29</b>	<b>5.1</b>	<b>53</b>	

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)	
MW-11S	11/21/07	7	100%	100%	19	36,600	26.5	19.2	2.2	20,000	ND<68	240	640	63	240	
	12/26/07		50%	100%	18	1,350	0.5	20.9	0.2	3,400	ND<75	50	220	50	230	
	01/22/08		100%	100%	16.5	1,000	0.0	19.3	0.2	3,000	ND<30	81	190	39	230	
	02/07/08		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03/18/08		100%	100%	14.5	130	xx	20.0	0.3	1,700	ND<14	26	66	26	150	
	04/30/08		100%	100%	18	120	0.0	20.9	0.2	600	ND<5.0	6.7	23	5.9	49	
	05/29/08		100%	100%	18	950	0.0	20.9	0.3	1,800	ND<30	24	47	18	120	
	06/26/08		100%	100%	23	480	0.0	20.9	0.1	940	ND<15	12	28	8.4	57	
	<b>07/30/08</b>		<b>100%</b>	<b>100%</b>	<b>17</b>	<b>980</b>	<b>0.0</b>	<b>20.9</b>	<b>0.3</b>	<b>1,600</b>	<b>ND&lt;30</b>	<b>22</b>	<b>50</b>	<b>13</b>	<b>100</b>	
	<b>09/30/08</b>		<b>100%</b>	<b>OFF</b>	<b>16.5</b>	<b>510</b>	<b>0.0</b>	<b>20.9</b>	<b>0.2</b>	<b>490</b>	<b>ND&lt;10</b>	<b>11</b>	<b>22</b>	<b>3.8</b>	<b>40</b>	
MW-12S	11/21/07	7	50%	50%	19	110	0.0	20.9	0.7	1,400	ND<100	87	51	10	40	
	12/26/07		50%	50%	18	720	0.0	20.9	0.1	1,200	ND<45	27	100	13	74	
	01/22/08		100%	100%	16.5	630	0.0	19.3	0.2	1,100	ND<45	14	50	8.4	65	
	02/07/08		-	-	-	-	-	-	-	-	-	-	-	-	-	
	03/18/08		100%	100%	14.5	0	xx	20.9	0.0	460	ND<30	42	32	4.2	36	
	04/30/08		100%	100%	18	65	0.0	20.9	0.2	390	5	8.8	17	3.9	30	
	05/29/08		100%	100%	18	150	0.0	20.9	0.3	490	ND<10	14	23	4.4	30	
	06/26/08		100%	100%	23	140	0.0	20.9	0.1	300	4.1	5.1	14	2.6	22	
	<b>07/30/08</b>		<b>100%</b>	<b>100%</b>	<b>17</b>	<b>240</b>	<b>0.0</b>	<b>20.9</b>	<b>0.3</b>	<b>450</b>	<b>ND&lt;5.0</b>	<b>4.5</b>	<b>20</b>	<b>3.8</b>	<b>32</b>	
	<b>09/30/08</b>		<b>100%</b>	<b>OFF</b>	<b>16.5</b>	<b>190</b>	<b>0.0</b>	<b>20.9</b>	<b>0.2</b>	<b>230</b>	<b>ND&lt;5.0</b>	<b>3.9</b>	<b>12</b>	<b>2.2</b>	<b>28</b>	
AS	10/17/07	7	100%	100%	-	0	0.0	20.9	0.0	130	ND<1.4	4.3	11	1.4	12	
	11/08/07		100%	100%	-	0	0.0	20.9	0.0	19	ND<0.68	0.60	1.8	0.18	3.2	
	01/15/08		100%	100%	-	-	-	-	-	1,100	19	31	100	17	180	
	01/31/08		100%	100%	-	-	-	-	-	69	ND<4.5	1.7	5.0	0.81	11	
	02/07/08		100%	100%	-	0	0.0	20.9	0.0	31	1.4	0.47	1.5	0.21	4.1	
	03/18/08		100%	100%	-	-	-	-	-	31	0.71	0.60	1.8	0.34	3.2	
	04/30/08		100%	100%	-	10	0.0	20.9	0.0	37	ND<0.68	0.36	1.4	0.34	4.1	
	05/29/08		100%	100%	-	60	0.0	20.9	0.0	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	0.16	
	06/26/08		100%	100%	-	10	0.0	20.9	0.0	44	0.97	0.89	2.5	0.54	6.3	
	<b>07/30/08</b>		<b>100%</b>	<b>100%</b>	<b>-</b>	<b>0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>	<b>41</b>	<b>ND&lt;1.4</b>	<b>0.81</b>	<b>2.2</b>	<b>0.20</b>	<b>4.2</b>	
<b>09/30/08</b>	<b>100%</b>	<b>100%</b>	<b>-</b>	<b>0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>			

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)
<b>PRED</b>	06/28/07		-	-	18.5	-	-	-	-	-	-	-	-	-	-
	07/11/07		-	-	21.5	10,750	-	-	-	6,600	ND<90	180	340	39	190
	07/27/07		-	-	20	>11,000	-	-	-	11,000	ND<75	170	330	38	160
	08/01/07		-	-	19	6,000	9.1	18.5	1.1	5,500	ND<70	140	250	16	71
	08/10/07		-	-	21	-	-	-	-	7,700	ND<90	210	410	41	190
	09/28/07	1	-	-	20	5,700	3.5	20.7	0.3	4,000	ND<50	90	170	9.3	42
	10/17/07		-	-	21	9,050	-	-	-	5,100	ND<60	130	210	8.6	51
	11/08/07		-	-	21	0	0.0	20.9	0.0	4,000	ND<0.68	0.35	2.2	0.68	6.6
	11/16/07		-	-	21	6,100	4.5	20.3	0.7	6,000	ND<27	100	250	27	170
	11/21/07		-	-	19	12,000	13.5	19.4	1.2	2,500	ND<14	39	120	16	79
	12/04/07		-	-	20	10,500	9.5	18.8	0.9	7,900	ND<32	120	340	48	280
	12/26/07		-	-	18	3,650	2.0	20.9	0.5	4,100	ND<27	72	250	42	270
	01/08/08	3	-	-	18	-	-	-	-	-	-	-	-	-	-
	01/15/08		-	-	19	710	0.0	20.0	0.3	1,900	ND<14	29	89	16	100
	01/22/08		-	-	18	800	0.0	17.8	0.5	1,900	ND<14	34	100	13	100
	01/31/08		-	-	21	1,250	0.5	20.9	0.5	2,200	ND<14	36	120	19	160
	02/07/08		-	-	21.5	700	0.0	20.9	0.4	2,000	ND<35	34	110	10	130
	03/18/08		-	-	14.5	160	xx	15.3	0.9	630	ND<3.0	7.0	25	5.6	38
	04/30/08		-	-	18	280	0.5	20.2	0.0	2,100	ND<5.0	20	63	16	120
	05/29/08		-	-	19.5	1,500	0.0	19.6	0.8	2,100	ND<10	21	45	18	120
	06/26/08		-	-	23	280	0.5	20.2	0.0	860	ND<5.0	11	27	6.5	50
	<b>07/30/08</b>	<b>7</b>	-	-	<b>17</b>	<b>1,350</b>	<b>0.0</b>	<b>19.3</b>	<b>1.1</b>	<b>2,200</b>	<b>ND&lt;6.8</b>	<b>24</b>	<b>62</b>	<b>10</b>	<b>90</b>
	<b>09/30/08</b>		-	-	<b>16.5</b>	<b>1,650</b>	<b>0.5</b>	<b>14.4</b>	<b>3.7</b>	<b>1,100</b>	<b>ND&lt;10</b>	<b>20</b>	<b>42</b>	<b>8.2</b>	<b>78</b>



**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)	
<b>POSTD</b>	06/28/07		-	-	-	10,000	6.5	18.2	1.4	3,800	ND<60	120	160	22	110	
	07/11/07		-	-	-	3,550	-	-	-	1,400	ND<14	36	82	12	67	
	07/27/07		-	-	-	4,550	-	-	-	3,400	ND<14	56	120	15	70	
	08/01/07		-	-	-	5,200	-	-	-	2,500	ND<27	59	140	17	95	
	08/10/07		-	-	-	4,800	2.0	19.9	0.5	5,300	ND<45	130	290	37	180	
	09/28/07		-	-	-	6,750	4.0	20.7	0.3	4,800	ND<60	100	210	23	120	
	10/17/07		-	-	-	4,500	2.5	20.9	0.0	1,800	ND<14	41	110	14	100	
	11/08/07		-	-	-	1,300	1.0	20.9	0.4	2,000	ND<15	42	100	12	88	
	11/16/07		-	-	-	4,150	2.0	20.5	0.4	3,600	ND<14	58	190	25	180	
	11/21/07		-	-	-	8,600	7.5	20.5	0.8	5,500	ND<25	75	210	28	130	
	12/04/07		-	-	-	6,500	5.0	19.8	0.6	3,400	ND<16	44	120	22	120	
	12/26/07		-	-	-	2,000	1.0	20.9	0.3	1,300	ND<45	26	96	15	100	
	01/08/08		-	-	-	1,200	0.5	20.9	0.3	1,700	ND<14	23	79	13	83	
	01/15/08		-	-	-	45	0.0	20.7	0.0	620	ND<14	11	39	6.6	44	
	01/22/08		-	-	-	280	0.0	20.2	0.0	1,100	ND<14	14	50	8.4	65	
	01/31/08		-	-	-	470	0.0	20.9	0.1	770	ND<14	12	38	6.9	62	
	02/07/08		-	-	-	120	0.0	20.9	0.0	690	ND<6.8	10	37	6.6	58	
	03/18/08		-	-	-	75	xx	20.2	0.4	310	ND<3.5	3.9	12	3	20	
	04/30/08		-	-	-	55	0.0	20.9	0.2	700	ND<2.0	7.6	23	5	42	
	05/29/08		-	-	-	630	0.0	20.7	0.2	500	ND<3.5	5.4	12	4.1	29	
	06/26/08		-	-	-	55	0.0	20.9	0.2	620	ND<10	7.8	25	5.4	45	
	<b>07/30/08</b>	<b>6,7</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<b>09/30/08</b>		-	-	-	-	-	-	-	-	-	-	-	-	-	-

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethyl-benzene (ppmv)	Xylenes (ppmv)
<b>STACK</b>	06/28/07		-	-	-	0	0.0	12.3	5.4	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	07/27/08		-	-	-	-	-	-	-	-	-	-	-	-	-
	08/10/07		-	-	-	-	-	-	-	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	09/28/07		-	-	-	0	0.0	14.0	4.5	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	10/17/07		-	-	-	-	-	-	-	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	11/08/07		-	-	-	-	-	-	-	21	ND<0.68	0.24	1.5	0.29	2.4
	11/16/07		-	-	-	0	0.0	14.8	4.8	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	12/26/07		-	-	-	-	-	-	-	-	-	-	-	-	-
	01/18/08		-	-	-	-	-	-	-	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	02/07/08		-	-	-	0	0.0	19.0	1.7	-	-	-	-	-	-
	03/18/08		-	-	-	0	xx	18.0	1.9	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	04/30/08		-	-	-	0	0.0	17.7	2.0	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	05/29/08		-	-	-	0	0.0	17.7	2.5	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	06/26/08		-	-	-	0	0.0	17.9	1.9	ND<7.0	ND<0.68	ND<0.077	ND<0.065	ND<0.057	ND<0.057
	<b>07/30/08</b>	<b>7</b>	-	-	-	<b>0</b>	<b>0.0</b>	<b>17.0</b>	<b>1.8</b>	<b>27</b>	<b>ND&lt;0.68</b>	<b>0.09</b>	<b>0.64</b>	<b>0.16</b>	<b>2.1</b>
<b>09/30/08</b>		-	-	-	<b>0</b>	<b>0.0</b>	<b>16.1</b>	<b>2.0</b>	<b>ND&lt;7.0</b>	<b>ND&lt;0.68</b>	<b>ND&lt;0.077</b>	<b>ND&lt;0.065</b>	<b>ND&lt;0.057</b>	<b>ND&lt;0.057</b>	
<b>DL</b>						<b>5.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>7.0</b>	<b>0.68</b>	<b>0.077</b>	<b>0.065</b>	<b>0.057</b>	<b>0.057</b>

**TABLE 5: HVDPE VAPOR INLET SAMPLE ANALYTICAL & FIELD SCREENING DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Port ID	Sample Date	Notes	Initial Valve Position	Final Valve Position	Manifold Vacuum (in-Hg)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	TPH-g (ppmv)	MTBE (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Xylenes (ppmv)
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**NOTES:**

TPH-g = total petroleum hydrocarbons as gasoline  
 MTBE = methyl tertiary-butyl ether  
 in-Hg = inches of mercury  
 ppmv = parts per million by volume  
 % = percent concentration by volume  
 PRED = pre-dilution sample port at combined inlet  
 POSTD = post-dilution sample part at thermal/catalytic oxidizer inlet  
 - not sampled/analyzed

xx = methane sensor damaged; pending replacement  
 TVH = total volatile hydrocarbons (calibrated w/ hexane)  
 CH4 = methane by infrared detection (0 to 100% by volume)  
 O2 = oxygen by electrochemical detection (0-40% by volume)  
 CO2 = carbon dioxide by infrared detection (0 to 20% by volume)  
 TVH, CH4, O2, and CO2 measured RKI Eagle gas detector

DL = detection limit for dilution factor of 1  
 TPH-g by EPA Method 8015C  
 BTEX & MTBE by EPA Method 8021B

- 1) Individual well water separator trap used for the 1st time.
- 2) Vacuum leak detected at wellhead due to broken wellhead seal.
- 3) Pump failed, not strong enough to collect sample from PRED @ 18 in-Hg.
- 4) Opened 100% for field screening, turned OFF after screening, no lab sample collected.
- 5) Opened 100% for field screening, no lab sample collected.
- 6) Discontinued POSTD process sampling port starting in the 3rd Quarter, 2008 because it no longer provides any additional useful information.
- 7) HVDPE system shutdown most of the month of August for quarterly soil gas monitoring and pending repair of the rotary phase converter.
- 8)
- 9)
- 10)

**TABLE 6: GROUNDWATER TREATMENT SYSTEM SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Sample ID	Sample Date	Notes	TOG (mg/L)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
<b>INF</b>	06/26/07	1	-	20,000	<1500	1,400	2,300	350	3,000
	06/27/07		-	25,000	1,300	2,300	3,400	490	3,100
	06/28/07		-	28,000	1,500	2,300	4,800	540	3,300
	07/12/07		-	8,300	150	660	1,500	120	1,300
	08/22/07	2	-	16,000	130	610	2,000	300	2,400
	10/17/07	3,4	-	25,000	<250	990	3,000	380	3,600
	11/07/07		-	21,000	<500	730	2,600	300	4,800
	12/12/07	5	-	75,000	<250	1,200	9,900	1,700	12,000
	01/08/08		-	12,000	320	260	1,100	170	2,900
	03/18/08		-	4,100	480	150	240	52	520
	04/01/08		-	2,400	60	37	140	20	390
	04/30/08		-	8,600	170	150	630	160	2,200
	05/29/08		-	13,000	310	140	470	170	1,800
	06/26/08		-	7,600	260	130	360	82	1,100
	<b>07/30/08</b>		-	<b>9,400</b>	<b>220</b>	<b>160</b>	<b>510</b>	<b>60</b>	<b>1,100</b>
<b>09/30/08</b>		-	<b>6,100</b>	<b>270</b>	<b>240</b>	<b>370</b>	<b>49</b>	<b>780</b>	
<b>POST-AS</b>	06/26/07	1	-	1,000	92	19	34	6.8	48
	06/27/07		-	420	45	7.8	13	2.1	22
	06/28/07		-	6,400	570	610	890	59	750
	07/12/07		-	-	-	-	-	-	-
	08/22/07	2	-	5,300	100	610	2,000	300	2,400
	10/17/07	3,4	-	84	12	0.90	2.6	<0.5	7
	11/07/07		-	120	41	0.71	1.9	<0.5	12
	12/12/07	5	-	65,000	<250	210	3,400	1,300	11,000
	01/08/08		-	130	55	0.85	2.8	<0.5	12
	03/18/08		-	120	190	2.5	3.5	0.77	7.2
	04/01/08		-	140	<5.0	5.6	0.60	<0.5	1.7
	04/30/08		-	<50	11	0.56	<0.5	<0.5	1.1
	05/29/08		-	100	20	<0.5	<0.5	<0.5	6.7
	06/26/08		-	70	27	<0.5	1.1	<0.5	6.3
	<b>07/30/08</b>		-	<b>130</b>	<b>16</b>	<b>1.1</b>	<b>3.3</b>	<b>0.73</b>	<b>10</b>
<b>09/30/08</b>		-	<b>94</b>	<b>15</b>	<b>0.85</b>	<b>1.6</b>	<b>&lt;0.5</b>	<b>5</b>	
<b>POST-C1</b>	06/26/07	1	-	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	08/22/07	2	-	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	10/17/07	3,4	-	<50	<5.0	<0.5	<0.5	<0.5	<0.5

**TABLE 6: GROUNDWATER TREATMENT SYSTEM SAMPLE ANALYTICAL DATA**

Vic's Auto, 245 8th Street, Oakland, California

Sample ID	Sample Date	Notes	TOG (mg/L)	TPH-g (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)
<b>EFF</b>	06/26/07	1	<5.0	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	08/22/07	2	-	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	10/17/07	3,4	-	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	11/07/07		-	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	12/12/07	5	-	<50	17	<0.5	<0.5	<0.5	<0.5
	01/08/08		-	<50	17	<0.5	<0.5	<0.5	<0.5
	03/18/08	6	<5.0	<50	50	<0.5	<0.5	<0.5	<0.5
	04/01/08		-	-	-	-	-	-	-
	04/30/08		<5.0	<50	30	<0.5	<0.5	<0.5	<0.5
	05/29/08		-	<50	27	<0.5	<0.5	<0.5	<0.5
	06/26/08		-	<50	37	<0.5	<0.5	<0.5	<0.5
	<b>07/30/08</b>		-	<b>&lt;50</b>	<b>30</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
	<b>09/23/08</b>		<5.0	-	-	-	-	-	-
	<b>09/30/08</b>		-	<50	18	<0.5	<0.5	<0.5	<0.5
<b>DL</b>	-	-	<b>5.0</b>	<b>50</b>	<b>5.0</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>

**NOTES:**

- not sampled/analyzed

µg/L = micrograms per liter or parts per billion (ppb)

mg/L = milligrams per liter or parts per million (ppm)

TOG = total oil and grease hydrocarbon

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

**DL = detection limit for dilution factor of 1**

TOG by EPA Method 1664 HEM-SGT

TPH-g by EPA Method 8015C

BTEX & MTBE by EPA Method 8021B

- 1) System startup and first discharge to sanitary sewer
- 2) Bag filter (LCO8) pre-filter for sediment removal installed and started up on 08/17/07
- 3) 1,000-pound (PV-1000) carbon absorber (up to 75 psig) installed on 10/5/07 and started up on 10/9/07
- 4) 200-pound (ASC-200) carbon absorber (i.e., C-2) taken offline permanently on 10/25/07
- 5) Extraction wells MW-10, MW-11, and MW-12 brought online 11/20/07
- 6) Metal analysis no longer required per email from EBMUD, dated January 31, 2008
- 7)
- 8)
- 9)
- 10)

**TABLE 7: SOIL GAS FIELD SCREENING DATA SUMMARY (TVH, CH4, O2, & CO2)**

Vic's Auto, 245 8th Street, Oakland, California

Soil Gas Probe ID	Date	Notes	Vacuum Influence (in-H2O)	Purge Vacuum (in-H2O)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)
GP-1-5'	05/17/07	4	0.00	-	0.11	0.0	18.0	2.2
	06/12/07		0.00	-	0.0	0.0	18.6	2.4
	08/01/07		0.40	-	0.0	0.0	20.9	0.0
	08/10/07		0.35	-	0.0	0.0	20.9	0.0
	10/05/07		0.00	-	0.0	0.0	20.9	0.3
	11/07/07		0.24	1.50	0.0	0.0	20.9	0.0
	11/21/07		0.84	1.50	0.0	0.0	20.9	0.0
	03/28/08		<0.10	>50	0.0	xx	20.9	0.0
	04/30/08	5	0.00	<1.00	0.0	0.0	20.9	0.1
	<b>08/15/08</b>		<b>0.00</b>	<b>1.50</b>	<b>0.0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>
GP-1-10'	05/17/07	4	0.00	-	-	-	-	-
	06/12/07		0.00	-	0.0	0.0	18.7	2.2
	08/01/07		0.44	-	0.0	0.0	20.9	0.0
	08/10/07		0.38	-	0.0		20.9	0.0
	10/05/07		0.00	-	0.0	0.0	20.9	0.3
	11/07/07		0.27	2.00	0.0	0.0	20.9	0.0
	11/21/07		0.59	1.50	0.0	0.0	20.9	0.0
	03/28/08	1	-	-	-	-	-	-
	04/30/08	5	0.14	<1.00	0.0	0.0	20.9	0.1
	<b>08/15/08</b>		<b>0.00</b>	<b>1.00</b>	<b>0.0</b>	<b>0.0</b>	<b>18.5</b>	<b>0.1</b>
GP-2-5'	05/17/07	4	0.00	-	0.14	0.0	19.0	1.5
	06/12/07		0.00	-	0.0	0.0	19.0	1.7
	08/01/07		0.00	-	0.0	0.0	20.9	0.3
	08/10/07		0.04	-	0.0	0.0	20.9	0.2
	10/05/07		0.00	-	0.0	0.0	20.9	0.1
	11/07/07		0.08	4.00	0.0	0.0	20.9	0.0
	11/21/07		0.04	1.50	0.0	0.0	20.9	0.0
	03/28/08	1	-	-	-	-	-	-
	04/30/08	5	0.01	2.00	0.0	0.0	20.9	0.0
	<b>08/15/08</b>		<b>0.00</b>	<b>3.00</b>	<b>0.0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>
GP-2-10'	05/17/07	4	0.00	-	0.18	0.0	18.0	1.5
	06/12/07	2	0.00	-	-	-	-	-
	08/01/07		0.08	-	0.0	0.0	20.8	0.5
	08/10/07		0.00	-	0.0	0.0	20.9	0.2
	10/05/07		0.00	-	0.0	0.0	20.9	0.1
	11/07/07		<0.10	24.0	0.0	0.0	20.9	0.0
	11/21/07		1.70	35.0	0.0		20.9	0.0
	03/28/08	1	-	-	-	-	-	-
	04/30/08	5	3.50	2.00	0.0	0.0	20.9	0.0
	<b>08/15/08</b>		<b>0.00</b>	<b>3.00</b>	<b>0.0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>
GP-3-5'	05/17/07	4	0.00	-	0.14	0.0	20.0	0.48
	06/12/07		0.00	-	0.0	0.0	20.9	0.4
	08/10/07		0.01	-	0.0	0.0	20.9	0.3
	10/05/07		0.00	-	0.0	0.0	20.9	0.2
	11/07/07		<0.10	1.00	0.0	0.0	20.9	0.2
	11/21/07		0.05	1.00	0.0	0.0	20.9	0.0
	03/28/08		<0.10	43.0	0.0	xx	20.5	0.1
	04/30/08	5	0.02	<1.00	0.0	0.0	20.9	0.1
	<b>08/15/08</b>		<b>0.00</b>	<b>1.00</b>	<b>0.0</b>	<b>0.0</b>	<b>20.9</b>	<b>0.0</b>

**TABLE 7: SOIL GAS FIELD SCREENING DATA SUMMARY (TVH, CH4, O2, & CO2)**

Vic's Auto, 245 8th Street, Oakland, California

Soil Gas Probe ID	Date	Notes	Vacuum Influence (in-H2O)	Purge Vacuum (in-H2O)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)	
GP-3-10'	05/17/07	4	0.00	-	0.37	0.0	2.4	3.4	
	06/12/07		0.00	-	0.0	0.0	10.5	1.8	
	08/10/07		0.16	-	0.0	0.0	16.8	2.2	
	10/05/07		0.00	-	0.0	0.0	20.8	1.2	
	11/07/07		0.30	55.0	0.0	0.0	20.9	0.5	
	11/21/07		5.20	47.0	0.0	0.0	20.9	0.2	
	03/28/08	3	1.00	>150	0.0	xx	20.0	0.0	
	04/30/08		5	9.00	110	0.0	0.0	20.9	0.1
	<b>08/15/08</b>			<b>0.00</b>	<b>50.0</b>	-	-	<b>20.9</b>	<b>0.0</b>
GP-4-5'	05/17/07	4	0.00	-	0.21	0.0	20.0	0.7	
	06/12/07		0.00	-	0.0	0.0	20.8	0.6	
	08/10/07		0.02	-	0.0	0.0	20.9	0.4	
	10/05/07		0.00	-	0.0	0.0	20.9	0.5	
	11/07/07		<0.10	0.85	0.0	0.0	20.9	0.3	
	11/21/07		0.00	0.50	0.0	0.0	20.9	0.0	
	03/28/08	5	<0.10	47.0	0.0	xx	20.0	0.0	
	04/30/08		0.02	<1.00	0.0	0.0	20.9	0.2	
	<b>08/15/08</b>		<b>0.00</b>	<b>1.00</b>	-	-	<b>20.9</b>	<b>0.0</b>	
GP-4-10'	05/17/07	4	0.00	-	-	-	-	-	
	06/12/07	2	0.00	-	-	-	-	-	
	08/10/07		0.08	-	0.0	0.0	20.4	0.2	
	10/05/07		0.00	-	0.0	0.0	20.9	0.5	
	11/07/07		<0.1	80.0	0.0	0.0	20.9	0.3	
	11/21/07		<0.1	>50.0	0.0	0.0	20.9	0.0	
	03/28/08	2,3	<0.1	>150	0.0	xx	20.5	0.0	
	04/30/08	1,5	0.20	>150	-	-	-	-	
	<b>08/15/08</b>		<b>0.00</b>	<b>&gt;50.0</b>	-	-	<b>19.0</b>	<b>0.1</b>	
<b>DL</b>	<b>-</b>	<b>-</b>	<b>varies</b>	<b>varies</b>	<b>5.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	

**NOTES:**

- not sampled/analyzed

in-H2O = inches of water

ppmv = parts per million by volume

% = percent concentration by volume

xx = methane sensor damaged; pending replacement

DL = detection limit for dilution factor of 1

TVH = total volatile hydrocarbons (calibrated w/ hexane)

CH4 = methane

O2 = oxygen

CO2 = carbon dioxide

TVH, CH4, O2, and CO2 measured w/ RKI Eagle gas detector

1) Soil gas sample collection not possible due to wet or saturated soil conditions

2) Moisture present within the sample tubing

3) High purge vacuum may indicate wet or saturated soil conditions

4) TPH-g by modified EPA Method TO-3 GC/FID and CH4, O2, and CO2 by modified method ASTM D-1946 GC/FID or GC/TCD

5) Soil gas probe screened for TVH, CH4, O2, and CO2 approximatley one week prior to sampling for vapor intrusion evaluation

**TABLE 8: WELLHEAD VACUUM & DROP TUBE DEPTH DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Date	MW-1			MW-2			MW-5			MW-6			MW-7		
	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)
06/26/07	1.5	8.0	15.0	6.0	9.0	15.0	OFF	OFF	15.0	5.5	10.0	15.0	6.5	10.0	15.0
06/27/07	2.0	7.0	15.0	5.5	9.0	15.0	OFF	OFF	15.0	5.0	9.5	15.0	5.0	9.5	15.0
06/28/07	1.5	8.0	15.0	5.0	10.0	15.0	OFF	OFF	15.0	5.0	9.0	15.0	6.0	10.0	15.0
07/12/07	2.0	8.0	15.0	6.0	9.0	15.0	10.0	12.0	15.0	5.0	10.0	15.0	6.0	10.0	15.0
08/01/07	1.5	7.0	15.0	5.5	10.0	15.0	OFF	OFF	15.0	5.0	9.5	15.0	5.5	11.0	15.0
08/10/07	5.0	10.0	17.0	9.5	16.0	17.0	OFF	OFF	15.0	10.0	12.5	17.0	9.0	15.5	17.0
09/11/07	5.5	17.0	16.0	5.5	16.5	16.0	OFF	OFF	15.0	9.0	10.0	19.5	8.0	12.0	19.5
09/28/07	3.0	7.5	24.0	8.0	17.0	20.0	2.5	8.0	20.0	16.0	17.0	20.0	9.0	15.0	20.0
10/01/07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/21/07	3.0	10.0	25.0	11.0	15.0	21.0	OFF	OFF	20.0	12.0	12.0	20.0	OBSTRUCTED		
12/26/07	OFF	OFF	25.0	OBSTRUCTED			OFF	OFF	20.0	18.0	13.5	20.0	11.5	15.5	20.0
01/15/08	OFF	OFF	25.0	11.0	14.0	21.0	OFF	OFF	20.0	16.5	11.5	20.0	12.0	14.0	20.0
02/07/08	5.0	9.5	25.0	10.0	13.0	20.0	OFF	OFF	20.0	15.5	14.0	19.0	15.5	21.0	20.0
03/18/08	9.0	10.0	25.0	5.5	11.5	19.0	nm	9.5	21.0	8.0	9.5	20.0	8.5	12.0	21.0
04/24/08	7.0	7.0	25.0	3.0	7.0	19.0	nm	7.0	21.0	5.0	5.0	21.0	4.0	7.0	21.0
05/29/08	OFF	OFF	25.0	OFF	OFF	19.0	OFF	OFF	21.0	OFF	OFF	21.0	OFF	OFF	21.0
06/26/08	OFF	OFF	25.0	OFF	OFF	20.0	OFF	OFF	22.0	OFF	OFF	21.0	OFF	OFF	21.0
<b>07/30/08</b>	<b>OFF</b>	<b>OFF</b>	<b>25.0</b>	<b>OFF</b>	<b>OFF</b>	<b>20.0</b>	<b>OFF</b>	<b>OFF</b>	<b>22.0</b>	<b>5.0</b>	<b>15.0</b>	<b>21.0</b>	<b>4.5</b>	<b>15.0</b>	<b>21.0</b>
<b>09/30/08</b>	<b>OFF</b>	<b>OFF</b>	<b>25.0</b>	<b>OFF</b>	<b>OFF</b>	<b>20.0</b>	<b>nm</b>	<b>8.0</b>	<b>22.0</b>	<b>OFF</b>	<b>OFF</b>	<b>21.0</b>	<b>OFF</b>	<b>OFF</b>	<b>21.0</b>

**NOTES:**

in-Hg = inches of mercury (gauge pressure)

ft toc = depth in feet as measured from the top of the well casing

nm = not measured due to broken vacuum gauge



**TABLE 8: WELLHEAD VACUUM & DROP TUBE DEPTH DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Date	MW-10			MW-11			MW-12								
	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)	Casing Vacuum (in-Hg)	Stinger Vacuum (in-Hg)	Stinger Depth (ft toc)
06/28/07	-	-	-	-	-	-	-	-	-						
07/12/07	-	-	-	-	-	-	-	-	-						
08/01/07	-	-	-	-	-	-	-	-	-						
08/10/07	-	-	-	-	-	-	-	-	-						
09/11/07	-	-	-	-	-	-	-	-	-						
09/28/07	-	-	-	-	-	-	-	-	-						
10/01/07	-	-	-	-	-	-	-	-	-						
11/21/07	n/a	13.0	18.0	n/a	11.0	19.0	n/a	14.0	19.0						
12/26/07	n/a	11.0	18.0	n/a	10.5	19.0	n/a	14.5	19.0						
01/15/08	n/a	10.0	18.0	n/a	9.0	19.0	n/a	12.0	19.0						
02/01/08	n/a	9.0	18.0	n/a	10.0	19.0	n/a	15.0	19.0						
03/18/08	n/a	7.5	18.0	n/a	9.0	19.0	n/a	9.0	20.5						
04/24/08	n/a	0.0	18.0	n/a	0.0	19.0	n/a	4.0	19.0						
05/29/08	n/a	11.0	20.0	n/a	14.0	20.0	n/a	13.0	20.0						
06/26/08	n/a	12.0	20.0	n/a	15.0	20.0	n/a	14.0	20.0						
<b>07/30/08</b>	<b>n/a</b>	<b>10.0</b>	<b>20.0</b>	<b>n/a</b>	<b>13.0</b>	<b>20.0</b>	<b>n/a</b>	<b>12.0</b>	<b>20.0</b>						
<b>09/30/08</b>	<b>n/a</b>	<b>15.0</b>	<b>22.0</b>	<b>n/a</b>	<b>15.0</b>	<b>22.0</b>	<b>n/a</b>	<b>15.0</b>	<b>22.0</b>						

**NOTES:**

in-Hg = inches of mercury (gauge pressure)

ft toc = depth in feet as measured from the top of the well casing

n/a = casing vacuum gauges not installed at this well

**TABLE 9: HVDPE PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Possible Runtime (days)	Possible Runtime (hrs)	Hour Meter Reading	Actual Runtime (days)	Actual Runtime (hrs)	System Runtime (%)	Inlet Temp (°F)	Inlet Vac (in-Hg)	Well Velocity (fpm)	Well Flow (scfm)	PRED TPH-g (ppmv)	Mass Removal Rate (lbs/day)	Total Mass Removed (pounds)	Total Mass Removed (gallons)
06/28/07	1 Startup	-	-	10	-	-	-	60	18	850	42	-	-	0	0
07/11/07		13	312	53	2	43	14%	60	22	1,725	85	6,600	224	402	67
07/27/07		16	384	103	2	51	13%	60	20	1,700	83	11,000	368	1,180	197
08/01/07		5	120	160	2	57	47%	60	19	1,900	93	5,500	206	1,668	278
08/10/07	2,3	9	216	350	8	189	88%	60	22	1,800	88	7,700	273	3,820	637
09/28/07	4	49	1176	896	23	546	46%	60	20	1,700	83	4,000	134	6,865	1,144
10/17/07		19	456	1,239	14	343	75%	60	21	1,100	54	5,100	110	8,446	1,408
11/08/07		22	528	1,709	20	470	89%	60	22	1,100	54	4,000	87	10,141	1,690
11/16/07		8	192	1,874	7	166	86%	60	21	1,100	54	6,000	130	11,038	1,840
11/21/07	5	5	120	1,994	5	120	100%	60	20.5	1,500	74	2,500	74	11,407	1,901
12/04/07		13	312	2,231	10	236	76%	60	20	1,150	56	7,900	179	13,168	2,195
12/26/07		22	528	2,566	14	335	63%	60	18	1,300	64	4,100	105	14,633	2,439
01/15/08		20	480	3,016	19	451	94%	60	19	1,200	59	1,900	45	15,476	2,579
01/22/08	6,7	7	168	3,064	2	48	29%	60	18	1,500	74	1,900	56	15,589	2,598
01/31/08		9	216	3,276	9	212	98%	60	20	1,250	61	2,200	54	16,067	2,678
02/07/08		7	168	3,443	7	167	99%	60	22	1,100	54	2,000	43	16,368	2,728
03/18/08	8,9	40	960	3,653	9	210	22%	60	15	1,400	69	630	17	16,520	2,753
04/01/08		14	336	3,952	12	299	89%	60	19	1,500	74	2,100	62	17,292	2,882
04/30/08		29	696	4,591	27	639	92%	60	19	1,900	93	2,100	79	19,383	3,231
05/29/08		29	696	4,978	16	387	56%	60	19.5	900	44	2,100	37	19,983	3,331
06/26/08		28	672	5,489	21	511	76%	60	23	1,200	59	860	20	20,416	3,403
<b>07/30/08</b>		<b>34</b>	<b>816</b>	<b>6,184</b>	<b>29</b>	<b>694</b>	<b>85%</b>	<b>60</b>	<b>17</b>	<b>1,600</b>	<b>79</b>	<b>2,200</b>	<b>69</b>	<b>22,422</b>	<b>3,737</b>
<b>09/30/08</b>		<b>62</b>	<b>1488</b>	<b>6,673</b>	<b>20</b>	<b>489</b>	<b>33%</b>	<b>60</b>	<b>9</b>	<b>2,000</b>	<b>98</b>	<b>1,100</b>	<b>43</b>	<b>23,304</b>	<b>3,884</b>
<b>AVG</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>59%</b>	<b>60</b>	<b>13</b>	<b>1800</b>	<b>88</b>	<b>1650</b>	<b>56</b>	<b>-</b>	<b>-</b>

**NOTES:**

ppmv = parts per million by volume

TPH-g = total petroleum hydrocarbons as gasoline

TPH-g by EPA Method 8015C

in-Hg = inches of mercury (gauge pressure)

hrs = hours

- not analyzed/applicable

fpm = feet per minute

scfm = standard cubic feet per minute

Flow = Velocity x Cross Sectional Area of the Pipe

Cross Sectional Area of 3" Pipe = 0.0491 ft<sup>2</sup>

Well Flow = Well Velocity \* 0.0491

PRED = TPH-g influent concentration

- 1) System installed and started up on June 26, 2007
- 2) Propane delivery missed; system shutdown on 08/06/07
- 3) Propane delivery missed; system shutdown on 08/21/07
- 4) System down between 09/11 and 09/24/08 due to electrical problems
- 5) System expanded; MW-10, MW-11 and MW-12 extraction added online

- 6) Propane delivery missed; system shutdown on 01/02/08
- 7) Propane delivery missed; system shutdown on 01/22/08
- 8) System shutdown most of February to evaluate free product recovery
- 9) Catalyst module installed and started up in March
- 10)

**MASS REMOVAL RATE (MRR) ESTIMATE ASSUMPTIONS:**

MRR Estimate = (20,000\*10<sup>-6</sup>)\*(50scfm)\*(1440min/day)\*(28.32L/ft<sup>3</sup>)\*(1mol/22.4L)\*(100g/mol)\*(1lb/454g)

AVG = average values in red for the current reporting period

Negligible change in air density, constant concentration and average molecular weight

1 mole occupies 22.4 Liters at STP

STP is 21°C and 1 atm

MW<sub>gas</sub> = 100 grams/mole (weathered gasoline)

1 day = 1440 minutes

1ft<sup>3</sup> = 28.38 liters

1 lb = 454 grams

1 gallon gas ~ 6 pounds

**TABLE 10: THERMAL/CATALYTIC OXIDIZER PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Possible Runtime (days)	Possible Runtime (hrs)	Hour Meter Reading	Actual Runtime (days)	Actual Runtime (hrs)	System Runtime (%)	Preheat Temp (°F)	Exhaust Temp (°F)	Total Velocity (fpm)	Total Flow (scfm)	POSTD TPH-g (ppmv)	STACK TPH-g (ppmv)	Abatement Efficiency (%)	TPH-g Destruction Rate (lbs/day)	Total TPH-g Destroyed (pounds)	Total TPH-g Destroyed (gallons)	Total TPH-g Destroyed (btu)
06/28/07	1 Startup	-	-	10	0.4	10	-	1,430	1,427	2,150	106	3,800	3.5	99.91%	161	65	11	1,233,826
07/11/07		13	312	53	2	43	14%	1,478	1,392	2,625	129	1,400	3.5	99.75%	72	195	32	3,701,491
07/27/07		16	384	103	2	51	13%	1,428	1,386	2,600	128	3,400	3.5	99.90%	174	562	94	10,692,358
08/01/07		5	120	160	2	57	47%	1,425	1,377	2,800	137	2,500	3.5	99.86%	138	890	148	16,916,123
08/10/07	2,3	9	216	350	8	189	88%	1,411	1,341	2,000	98	5,300	3.5	99.93%	209	2,535	422	48,204,535
09/28/07	4	49	1176	896	23	546	46%	1,471	1,438	3,000	147	4,800	3.5	99.93%	284	8,984	1,497	170,844,523
10/17/07		19	456	1,239	14	343	75%	1,409	1,365	2,400	118	1,800	3.5	99.81%	85	10,201	1,700	193,992,681
11/08/07		22	528	1,709	20	470	89%	1,412	1,342	2,000	98	2,000	21	98.95%	79	11,742	1,957	223,297,250
11/16/07		8	192	1,874	7	166	86%	1,408	1,347	2,000	98	3,600	3.5	99.90%	142	12,721	2,120	241,905,549
11/21/07	5	5	120	1,994	5	120	100%	1,412	1,308	2,400	118	5,500	3.5	99.94%	260	14,022	2,337	266,642,477
12/04/07		13	312	2,231	10	236	76%	1,416	1,312	2,050	101	1,300	3.5	99.73%	52	14,538	2,423	276,461,730
12/26/07		22	528	2,566	14	335	63%	1,408	1,352	2,200	108	1,700	3.5	99.79%	74	15,566	2,594	296,020,076
01/15/08		20	480	3,016	19	451	94%	1,411	1,357	2,100	103	620	3.5	99.44%	26	16,048	2,675	305,174,194
01/22/08	6,7	7	168	3,064	2	48	29%	1,407	1,348	2,400	118	1,100	3.5	99.68%	52	16,152	2,692	307,153,643
01/31/08		9	216	3,276	9	212	98%	1,348	1,267	2,150	106	770	3.5	99.55%	33	16,440	2,740	312,628,082
02/07/08		7	168	3,443	7	167	99%	1,409	1,333	2,000	98	690	3.5	99.49%	27	16,628	2,771	316,215,556
03/18/08	8,9	40	960	3,653	9	210	22%	705	794	2,300	113	310	3.5	98.87%	14	16,751	2,792	318,555,075
04/01/08		14	336	3,952	12	299	89%	703	751	3,100	152	500	3.5	99.30%	31	17,131	2,855	325,777,446
04/30/08		29	696	4,591	27	639	92%	709	792	2,700	133	700	3.5	99.50%	37	18,122	3,020	344,619,107
05/29/08		29	696	4,978	16	387	56%	703	769	1,800	88	500	3.5	99.30%	18	18,408	3,068	350,052,986
06/26/08		28	672	5,489	21	511	76%	802	841	2,500	123	620	3.5	99.44%	31	19,057	3,176	362,409,874
<b>07/30/08</b>		<b>34</b>	<b>816</b>	<b>6,184</b>	<b>29</b>	<b>695</b>	<b>85%</b>	<b>705</b>	<b>797</b>	<b>2,800</b>	<b>137</b>	-	<b>3.5</b>	-	-	-	-	-
<b>09/30/08</b>		<b>62</b>	<b>1488</b>	<b>6,673</b>	<b>20</b>	<b>489</b>	<b>33%</b>	<b>759</b>	<b>855</b>	<b>3,200</b>	<b>157</b>	-	<b>3.5</b>	-	-	-	-	-
<b>AVG</b>	-	-	-	-	-	-	<b>59%</b>	<b>732</b>	<b>826</b>	<b>3,000</b>	<b>147</b>	-	<b>3.5</b>	-	-	-	-	-

**NOTES:**

ppmv = parts per million by volume  
 TPH-g = total petroleum hydrocarbons as gasoline  
 TPH-g by EPA Method 8015C  
 hrs = hours

- not analyzed/applicable  
 fpm = feet per minute  
 scfm = standard cubic feet per minute  
 btu = british thermal units

Flow = Velocity x Cross Sectional Area of the Pipe  
 Cross Sectional Area of 3" Pipe = 0.0491 ft<sup>2</sup>  
 Total Flow = Total Velocity \* 0.0491  
 POSTD = TPH-g influent concentration

DL = detection limit  
 1/2 the DL was used for abatement efficiency calculations  
 DL for THP-g by modified EPA Method 8015 = 7.0 ppmv

- 1) System installed and started up on June 26, 2007
- 2) Propane delivery missed; system shutdown on 08/06/07
- 3) Propane delivery missed; system shutdown on 08/21/07
- 4) System down between 09/11 and 09/24/08 due to electrical problems
- 5) System expanded; MW-10, MW-11 and MW-12 extraction added online
- 6) Propane delivery missed; system shutdown on 01/02/08
- 7) Propane delivery missed; system shutdown on 01/22/08
- 8) System shutdown most of February to evaluate free product recovery
- 9) Catalyst module installed and started up in March
- 10)

**MASS REMOVAL RATE (MRR) ESTIMATE ASSUMPTIONS:**

MRR Estimate = (20,000\*10<sup>-6</sup>)\*(50scfm)\*(1440min/day)\*(28.32L/ft<sup>3</sup>)\*(1mol/22.4L)\*(100g/mol)\*(11b/454g)  
 Negligible change in air density, constant concentration and average molecular weight  
 1 mole occupies 22.4 Liters at STP  
 STP is 21°C and 1 atm  
 MW gas = 100 grams/mole (weathered gasoline)  
 1 day = 1440 minutes

1 ft<sup>3</sup> = 28.32 liters  
 1 lb = 454 grams  
 1 gallon gas ~ 6 pounds

1 gallon gas ~ 114,100 btu

AVG = average values in red for the current reporting period

**TABLE 11: AIR STRIPPER PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Hour Meter Reading	Actual Runtime (days)	Blower VFD (Hz)	*Back Pressure (in-H2O)	Outlet Velocity (fpm)	Outlet Flow (scfm)	Effluent TPH-g Conc. (ppmv)	Influent TPH-g Conc. (µg/L)	Effluent TPH-g Conc. (µg/L)	Removal Efficiency (%)
06/26/07	1	0	-	45	25	2,600	128	-	20,000	1,000	95.0%
06/27/08		5	0.20	45	25	2,600	128	-	25,000	420	98.3%
06/28/07		10	0.20	25	10	1,300	64	-	28,000	6,400	77.1%
07/03/07		-	-	40	20	2,300	113	-	-	-	-
07/11/07		-	-	40	20	2,300	113	-	-	-	-
07/11/07		-	-	20	5	900	44	-	-	-	-
07/12/07		70	3	20	5	900	44	-	8,300	-	-
07/12/07		70	0	15	4	600	29	-	8,300	-	-
07/27/07		-	-	20	6	900	44	-	-	-	-
08/01/07		-	-	20	6	900	44	-	-	-	-
08/10/07		-	-	10	2	200	10	-	-	-	-
08/07/07		-	-	15	3	600	29	-	-	-	-
08/21/07		-	-	20	18	900	44	-	-	-	-
08/22/07		530	19	15	5	600	29	-	16,000	5,300	66.9%
09/28/07		-	-	25	16	1,300	64	-	-	-	-
10/17/07		1,239	30	25	15	1,300	64	130	25,000	84	99.7%
10/23/07		-	-	25	15	1,300	64	-	-	-	-
10/25/07		-	-	20	15	900	44	-	-	-	-
11/07/07		1,709	20	20	16	900	44	-	21,000	120	99.4%
11/08/07		-	-	20	16	900	44	19	-	-	-
11/16/07		-	-	20	16	900	44	-	-	-	-
11/20/07		-	-	20	18	900	44	-	-	-	-
11/21/07		-	-	20	18.5	900	44	-	-	-	-
11/27/07		-	-	20	20	900	44	-	-	-	-
12/04/07		-	-	20	19	900	44	-	-	-	-
12/12/07		2,366	27	20	18	900	44	-	75,000	65,000	13.3%
12/14/07		-	-	20	18	900	44	-	-	-	-
		-	-								

**TABLE 11: AIR STRIPPER PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Hour Meter Reading	Actual Runtime (days)	Blower VFD (Hz)	*Back Pressure (in-H2O)	Outlet Velocity (fpm)	Outlet Flow (scfm)	Effluent TPH-g Conc. (ppmv)	Influent TPH-g Conc. (µg/L)	Effluent TPH-g Conc. (µg/L)	Removal Efficiency (%)
12/25/07		-	-	20	20	900	44	-	-	-	-
12/26/07		-	-	20	20	900	44	-	-	-	-
01/08/08		2,815	19	20	19.5	900	44	-	12,000	130	98.9%
01/15/08		-	-	20	19.0	900	44	1,100	-	-	-
01/24/08		-	-	20	19.0	900	44	-	-	-	-
01/31/08		-	-	20	18.5	900	44	-	-	-	-
01/31/08		-	-	20	12.5	900	44	-	-	-	-
02/07/08		-	-	20	15	900	44	31	-	-	-
02/12/08		-	-	20	15	900	44	-	-	-	-
03/18/08		3,653	35	20	15	900	44	31	4,100	120	97.1%
03/28/08		-	-	20	16	900	44	-	-	-	-
04/01/08		3,953	12	20	15	900	44	-	2,400	140	94.2%
04/30/08		4,591	27	20	15	900	44	37	8,600	25	99.7%
05/29/08		4,978	16	20	17.5	900	44	ND<7.0	13,000	100	99.2%
06/26/08		5,489	21	20	20.0	1,300	64	44	7,600	70	99.1%
<b>07/30/08</b>		<b>6,184</b>	<b>29</b>	<b>30</b>	<b>17.5</b>	<b>1,200</b>	<b>59</b>	<b>41</b>	<b>9,400</b>	<b>130</b>	<b>98.6%</b>
<b>09/30/08</b>		<b>6,673</b>	<b>20</b>	<b>30</b>	<b>19.0</b>	<b>1,200</b>	<b>59</b>	<b>-</b>	<b>6,100</b>	<b>94</b>	<b>98.5%</b>
<b>AVG</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>30</b>	<b>18</b>	<b>1,200</b>	<b>59</b>	<b>-</b>	<b>7,750</b>	<b>112</b>	<b>98.5%</b>

\*Air will leak from air stripper if backpressure exceeds 30 to 35 in-H2O as tested on June 11, 2007

**NOTES:**

Hz = hertz (used to control flow rate)

in-H2O = inches of water

scfm = standard cubic feet per minute

ppmv = parts per million by volume

µg/L = micrograms per Liter of water

- |  |     |
|--|-----|
| 1) System started up and first discharge to the sanitary sewer | 6)  |
| 2) Air stripper cleaned due to high backpressure               | 7)  |
| 3)   | 8)  |
| 4)   | 9)  |
| 5)   | 10) |

**TABLE 12: ACTIVATED CARBON ABSORBER PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Hour Meter Reading	Actual Runtime (days)	Flow Totalizer (gallons)	Gallons Pumped/Treated	Average Flow Rate (gpd)	Average Flow Rate (gph)	Average Flow Rate (gpm)	Bag filter *Inlet Pressure (psig)	Bag filter *Outlet Pressure (psig)	GAC-1 ** Inlet Pressure (psig)	GAC-2 **Inlet Pressure (psig)	Bag filter Changed? (Y/N)	GAC Back-washed? (Y/N)	GAC Changed? (Y/N)	TPH-g Influent Conc. (µg/L)	TPH-g Effluent Conc. (µg/L)	Removal Efficiency (%)	Mass Removal Rate (lbs/day)	Total Mass Removed (lbs)	Total Mass Removed (gallons)
06/26/07	1	0	-	0	-	-	-	-	-	-	1.5	<1.0	-	N	N	1,000	25	97.50%	-	-	-
06/27/07		5	0.2	780	780	3,868	161	2.69	-	-	1.5	<1.0	-	N	N	420	25	94.05%	0.0127	0.0026	0.00
06/28/07		10	0.2	1,300	520	2,579	107	1.79	-	-	1.5	<1.0	-	N	N	6,400	25	99.61%	0.1369	0.0302	0.01
07/03/07		13	0.2	1,800	500	3,166	132	2.20	-	-	1.5	<1.0	-	N	N	-	-	-	-	-	-
07/09/07		25	0.5	4,310	2,510	5,171	215	3.59	-	-	2	<1.0	-	N	N	-	-	-	-	-	-
07/10/07		28	0.1	5,000	690	5,224	218	3.63	-	-	3	<1.0	-	N	N	-	-	-	-	-	-
07/11/07		53	1.0	7,280	2,280	2,240	93	1.56	-	-	3	<1.0	-	N	N	-	-	-	-	-	-
07/12/07		70	0.7	7,400	120	162	7	0.11	-	-	5	<1.0	-	Y	N	-	-	-	-	-	-
07/27/07		103	1.4	8,580	1,180	860	35.8	0.60	-	-	2	<1.0	-	N	N	-	-	-	-	-	-
07/30/07		121	0.7	9,200	620	844	35	0.59	-	-	2	<1.0	-	N	N	-	-	-	-	-	-
08/01/07		160	1.6	13,400	4,200	2,560	107	1.78	-	-	5	<1.0	-	Y	N	-	-	-	-	-	-
08/07/07		279	4.9	14,470	1,070	217	9.0	0.15	-	-	2	<1.0	-	N	N	-	-	-	-	-	-
08/17/08	2	445	6.9	25,000	10,530	1,522	63.4	1.06	2	2.5	2.5	<1.0	Y	N	N	-	-	-	-	-	-
08/21/07		506	2.6	33,000	8,000	3,135	131	2.18	7	2.5	2.5	<1.0	Y	N	N	-	-	-	-	-	-
08/22/07		530	1.0	34,110	1,110	46	0.77	2	2.5	2.5	2.5	<1.0	N	N	N	5,300	25	99.53%	0.0488	1.47	0.25
08/23/07		554	1.0	36,710	2,600	2,590	108	1.80	2	2.5	2.5	<1.0	N	N	N	-	-	-	-	-	-
08/27/07		648	3.9	45,800	9,090	2,311	96	1.60	10	>7	>7	-	Y	Y	Y	-	-	-	-	-	-
08/31/07		744	4.0	50,820	5,020	1,255	52	0.87	2	2.5	2.5	<1.0	N	N	N	-	-	-	-	-	-
09/05/08		862	4.9	57,100	6,280	1,277	53	0.89	10	2.5	2.5	<1.0	Y	N	N	-	-	-	-	-	-
09/24/07		896	1.4	65,360	8,260	6,004	250	4.17	10	2.5	2.5	<1.0	Y	N	N	-	-	-	-	-	-
10/01/07		1,088	8.0	99,000	33,640	4,205	175	2.92	15	>10	>10	2	Y	N	Y	-	-	-	-	-	-
10/17/07	3	1,239	6.3	140,710	41,710	6,609	275	4.59	11	4	4	2	N	N	N	84	25	70.24%	0.0032	1.52	0.25
10/23/07		1,384	6.0	173,260	32,550	5,389	225	3.74	24	7.5	7.5	2.5	N	N	N	-	-	-	-	-	-
10/25/07	4	1,395	0.5	175,600	2,340	4,918	205	3.42	>30 / 7.5	8 / 8	8 / 8	>5 / >5	Y	N	N	-	-	-	-	-	-
11/07/07		1,709	13	223,380	47,780	3,661	153	2.54	14	14.5	14.5	OFFLINE	Y	N	N	120	25	79.17%	0.0029	1.59	0.26
11/08/07		1,730	0.9	227,190	3,810	4,354	181	3.02	16	16.5	16.5	OFFLINE	N	N	N	-	-	-	-	-	-
11/13/07		1,809	3.3	244,360	17,170	5,220	217.5	3.62	14	14.5	15	OFFLINE	N	N	N	-	-	-	-	-	-
11/16/07		1,874	2.7	259,600	15,240	5,566	232	3.87	17	17.5	18	OFFLINE	N	N	N	-	-	-	-	-	-
11/20/07	5	1,969	3.9	279,190	19,590	4,983	208	3.46	19	19.5	20	OFFLINE	N	N	N	-	-	-	-	-	-
11/21/07		1,993	1.0	287,450	8,260	8,260	344	5.74	19	19.5	20	OFFLINE	N	N	N	-	-	-	-	-	-
11/27/07		2,107	4.7	320,320	32,870	6,921	288	4.81	20.5	21.5	21.5	OFFLINE	Y	N	N	-	-	-	-	-	-
11/29/07		2,131	1.0	328,040	7,720	7,504	313	5.21	18 / 4.5	18.5 / 5.5	19 / 6.0	OFFLINE	Y	Y	N	-	-	-	-	-	-
12/04/07		2,230	4.1	355,820	27,780	6,763	282	4.70	17 / 7	17.5 / 7.5	17.5 / 7.5	OFFLINE	Y	Y	N	-	-	-	-	-	-
12/12/07		2,366	5.7	391,500	35,680	6,296	262	4.37	20 / 5	10 / 4.5	10 / 4.5	OFFLINE	Y	Y	N	65,000	25	99.96%	3.4067	92.55	15.42
12/14/07		2,379	0.6	395,260	3,760	6,670	278	4.63	11	4.0	4.5	OFFLINE	N	N	N	-	-	-	-	-	-
12/26/07		2,545	6.9	440,900	45,640	6,603	275	4.59	13	13.5	14	OFFLINE	N	N	N	-	-	-	-	-	-

**TABLE 12: ACTIVATED CARBON ABSORBER PERFORMANCE & MASS REMOVAL DATA SUMMARY**

Vic's Auto, 245 8th Street, Oakland, California

Sample Date	Notes	Hour Meter Reading	Actual Runtime (days)	Flow Totalizer (gallons)	Gallons Pumped/Treated	Average Flow Rate (gpd)	Average Flow Rate (gph)	Average Flow Rate (gpm)	Bag filter *Inlet Pressure (psig)	Bag filter *Outlet Pressure (psig)	GAC-1 ** Inlet Pressure (psig)	GAC-2 **Inlet Pressure (psig)	Bag filter Changed? (Y/N)	GAC Back-washed? (Y/N)	GAC Changed? (Y/N)	TPH-g Influent Conc. (µg/L)	TPH-g Effluent Conc. (µg/L)	Removal Efficiency (%)	Mass Removal Rate (lbs/day)	Total Mass Removed (lbs)	Total Mass Removed (gallons)
01/08/08		2,815	11.2	512,760	71,860	6,398	267	4.44	18.5	19	19	OFFLINE	OFFLINE	N	N	130	25	80.77%	0.0056	92.66	15.44
01/15/08		3,016	8.4	541,920	29,160	3,472	145	2.41	19	20	20	OFFLINE	OFFLINE	N	N	-	-	-	-	-	-
01/22/08		3,064	2.0	550,780	8,860	4,424	184	3.07	16.5 / 4	17 / 4	17 / 4	OFFLINE	OFFLINE	Y	N	-	-	-	-	-	-
01/31/08		3,276	8.8	608,890	58,110	6,580	274	4.57	16 / 8	16.5 / 8.5	16.5 / 8.5	OFFLINE	OFFLINE	Y	N	-	-	-	-	-	-
02/07/08		3,443	6.9	657,140	48,250	6,950	290	4.83	19	19.5	20	OFFLINE	OFFLINE	N	N	-	-	-	-	-	-
02/12/08		3,559	4.8	685,990	28,850	5,957	248	4.14	25.5	26	26	OFFLINE	OFFLINE	N	N	-	-	-	-	-	-
03/18/08		3,653	3.9	715,480	29,490	7,523	313	5.22	16.5	17	17	OFFLINE	OFFLINE	Y	N	120	25	79.17%	0.0060	92.82	15.47
03/28/08		3,851	8.2	760,730	45,250	5,499	229	3.82	4	4.5	5	OFFLINE	OFFLINE	N	N	-	-	-	-	-	-
04/01/08		3,953	4.3	771,940	11,210	2,637	110	1.83	9.5	10	-	OFFLINE	OFFLINE	N	N	2,400	25	98.96%	0.0522	94.52	15.75
04/30/08		4,591	26.6	858,530	86,590	3,254	136	2.26	17	17.5	-	OFFLINE	OFFLINE	N	N	8,600	25	99.71%	0.2324	103.03	17.17
05/29/08		4,978	16.1	931,605	73,075	4,532	189	3.15	23	23.5	-	OFFLINE	OFFLINE	N	N	13,000	25	99.81%	0.4896	110.93	18.49
06/26/08		5,489	21.3	1,039,610	108,005	5,075	211	3.52	25	26	-	OFFLINE	OFFLINE	N	N	7,600	25	99.67%	0.3201	117.74	19.62
<b>07/30/08</b>		<b>6,184</b>	<b>28.9</b>	<b>1,061,870</b>	<b>22,260</b>	<b>769</b>	<b>32</b>	<b>0.53</b>	<b>26</b>	<b>26.5</b>	-	<b>OFFLINE</b>	<b>OFFLINE</b>	<b>N</b>	<b>N</b>	<b>9,400</b>	<b>25</b>	<b>99.73%</b>	<b>0.0601</b>	<b>119.48</b>	<b>19.91</b>
<b>09/30/08</b>		<b>6,673</b>	<b>20.4</b>	<b>1,111,770</b>	<b>49,900</b>	<b>2,449</b>	<b>102</b>	<b>1.70</b>	<b>23</b>	<b>24.5</b>	-	<b>OFFLINE</b>	<b>OFFLINE</b>	<b>N</b>	<b>N</b>	<b>6,100</b>	<b>25</b>	<b>99.59%</b>	<b>0.1239</b>	<b>122.00</b>	<b>20.33</b>
<b>AVG</b>	-	-	-	-	-	<b>1,609</b>	<b>67</b>	<b>1.1</b>	-	-	-	-	-	-	-	<b>7,750</b>	<b>25</b>	<b>99.66%</b>	<b>0.0920</b>	-	-

**NOTES:**

gpd = gallons per day  
gph = gallons per hour  
gpm = gallons per minute  
psig = pounds per square inch  
µg/L = micrograms per Liter of water (ppb)  
lbs/day = pounds per day  
GAC = granular activated carbon  
Conc. = concentration  
TPH-g = Total Petroleum Hydrocarbons as Gasoline  
TPH-g by EPA Method 8015C

Minimum EBMUD wastewater discharge permit reporting requirements are:  
- monthly flow totalizer readings  
- volume of groundwater treated during this reporting period  
- total volume of groundwater treated to date  
- description of any operations changes during this reporting period

Mass Removal Rate (lbs/day) = (1 gal/min)\*(1,000µg/L - 25µg/L)\*(3.785L/gallon)\*(1440/min/day)\*(2.2lbs/10<sup>9</sup>µg)  
Total Mass Removed (lbs) = (1 gallon)\*(1,000µg/L - 25µg/L)\*(3.785L/gallon)\*(2.2lbs/10<sup>9</sup>µg)  
1 gallon of gas = ~ 6 pounds  
1/2 the DL was used for removal efficiency and mass removal calculations  
DL for TPH-g by modified EPA Method 8015C = 50 µg/L  
**AVG = average values in red for the current reporting period**

\*Bag filter inlet and outlet pressures are recorded before and after the bag filter is changed using the following convention: (pressure before / pressure after)  
\*\*GAC inlet and outlet pressures are recorded before and after the vessel is backwashed using the following convention: (pressure before / pressure after)

- 1) System startup and first discharge to sanitary sewer 6)
- 2) Bag filter (LCO8) pre-filter for sediment removal installed and started up on 08/17/07 7)
- 3) 1,000-pound (PV-1000) carbon absorber (up to 75 psig) installed on 10/5/07 and started up on 10/9/07 8)
- 4) 200-pound (ASC-200) carbon absorber (i.e., C-2) taken offline permanently on 10/25/07 9)
- 5) Extraction wells MW-10, MW-11, and MW-12 brought online 11/20/07 10)

**TABLE 13: HVDPE PROCESS MONITORING SCHEDULE**

Vic's Auto, 245 8th Street, Oakland, California

Field Point Name	Sample Port Description/Location	TPH-g (SW8015Cm)	BTEX & MTBE (SW8021B)	TVH (ppmv)	CH4 (%)	O2 (%)	CO2 (%)
MW-1S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-2S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-5S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-6S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-7S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-10S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-11S	Sample Port at DPE Manifold	M	M	M	M	M	M
MW-12S	Sample Port at DPE Manifold	M	M	M	M	M	M
PRED	Influent Vapor Sample Port	M	M	M	M	M	M
POSTD	Oxidizer Inlet Sample Port	M	M	M	M	M	M
AS	Stripper Outlet Vapor Sample Port	M	M	M	M	M	M
STACK	Stack Gas Discharge Sample Port	M	M	M	M	M	M
GP-1-5'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-1-10'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-2-5'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-2-10'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-3-5'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-3-10'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-4-5'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
GP-4-10'	Permanent Soil Gas Probe	-	-	Q	Q	Q	Q
INF	Influent Water Sample Port	M	M	-	-	-	-
POST-AS	Water Sample Port After Stripper	M	M	-	-	-	-
POST-C1	Water Sample Port After C-1	M	M	-	-	-	-
EFF	Effluent Water Sample Port	M	M	-	-	-	-

**NOTES:**

W = weekly

BW = bi-weekly

M = monthly

A = annual

SA = semi-annual

AN = as needed

SP = sample port

HC = total volatile hydrocarbon

ppmv = parts per million by volume

% = percent concentration by volume

TVH = total volatile hydrocarbons (calibrated w/ hexane)

CH4 = methane

O2 = oxygen

CO2 = carbon dioxide

TVH, CH4, O2, and CO2 measured w/ RKI Eagle gas detector

\*Additional water analysis for Total Oil and Grease Hydrocarbon by Method HEM-1664SGT required every 6 months by EBMUD permit

\*\*POSTD and STACK required every month by BAAQMD permit

\*\*\*Soil gas sampling for vapor intrusion evaluation is conducted quarterly with routine groundwater monitoring events



**APPENDIX A**

**MONITORING WELL FIELD SAMPLING FORMS**

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.55		
Depth of Well	28.00		
Depth to Water (from top of casing)	16.99		
Depth to Free Product (from top of casing)	Not detected		
Water Elevation (feet above msl)	15.56		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	21.4		
Actual Volume Purged (gallons)	22.0		
Appearance of Purge Water	Dark w/ hc odor		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
6:24	1	19.46	6.89	1454	0.97	-156.7	Dark
6:25	2	19.50	6.92	1436	0.94	-158	Clear
6:26	3	19.59	6.93	1391	0.90	-156.3	"
6:28	6	19.77	6.94	1314	0.80	-142	"
6:30	9	19.66	6.90	1171	0.86	-98.9	"
6:32	12	19.54	6.96	1190	0.84	-103.5	"
6:34	15	19.61	6.99	1015	0.71	-101.1	"
6:37	18	19.73	6.82	803	1.07	-52.5	"
6:42	22	19.73	6.78	782	1.05	-48.5	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Dark gray, fast clearing with strong hydrocarbon odors clears after 2 gallons

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.24		
Depth of Well	28.00		
Depth to Water (from top of casing)	17.94		
Water Elevation (feet above msl)	15.30		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	4.9		
Actual Volume Purged (gallons)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
8:28	1	18.25	6.46	1,244	0.95	-11.4	Clear
8:29	2	18.30	6.39	1,226	0.81	12.9	"
8:30	3	18.34	6.36	1,187	0.76	28	"
8:31	4	18.36	6.36	1,153	0.73	34.1	"
8:32	5	18.37	6.35	1,126	0.71	38.7	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Clear with slight hydrocarbon odors

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	34.25		
Depth of Well	25.00		
Depth to Water (from top of casing)	18.88		
Water Elevation (feet above msl)	15.37		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	12.3		
Actual Volume Purged (gallons)	13		
Appearance of Purge Water	Brown, fast clearing		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
10:06	1	19.01	6.37	746	1.03	106.2	Clear
10:07	2	19.11	6.31	720	0.90	110.7	"
10:08	3	19.19	6.2	684	0.82	104.6	"
10:09	4	0.81	6.29	662	0.80	80.0	"
10:10	5	19.25	6.29	692	0.76	58.8	"
10:11	6	19.25	6.29	692	0.76	58.8	"
10:12	7	19.23	6.33	742	0.58	27.0	"
10:14	9	19.19	6.30	785	0.49	50.6	"
10:16	11	19.19	6.30	786	0.47	57.9	"
10:18	13	19.20	6.31	787	0.98	62.8	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Brown, fast clearing, no hydrocarbon odors

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-4**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	34.42		
Depth of Well	25.00		
Depth to Water (from top of casing)	19.67		
Water Elevation (feet above msl)	14.75		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>10.8</b>		
Actual Volume Purged (gallons)	11.0		
Appearance of Purge Water	Brownish, fast clearing		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
10:28	1	17.32	6.48	433	1.43	97.9	Clear
10:29	2	17.31	6.38	412	1.39	107.6	"
10:30	3	17.33	6.35	398	1.37	111.0	"
10:31	4	17.36	6.33	409	1.39	113.8	"
10:32	5	17.36	6.32	419	1.37	115.0	"
10:33	6	17.35	6.31	429	1.36	116.0	"
10:34	7	17.35	6.31	431	1.36	115.9	"
10:35	8	17.35	6.34	429	1.37	113.0	"
10:51	9	17.35	6.39	421	1.22	108.9	"
10:53	11	17.36	6.35	406	1.29	113.5	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Light brown, fast clearing, no hydrocarbon odors
Well ran dry at 8 gallons, 10:35. Recharged at 10:51.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-5**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.33		
Depth of Well	22.00		
Depth to Water (from top of casing)	17.42		
Water Elevation (feet above msl)	15.91		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	9.5		
Actual Volume Purged (gallons)	9.5		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
7:00	1	19.29	6.48	762	0.86	-79.6	Clear
7:01	2	19.51	6.46	753	0.79	-80.3	"
7:02	3	19.66	6.52	720	0.75	-89.1	"
7:03	4	19.53	6.68	635	0.69	-99.8	"
7:04	5	19.45	6.74	5.98	0.64	-98.6	"
7:15	6	19.45	6.56	588	0.87	-45.4	"
7:16	7	19.52	6.59	563	0.76	-50.4	"
7:17	8	19.48	6.62	548	0.74	-52.9	"
7:19	9.5	19.46	6.73	548	0.73	-54.4	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Clear with sewer-like odors noted
Well went dry at 5 gallons, recharged at 07:15

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-6**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.82		
Depth of Well	22.00		
Depth to Water (from top of casing)	16.48		
Depth to Free Product (from top of casing)	Not detected		
Water Elevation (feet above msl)	16.34		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	11.2		
Actual Volume Purged (gallons)	12.0		
Appearance of Purge Water	Dark, but fast clearing		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
7:51	1	19.14	6.22	690	0.70	-58.3	Clear
7:52	2	19.28	6.14	677	0.66	-60.3	"
7:53	3	19.41	6.15	669	0.66	-60.4	"
7:54	4	19.38	6.22	667	0.64	-64.8	"
7:55	5	19.27	6.26	677	0.64	-69.0	"
7:56	6	19.22	6.28	682	0.64	-70.8	"
8:17	8	19.03	6.38	686	1.03	-30.1	"
8:19	10	19.27	6.32	708	0.71	-26.1	"
8:21	12	19.19	6.35	678	0.72	-34.1	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Dark, fast clearing, with strong hydrocarbon odors
Well dry at 6 gallons, 07:56. Recharged at 08:17.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-7**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.07		
Depth of Well	22.00		
Depth to Water (from top of casing)	17.23		
Depth to Free Product (from top of casing)	Not detected		
Water Elevation (feet above msl)	15.84		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	9.7		
Actual Volume Purged (gallons)	10.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				Conductivity	DO	ORP	Comments
Time	Vol Removed (gal)	Temperature (deg C)	pH	(μS/cm)	(mg/L)	(meV)	
7:20	1	18.85	6.64	662	0.75	-94.9	Clear
7:21	2	19.02	6.64	665	0.68	-97.2	"
7:22	3	10.03	6.66	663	0.67	-98.6	"
7:23	4	19.02	6.67	660	0.66	-96.7	"
7:24	5	18.94	6.69	637	0.66	-88.7	"
7:42	6	18.82	6.42	617	0.87	-23.8	"
7:43	7	18.93	6.44	623	0.76	-28.6	"
7:44	8	18.96	6.52	650	0.67	-45.6	"
7:45	10	18.92	6.54	632	0.65	-44.7	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Dark in color, clears fast, sewer-like odors present.
Well dry at 5 gallons, 07:24. Recharged at 07:42.



**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-8**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.00		
Depth of Well	22.00		
Depth to Water (from top of casing)	16.88		
Depth to Free Product (from top of casing)	None		
Water Elevation (feet above msl)	16.12		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	10.7		
Actual Volume Purged (gallons)	10.0		
Appearance of Purge Water	Greenish, clears at about 2 gallons		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
11:40	1	18.32	6.89	304	1.11	44.2	Clear
11:41	2	18.39	6.80	285	0.89	49.0	"
11:42	3	18.55	6.78	278	0.83	17.3	"
11:43	4	18.59	6.85	301	0.82	-18.9	"
11:44	5	18.58	6.90	301	0.74	-35.8	"
11:45	6	18.57	6.94	312	0.63	-38.4	"
11:46	7	18.55	7.00	302	0.72	-27.1	"
11:54	8	18.6	6.99	284	0.83	8.3	"
11:55	9	18.54	6.70	278	0.79	-4.4	"
11:56	10	18.53	7.00	279	0.8	-6.9	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Light brown with no odors, clears quickly
Dry at 7 gallons, 11:47. Recharged at 11:53.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-9**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK <span style="float:right">▼</span>		
Elevation of Top of Casing (feet above msl)	32.00		
Depth of Well	22.73		
Depth to Water (from top of casing)	15.38		
Depth to Free Product (from top of casing)	None		
Water Elevation (feet above msl)	16.62		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	3.6		
Actual Volume Purged (gallons)	4.0		
Appearance of Purge Water	Greenish, fast clearing		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
Time	Vol Removed (gal)	Temperature (deg C)	pH				
9:25	1	19.45	6.5	982	0.81	-30.5	Clear
9:26	2	19.72	6.5	944	0.68	-35.3	"
9:27	3	19.64	6.51	965	0.65	-33.8	"
9:28	4	19.52	6.41	974	0.63	-33.7	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Milky grey, fast clearing, hydrocarbon odors noted

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-10**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.17		
Depth of Well	22.00		
Depth to Water (from top of casing)	16.67		
Water Elevation (feet above msl)	14.50		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	10.9		
Actual Volume Purged (gallons)	11		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
12:00	1	18.51	6.53	436	0.71	-63.2	Clear
12:01	2	18.62	6.49	404	0.62	-58.4	"
12:02	3	18.70	6.48	386	0.56	-55.0	"
12:03	4	18.78	6.5	384	0.55	-53.1	"
12:04	5	18.79	6.52	401	0.55	-56.4	"
12:05	6	18.72	6.60	431	0.54	-63.3	"
12:06	7	18.67	6.65	461	0.52	-66.8	"
12:07	8	18.62	6.66	484	0.50	-68.0	"
12:08	9	18.57	6.69	509	0.68	-69.8	"
12:12	11	18.55	6.69	522	0.43	-68.9	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Clear with slight sewer odor

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-11**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.78		
Depth of Well	22.00		
Depth to Water (from top of casing)	17.33		
Water Elevation (feet above msl)	14.45		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>9.5</b>		
Actual Volume Purged (gallons)	10.0		
Appearance of Purge Water	Dark gray, fast clearing		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO(mg/L)	ORP (meV)	Comments
12:20	1	17.87	6.53	603	0.71	-54.2	Clear
12:21	2	17.94	6.49	592	0.65	-62.8	"
12:22	3	17.97	6.48	595	0.64	-62.5	"
12:23	4	17.97	6.53	603	0.62	-67.9	"
12:24	5	17.94	6.66	563	0.60	-75.3	"
12:25	6	17.91	6.69	580	0.57	-76.9	"
12:46	7	18.20	6.98	621	0.74	-51.3	"
12:47	8	18.01	6.83	636	0.67	-42.6	"
12:49	9.5	17.97	6.84	628	0.65	-48.7	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Dark gray, fast clearing with strong hydrocarbon odors
Well dry at 7 gallons, 12:26. Recharged at 12:46.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-12**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.02		
Depth of Well	22.00		
Depth to Water (from top of casing)	17.61		
Water Elevation (feet above msl)	14.41		
Well Volumes Purged	11		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>9.0</b>		
Actual Volume Purged (gallons)	9.5		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
13:02	1	17.63	6.97	597	0.57	-98.1	Clear
13:03	2	17.68	6.85	581	0.55	-89.5	"
13:04	3	17.69	6.77	579	0.54	-84.7	"
13:05	4	17.70	6.67	586	0.52	-80.4	"
13:06	5	17.7	6.60	598	0.51	-73.3	"
13:07	6	17.66	6.55	597	0.50	-66.8	"
13:08	7	17.62	6.44	595	0.47	-55.8	"
13:10	9.5	17.71	6.47	601	0.47	-57.8	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Dark with strong hydrocarbon odors, clears fast at less than 1 gallon

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-13**

Project Name:	Vic's Automotive	Date of Sampling:	8/5/2008
Job Number:	116907	Name of Sampler:	A Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.00		
Depth of Well	22.00		
Depth to Water (from top of casing)	15.10		
Water Elevation (feet above msl)	16.90		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>3.4</b>		
Actual Volume Purged (gallons)	4.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
9:10	1	19.14	6.43	635	1.17	85.4	Clear
9:11	2	19.49	6.43	673	1.00	86.5	"
9:12	3	0.83	6.41	663	0.92	88.1	"
9:13	4	19.37	6.40	668	0.86	83.3	"

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Brown with no petroleum odors noted; clears before 1 gallon.

## **APPENDIX B**

### **SOIL GAS FIELD SAMPLING FORMS**

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-1-5**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	10:14
Project Address:	245 8th Street, Oakland, California	End Time:	10:18
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>5</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>7</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>50 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1266
Sampling Manifold / Flow Controller Number	MAN316-676
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**

Duplicate sampe collected; canister number 22105-6800


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface



**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-1-10**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	10:17
Project Address:	245 8th Street, Oakland, California	End Time:	10:21
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>10</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>12</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>86 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1267
Sampling Manifold / Flow Controller Number	MAN316-689
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

<b>SOIL GAS PROBE ID:</b>	<b>GP-2-5</b>
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Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	9:48
Project Address:	245 8th Street, Oakland, California	End Time:	9:52
		Name of Sampler:	R. Bartlett

SOIL GAS PROBE DATA
---------------------

Starting Vacuum (in-Hg)	-28.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	200
Tubing Inside Diameter (1/8" or 1/4")	1/8"
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	5
Length of Tubing Above Grade (ft)	2
Total Length of Tubing Purged (ft)	7
Number of Purge Volumes (default = 3 purge volumes)	3
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	50 mL
Appreciable Amount of Rain (>1/2") in Last Five Days?	NO
Moisture / Water Present in Tubing?	NO

SOIL GAS SAMPLING EQUIPMENT
-----------------------------

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1264
Sampling Manifold / Flow Controller Number	MAN316-685
Leak Check Compound	Isopropyl Alcohol (2-propanol)

NOTES & COMMENTS
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cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-2-10**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	9:53
Project Address:	245 8th Street, Oakland, California	End Time:	9:57
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>10</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>12</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>86 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1268
Sampling Manifold / Flow Controller Number	MAN316-687
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-3-5**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	11:10
Project Address:	245 8th Street, Oakland, California	End Time:	11:15
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>5</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>7</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>50 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1262
Sampling Manifold / Flow Controller Number	MAN316-671
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

<b>SOIL GAS PROBE ID:</b>	<b>GP-3-10</b>
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Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	11:14
Project Address:	245 8th Street, Oakland, California	End Time:	11:19
		Name of Sampler:	R. Bartlett

SOIL GAS PROBE DATA
---------------------

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	200
Tubing Inside Diameter (1/8" or 1/4")	1/8"
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	10
Length of Tubing Above Grade (ft)	2
Total Length of Tubing Purged (ft)	12
Number of Purge Volumes (default = 3 purge volumes)	3
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	86 mL
Appreciable Amount of Rain (>1/2") in Last Five Days?	NO
Moisture / Water Present in Tubing?	NO

SOIL GAS SAMPLING EQUIPMENT
-----------------------------

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1265
Sampling Manifold / Flow Controller Number	MAN316-665
Leak Check Compound	Isopropyl Alcohol (2-propanol)

NOTES & COMMENTS
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cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-4-5**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	11:37
Project Address:	245 8th Street, Oakland, California	End Time:	11:43
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>5</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>7</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>50 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1263
Sampling Manifold / Flow Controller Number	MAN316-679
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

**AEI CONSULTANTS**  
SOIL GAS SAMPLING FIELD FORM

**SOIL GAS PROBE ID: GP-4-10**

Project Name:	Vic's Automotive	Date of Sampling:	08/15/08
Job Number:	116907	Start Time:	11:41
Project Address:	245 8th Street, Oakland, California	End Time:	11:46
		Name of Sampler:	R. Bartlett

**SOIL GAS PROBE DATA**

Starting Vacuum (in-Hg)	-29.0
Ending Vacuum (in-Hg)	-5.0
Flow Controller / Sampling Flow Rate (mL/min)	<b>200</b>
Tubing Inside Diameter (1/8" or 1/4")	<b>1/8"</b>
Tubing Type (Nylon, Kynar, Teflon, Stainless Steel)	KYNAR (PVDF) ▼
Wellbox Condition	WELL BOX IN GOOD CONDITION ▼
Depth of Probe (ft bgs)	<b>10</b>
Length of Tubing Above Grade (ft)	<b>2</b>
Total Length of Tubing Purged (ft)	<b>12</b>
Number of Purge Volumes (default = 3 purge volumes)	<b>3</b>
Total Volume Purged (mL): formula valid only for tubing sizes of 1/8" I.D. (2.40 mL/ft) and 1/4" I.D. (9.60 mL/ft)	<b>86 mL</b>
Appreciable Amount of Rain (>1/2") in Last Five Days?	<b>NO</b>
Moisture / Water Present in Tubing?	<b>NO</b>

**SOIL GAS SAMPLING EQUIPMENT**

Number of Samples / Container Size and Type	One (1) 1-Liter Summa Canister
Summa Canister Number	24197-1261
Sampling Manifold / Flow Controller Number	MAN316-661
Leak Check Compound	Isopropyl Alcohol (2-propanol)

**NOTES & COMMENTS**


cc = cubic centimeter  
mL = milliliter

1 L = 1000 mL  
1 mL = 1 cc

in-Hg = inches of mercury  
ft bgs = feet below ground surface

## **APPENDIX C**

### **LABORATORY ANALYTICAL REPORTS W/ CHAIN OF CUSTODY DOCUMENTATION**





**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 08/05/08
	Client Contact: Ricky Bradford	Date Received: 08/05/08
	Client P.O.:	Date Reported: 08/12/08
		Date Completed: 08/08/08

**WorkOrder: 0808117**

August 12, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **13** analyzed samples from your project: **#116907; Vic's Automotive,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0808117

ClientCode: AEL

WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

Report to:	Ricky Bradford	Email: rbradford@aeiconsultants.com	Bill to:	Denise Mockel	Requested TAT: 5 days
	AEI Consultants	cc:		AEI Consultants	Date Received: 08/05/2008
	2500 Camino Diablo, Ste. #200	PO:		2500 Camino Diablo, Ste. #200	Date Printed: 08/06/2008
	Walnut Creek, CA 94597	ProjectNo: #116907; Vic's Automotive		Walnut Creek, CA 94597	
	(925) 283-6000 FAX (925) 944-2895			dmockel@aeiconsultants.com	

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0808117-001	MW-1	Water	8/5/2008 7:15	<input type="checkbox"/>	A	A										
0808117-002	MW-2	Water	8/5/2008 8:55	<input type="checkbox"/>	A											
0808117-003	MW-5	Water	8/5/2008 7:40	<input type="checkbox"/>	A											
0808117-004	MW-6	Water	8/5/2008 8:40	<input type="checkbox"/>	A											
0808117-005	MW-7	Water	8/5/2008 8:10	<input type="checkbox"/>	A											
0808117-006	MW-8	Water	8/5/2008 12:30	<input type="checkbox"/>	A											
0808117-007	MW-9	Water	8/5/2008 9:40	<input type="checkbox"/>	A											
0808117-008	MW-10	Water	8/5/2008 12:40	<input type="checkbox"/>	A											
0808117-009	MW-11	Water	8/5/2008 13:20	<input type="checkbox"/>	A											
0808117-010	MW-12	Water	8/5/2008 13:30	<input type="checkbox"/>	A											
0808117-011	MW-13	Water	8/5/2008 9:35	<input type="checkbox"/>	A											
0808117-012	MW-3	Water	8/5/2008 11:00	<input type="checkbox"/>	A											
0808117-013	MW-4	Water	8/5/2008 11:10	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTX W	2	PREF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Samantha Arbuckle

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **8/5/2008 8:16:04 PM**  
 Project Name: **#116907; Vic's Automotive** Checklist completed and reviewed by: **Samantha Arbuckle**  
 WorkOrder N°: **0808117** Matrix Water Carrier: Client Drop-In

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 3.8°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted: Date contacted: Contacted by:

Comments:



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Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 08/05/08
	Client Contact: Ricky Bradford	Date Received: 08/05/08
	Client P.O.:	Date Extracted: 08/06/08-08/08/08
		Date Analyzed: 08/06/08-08/08/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0808117

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	110,000,d1	ND<1000	730	22,000	1700	8200	200	102
002A	MW-2	W	520,d1	ND<25	26	57	7.6	70	1	101
003A	MW-5	W	4500,d1	ND<50	64	490	46	1100	10	95
004A	MW-6	W	33,000,d1	ND<350	480	5500	1400	6800	20	100
005A	MW-7	W	6100,d1	ND<150	1100	1100	120	740	10	99
006A	MW-8	W	81,d1	ND	0.66	7.2	1.2	9.1	1	108
007A	MW-9	W	42,000,d1	ND<1200	13,000	400	1800	4800	20	109
008A	MW-10	W	3500,d1	ND<120	230	180	74	190	1	113
009A	MW-11	W	12,000,d1	1100	1800	760	98	630	10	112
010A	MW-12	W	3900,d1	800	730	130	61	200	10	102
011A	MW-13	W	ND<250,a5	3400	ND<2.5	5.7	ND<2.5	4.3	5	105
012A	MW-3	W	91,d1	ND	2.0	8.0	1.3	8.0	1	99
013A	MW-4	W	76,d1	ND	1.2	8.1	1.5	9.7	1	105

Reporting Limit for DF =1; ND means not detected at or	W	50	5.0	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

- a5) reporting limit raised due to high MTBE content
- d1) weakly modified or unmodified gasoline is significant



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 37415

WorkOrder 0808117

EPA Method SW8021B/8015Cm		Extraction SW5030B							Spiked Sample ID: 0808122-002			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	106	106	0	94.9	103	8.61	70 - 130	20	70 - 130	20
MTBE	ND	10	90.9	88	3.25	80.4	76.9	4.44	70 - 130	20	70 - 130	20
Benzene	ND	10	89.9	86.8	3.46	93.1	93.5	0.362	70 - 130	20	70 - 130	20
Toluene	ND	10	84.8	81.9	3.40	91.2	92.3	1.20	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	89	86.1	3.32	89	92.8	4.15	70 - 130	20	70 - 130	20
Xylenes	ND	30	84.4	81.7	3.17	83.2	87.9	5.45	70 - 130	20	70 - 130	20
%SS:	103	10	103	101	1.48	109	104	4.97	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 37415 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0808117-001A	08/05/08 7:15 AM	08/08/08	08/08/08 1:33 AM	0808117-002A	08/05/08 8:55 AM	08/07/08	08/07/08 5:42 AM
0808117-003A	08/05/08 7:40 AM	08/07/08	08/07/08 6:15 AM	0808117-004A	08/05/08 8:40 AM	08/07/08	08/07/08 6:47 AM
0808117-005A	08/05/08 8:10 AM	08/08/08	08/08/08 7:04 AM	0808117-006A	08/05/08 12:30 PM	08/08/08	08/08/08 6:32 AM
0808117-007A	08/05/08 9:40 AM	08/07/08	08/07/08 7:20 AM	0808117-007A	08/05/08 9:40 AM	08/08/08	08/08/08 7:36 AM
0808117-008A	08/05/08 12:40 PM	08/06/08	08/06/08 9:24 PM	0808117-009A	08/05/08 1:20 PM	08/06/08	08/06/08 10:55 PM
0808117-010A	08/05/08 1:30 PM	08/06/08	08/06/08 10:25 PM	0808117-011A	08/05/08 9:35 AM	08/06/08	08/06/08 9:55 PM
0808117-011A	08/05/08 9:35 AM	08/08/08	08/08/08 12:03 AM	0808117-012A	08/05/08 11:00 AM	08/06/08	08/06/08 11:25 PM
0808117-013A	08/05/08 11:10 AM	08/07/08	08/07/08 1:56 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Reported: 08/19/08
	Client P.O.:	Date Completed: 08/19/08

**WorkOrder: 0808455**

August 21, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **9** analyzed samples from your project: **#116907; Vic's**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



0808455

**McCAMPBELL ANALYTICAL INC.**

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**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Lab Use Only

Report To: Ricky Bradford

Bill To: SAME

Company: A.E.I. Consultants

2500 Camino Diablo

Walnut Creek, CA

E-Mail: rbradford@aEICconsultants.com

Tele: (925) 944-2899

Fax: (925) 944-2895

Project #: 116907

Project Name: VIOS

Project Location: 245 8th St., Oakland, CA

Sampler Signature: Russell Scott

Notes: \* check for Isopropyl Alcohol (TO15) @ 0.00049 mg/m<sup>3</sup> Reporting Limit. (2-propanol)

Field Sample ID (Location)	Collection		Canister SN#	Sampler Kit SN#
	Date	Time		
GP-1-5	8/15	1014	24197-1266	
GP-1-10	8/15	1017	24197-1267	
GP-2-5	8/15	0948	24197-1269	
GP-2-10	8/15	0953	24197-1268	
GP-3-5	8/15	1110	24197-1262	
GP-3-10	8/15	1114	24197-1265	
GP-4-5	8/15	1137	24197-1263	
GP-4-10	8/15	1141	24197-1261	
GP-1-5-D	8/15	1029	22105-6802	

Analysis Requested	Indoor Air	Soil Gas	Canister Pressure/Vacuum			
			Initial	Final	Receipt	Final (psi)
<u>TO-3 / TO-15 / TO-15</u> <u>TPH, MIB, BTEX, PCE, /</u>		X	-29	-5		
		X	-29	-5		
		X	-28	-5		
		X	-29	-5		
		X	-29	-5		
		X	-29	-5		
		X	-29	-5		
		X	-29	-5		

Relinquished By: Russell Scott

Date: 8/15  
Time: 1:45

Received By: Muma

Temp (°C): N/A Work Order #: \_\_\_\_\_

Relinquished By: \_\_\_\_\_

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received By: \_\_\_\_\_

Condition: good

Custody Seals Intact?: Yes \_\_\_\_\_ No \_\_\_\_\_ None

Relinquished By: \_\_\_\_\_

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received By: \_\_\_\_\_

Shipped Via: \_\_\_\_\_



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# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0808455

ClientCode: AEL

WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Report to:	Ricky Bradford	Email: rbradford@aeiconsultants.com	Bill to:	Denise Mockel	Requested TAT: 5 days
	AEI Consultants	cc:		AEI Consultants	Date Received: 08/15/2008
	2500 Camino Diablo, Ste. #200	PO:		2500 Camino Diablo, Ste. #200	Date Printed: 08/15/2008
	Walnut Creek, CA 94597	ProjectNo: #116907; Vic's		Walnut Creek, CA 94597	
	(925) 283-6000 FAX (925) 944-2895			dmockel@aeiconsultants.com	

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0808455-001	GP-1-5	Soil Vapor	8/15/2008 10:14	<input type="checkbox"/>	A												
0808455-002	GP-1-10	Soil Vapor	8/15/2008 10:17	<input type="checkbox"/>	A												
0808455-003	GP-2-5	Soil Vapor	8/15/2008 9:48	<input type="checkbox"/>	A												
0808455-004	GP-2-10	Soil Vapor	8/15/2008 9:53	<input type="checkbox"/>	A												
0808455-005	GP-3-5	Soil Vapor	8/15/2008 11:10	<input type="checkbox"/>	A												
0808455-006	GP-3-10	Soil Vapor	8/15/2008 11:14	<input type="checkbox"/>	A												
0808455-007	GP-4-5	Soil Vapor	8/15/2008 11:37	<input type="checkbox"/>	A												
0808455-008	GP-4-10	Soil Vapor	8/15/2008 11:41	<input type="checkbox"/>	A												
0808455-009	GP-1-5-D	Soil Vapor	8/15/2008 10:29	<input type="checkbox"/>	A												

**Test Legend:**

1	TO3_SOILGAS	2		3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A contain testgroup.

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **8/15/08 3:02:53 PM**

Project Name: **#116907; Vic's**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **0808455** Matrix Soil Vapor

Carrier: Client Drop-In

#### Chain of Custody (COC) Information

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA
- Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Leak Check Compound\*

Extraction method TO15

Analytical methods TO15

Work Order: 0808455

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	Isopropyl Alcohol	DF	% SS
001A	GP-1-5	Soil Vapor	12.54	25	ND	1	N/A
002A	GP-1-10	Soil Vapor	12.6	25.14	ND	1	N/A
003A	GP-2-5	Soil Vapor	12.62	25.16	ND	1	N/A
004A	GP-2-10	Soil Vapor	12.01	24	ND	1	N/A
005A	GP-3-5	Soil Vapor	12.49	24.96	ND	1	N/A
006A	GP-3-10	Soil Vapor	12.39	24.68	ND	1	N/A
007A	GP-4-5	Soil Vapor	12.69	25.35	ND	1	N/A
008A	GP-4-10	Soil Vapor	11.63	23.16	ND	1	N/A
009A	GP-1-5-D	Soil Vapor	11.92	23.76	ND	1	N/A

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	Soil Vapor	psia	psia	10	µg/L

\* leak check compound is reported in µg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

The IPA reference is:

DTSC, Advisory-Active Soil Gas Investigations, January 28, 2003, page 10, section 2.4.2

"Tracer compounds, such as ...isopropanol..., may be used as leak check compounds, if a detection limit of 10 ug/L or less can be achieved."  
This implies that 10ug/L is the cut off definition for a leak, which equals 10,000 ug/m3.  
The other low IPA hits may be due to extremely small leaks or may be naturally occurring in soil gas, particularly at biologically active sites.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in $\mu\text{g}/\text{m}^3$ \*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-001A	0808455-002A	0808455-003A	0808455-004A	Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-1-5	GP-1-10	GP-2-5	GP-2-10	
Matrix	Soil Vapor	Soil Vapor	Soil Vapor	Soil Vapor	
Initial Pressure (psia)	12.54	12.6	12.62	12.01	
Final Pressure (psia)	25	25.14	25.16	24	
DF	1	1	1	1	

Soil Vapor W

Compound	Concentration				$\mu\text{g}/\text{m}^3$	ug/L
Benzene	ND	ND	ND	ND	6.5	NA
Ethylbenzene	ND	ND	ND	ND	8.8	NA
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	7.3	NA
Tetrachloroethene	ND	ND	39	48	14	NA
Toluene	ND	ND	ND	ND	7.7	NA
Xylenes	ND	ND	ND	ND	27	NA

### Surrogate Recoveries (%)

%SS1:	108	113	113	113
%SS2:	105	113	114	113
%SS3:	107	116	117	118

**Comments**

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in $\mu\text{g}/\text{m}^3$ \*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-005A	0808455-006A	0808455-007A	0808455-008A	Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-3-5	GP-3-10	GP-4-5	GP-4-10	
Matrix	Soil Vapor	Soil Vapor	Soil Vapor	Soil Vapor	
Initial Pressure (psia)	12.49	12.39	12.69	11.63	
Final Pressure (psia)	24.96	24.68	25.35	23.16	
DF	1	1	1	1	

Soil Vapor W

Compound	Concentration				$\mu\text{g}/\text{m}^3$	ug/L
Benzene	ND	ND	ND	ND	6.5	NA
Ethylbenzene	ND	ND	ND	ND	8.8	NA
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	7.3	NA
Tetrachloroethene	ND	ND	ND	ND	14	NA
Toluene	ND	ND	ND	ND	7.7	NA
Xylenes	ND	ND	ND	ND	27	NA

### Surrogate Recoveries (%)

%SS1:	105	111	107	112
%SS2:	107	113	109	113
%SS3:	111	116	112	117

**Comments**

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in $\mu\text{g}/\text{m}^3$ \*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-009A				Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-1-5-D				
Matrix	Soil Vapor				
Initial Pressure (psia)	11.92				
Final Pressure (psia)	23.76				
DF	1				

Soil Vapor W

Compound	Concentration				$\mu\text{g}/\text{m}^3$	ug/L
Benzene	ND				6.5	NA
Ethylbenzene	ND				8.8	NA
Methyl-t-butyl ether (MTBE)	ND				7.3	NA
Tetrachloroethene	ND				14	NA
Toluene	ND				7.7	NA
Xylenes	ND				27	NA

### Surrogate Recoveries (%)

%SS1:	110			
%SS2:	113			
%SS3:	117			

**Comments**

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in nL/L\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-001A	0808455-002A	0808455-003A	0808455-004A	Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-1-5	GP-1-10	GP-2-5	GP-2-10	
Matrix	Soil Vapor	Soil Vapor	Soil Vapor	Soil Vapor	
Initial Pressure (psia)	12.54	12.6	12.62	12.01	
Final Pressure (psia)	25	25.14	25.16	24	
DF	1	1	1	1	

Soil Vapor W

Compound	Concentration				nL/L	ug/L
Benzene	ND	ND	ND	ND	2.0	NA
Ethylbenzene	ND	ND	ND	ND	2.0	NA
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	2.0	NA
Tetrachloroethene	ND	ND	5.7	6.9	2.0	NA
Toluene	ND	ND	ND	ND	2.0	NA
Xylenes	ND	ND	ND	ND	6.0	NA

### Surrogate Recoveries (%)

%SS1:	108	113	113	113
%SS2:	105	113	114	113
%SS3:	107	116	117	118

**Comments**

\*vapor samples are reported in nL/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in nL/L\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-005A	0808455-006A	0808455-007A	0808455-008A	Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-3-5	GP-3-10	GP-4-5	GP-4-10	
Matrix	Soil Vapor	Soil Vapor	Soil Vapor	Soil Vapor	
Initial Pressure (psia)	12.49	12.39	12.69	11.63	
Final Pressure (psia)	24.96	24.68	25.35	23.16	
DF	1	1	1	1	

Soil Vapor W

Compound	Concentration				nL/L	ug/L
Benzene	ND	ND	ND	ND	2.0	NA
Ethylbenzene	ND	ND	ND	ND	2.0	NA
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	2.0	NA
Tetrachloroethene	ND	ND	ND	ND	2.0	NA
Toluene	ND	ND	ND	ND	2.0	NA
Xylenes	ND	ND	ND	ND	6.0	NA

### Surrogate Recoveries (%)

%SS1:	105	111	107	112
%SS2:	107	113	109	113
%SS3:	111	116	112	117

<b>Comments</b>				
-----------------	--	--	--	--

\*vapor samples are reported in nL/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.





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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/16/08
	Client P.O.:	Date Analyzed 08/16/08

### Volatile Organic Compounds in nL/L\*

Extraction Method: TO15

Analytical Method: TO15

Work Order: 0808455

Lab ID	0808455-009A				Reporting Limit for DF =1 and Pressure Ratio (Final/Initial) = 2
Client ID	GP-1-5-D				
Matrix	Soil Vapor				
Initial Pressure (psia)	11.92				
Final Pressure (psia)	23.76				
DF	1				

Soil Vapor      W

Compound	Concentration				nL/L	ug/L
Benzene	ND				2.0	NA
Ethylbenzene	ND				2.0	NA
Methyl-t-butyl ether (MTBE)	ND				2.0	NA
Tetrachloroethene	ND				2.0	NA
Toluene	ND				2.0	NA
Xylenes	ND				6.0	NA

### Surrogate Recoveries (%)

%SS1:	110			
%SS2:	113			
%SS3:	117			

**Comments**

\*vapor samples are reported in nL/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/18/08
	Client P.O.:	Date Analyzed 08/18/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline in $\mu\text{g}/\text{m}^3$ \*

Extraction method TO3

Analytical methods TO3

Work Order: 0808455

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	TPH(g)	DF	% SS
001A	GP-1-5	Soil Vapor	12.54	25	ND	1	N/A
002A	GP-1-10	Soil Vapor	12.6	25.14	ND	1	N/A
003A	GP-2-5	Soil Vapor	12.62	25.16	ND	1	N/A
004A	GP-2-10	Soil Vapor	12.01	24	ND	1	N/A
005A	GP-3-5	Soil Vapor	12.49	24.96	ND	1	N/A
006A	GP-3-10	Soil Vapor	12.39	24.68	ND	1	N/A
007A	GP-4-5	Soil Vapor	12.69	25.35	ND	1	N/A
008A	GP-4-10	Soil Vapor	11.63	23.16	ND	1	N/A
009A	GP-1-5-D	Soil Vapor	11.92	23.76	ND	1	N/A

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	Soil Vapor	psia	psia	1800	$\mu\text{g}/\text{m}^3$

\*soil vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's	Date Sampled: 08/15/08
		Date Received: 08/15/08
	Client Contact: Ricky Bradford	Date Extracted: 08/18/08
	Client P.O.:	Date Analyzed 08/18/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline in nL/L\*

Extraction method TO3

Analytical methods TO3

Work Order: 0808455

Lab ID	Client ID	Matrix	Initial Pressure	Final Pressure	TPH(g)	DF	% SS
001A	GP-1-5	Soil Vapor	12.54	25	ND	1	N/A
002A	GP-1-10	Soil Vapor	12.6	25.14	ND	1	N/A
003A	GP-2-5	Soil Vapor	12.62	25.16	ND	1	N/A
004A	GP-2-10	Soil Vapor	12.01	24	ND	1	N/A
005A	GP-3-5	Soil Vapor	12.49	24.96	ND	1	N/A
006A	GP-3-10	Soil Vapor	12.39	24.68	ND	1	N/A
007A	GP-4-5	Soil Vapor	12.69	25.35	ND	1	N/A
008A	GP-4-10	Soil Vapor	11.63	23.16	ND	1	N/A
009A	GP-1-5-D	Soil Vapor	11.92	23.76	ND	1	N/A

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	Soil Vapor	psia	psia	500	nL/L

\*soil vapor samples are reported in nL/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.



### QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soil Vapor

QC Matrix: Soil Vapor

BatchID: 37600

WorkOrder 0808455

EPA Method TO15		Extraction TO15							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Benzene	N/A	25	N/A	N/A	N/A	107	106	1.32	N/A	N/A	70 - 130	30
Ethylbenzene	N/A	25	N/A	N/A	N/A	120	120	0	N/A	N/A	70 - 130	30
Methyl-t-butyl ether (MTBE)	N/A	25	N/A	N/A	N/A	123	124	0.488	N/A	N/A	70 - 130	30
Tetrachloroethene	N/A	25	N/A	N/A	N/A	99.4	99.8	0.393	N/A	N/A	70 - 130	30
Toluene	N/A	25	N/A	N/A	N/A	112	113	0.784	N/A	N/A	70 - 130	30
Xylenes	N/A	75	N/A	N/A	N/A	122	123	1.01	N/A	N/A	70 - 130	30
%SS1:	N/A	500	N/A	N/A	N/A	116	114	1.34	N/A	N/A	70 - 130	30
%SS2:	N/A	500	N/A	N/A	N/A	112	112	0	N/A	N/A	70 - 130	30
%SS3:	N/A	500	N/A	N/A	N/A	116	116	0	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 37600 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0808455-001A	08/15/08 10:14 AM	08/16/08	08/16/08 1:20 AM	0808455-002A	08/15/08 10:17 AM	08/16/08	08/16/08 2:04 AM
0808455-003A	08/15/08 9:48 AM	08/16/08	08/16/08 2:48 AM	0808455-004A	08/15/08 9:53 AM	08/16/08	08/16/08 3:31 AM
0808455-005A	08/15/08 11:10 AM	08/16/08	08/16/08 4:16 AM	0808455-006A	08/15/08 11:14 AM	08/16/08	08/16/08 5:00 AM
0808455-007A	08/15/08 11:37 AM	08/16/08	08/16/08 5:44 AM	0808455-008A	08/15/08 11:41 AM	08/16/08	08/16/08 6:27 AM
0808455-009A	08/15/08 10:29 AM	08/16/08	08/16/08 7:11 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



### QC SUMMARY REPORT FOR TO3

W.O. Sample Matrix: Soil Vapor

QC Matrix: Soil Vapor

BatchID: 37643

WorkOrder 0808455

EPA Method TO3		Extraction TO3							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(g)	N/A	1250	N/A	N/A	N/A	98.9	98.6	0.341	N/A	N/A	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 37643 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0808455-001A	08/15/08 10:14 AM	08/18/08	08/18/08 5:36 PM	0808455-002A	08/15/08 10:17 AM	08/18/08	08/18/08 6:15 PM
0808455-003A	08/15/08 9:48 AM	08/18/08	08/18/08 6:52 PM	0808455-004A	08/15/08 9:53 AM	08/18/08	08/18/08 7:28 PM
0808455-005A	08/15/08 11:10 AM	08/18/08	08/18/08 8:07 PM	0808455-006A	08/15/08 11:14 AM	08/18/08	08/18/08 8:43 PM
0808455-007A	08/15/08 11:37 AM	08/18/08	08/18/08 9:19 PM	0808455-008A	08/15/08 11:41 AM	08/18/08	08/18/08 9:58 PM
0808455-009A	08/15/08 10:29 AM	08/18/08	08/18/08 10:35 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



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Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 09/30/08
	Client Contact: Ricky Bradford	Date Received: 10/01/08
	Client P.O.:	Date Reported: 10/07/08
		Date Completed: 10/02/08

**WorkOrder: 0810009**

October 07, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **10** analyzed samples from your project: **#116907; Vic's Automotive,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



# McC Campbell Analytical, Inc.

1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0810009

ClientCode: AEL

WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

Report to:	Ricky Bradford	Email: rbradford@aeiconsultants.com	Bill to:	Denise Mockel	Requested TAT: 5 days
	AEI Consultants	cc:		AEI Consultants	Date Received: 10/01/2008
	2500 Camino Diablo, Ste. #200	PO:		2500 Camino Diablo, Ste. #200	Date Printed: 10/01/2008
	Walnut Creek, CA 94597	ProjectNo: #116907; Vic's Automotive		Walnut Creek, CA 94597	
	(925) 283-6000 FAX (925) 944-2895			dmockel@aeiconsultants.com	

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0810009-001	MW-1S	Air	9/30/2008 16:55	<input type="checkbox"/>	A	A											
0810009-002	MW-2S	Air	9/30/2008 17:00	<input type="checkbox"/>	A												
0810009-003	MW-5S	Air	9/30/2008 17:15	<input type="checkbox"/>	A												
0810009-004	MW-6S	Air	9/30/2008 17:10	<input type="checkbox"/>	A												
0810009-005	MW-7S	Air	9/30/2008 17:05	<input type="checkbox"/>	A												
0810009-006	MW-10S	Air	9/30/2008 16:10	<input type="checkbox"/>	A												
0810009-007	MW-11S	Air	9/30/2008 16:15	<input type="checkbox"/>	A												
0810009-008	MW-12S	Air	9/30/2008 16:18	<input type="checkbox"/>	A												
0810009-009	PRED	Air	9/30/2008 16:00	<input type="checkbox"/>	A												
0810009-010	STACK	Air	9/30/2008 16:50	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A, 010A contain testgroup.

**Prepared by: Rosa Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.





### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **10/1/08 3:29:38 PM**  
 Project Name: **#116907; Vic's Automotive** Checklist completed and reviewed by: Rosa Venegas  
 WorkOrder N°: **0810009** Matrix Air Carrier: Client Drop-In

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted: Date contacted: Contacted by:

Comments:



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 09/30/08
	Client Contact: Ricky Bradford	Date Received: 10/01/08
	Client P.O.:	Date Extracted: 10/01/08-10/02/08
		Date Analyzed: 10/01/08-10/02/08

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0810009

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1S	A	230,d1	2.6	1.4	8.4	2.9	51	1	94
002A	MW-2S	A	780,d1	ND	1.4	12	4.4	75	1	96
003A	MW-5S	A	7200,d1	ND<50	88	230	28	380	20	97
004A	MW-6S	A	2300,d1	ND<50	25	160	16	140	20	120
005A	MW-7S	A	9900,d1	ND<110	180	270	18	500	20	98
006A	MW-10S	A	2500,d1	ND<10	34	110	22	230	2	109
007A	MW-11S	A	1800,d1	ND<40	37	84	17	180	2	103
008A	MW-12S	A	830,d1	ND<20	13	47	9.9	120	1	101
009A	PRED	A	4000,d1	ND<40	63	160	36	350	1	96
010A	STACK	A	ND	ND	ND	ND	ND	ND	1	97

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	0.25	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 09/30/08
	Client Contact: Ricky Bradford	Date Received: 10/01/08
	Client P.O.:	Date Extracted: 10/01/08-10/02/08
		Date Analyzed: 10/01/08-10/02/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0810009

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1S	A	65,d1	0.71	0.44	2.2	0.65	12	1	94
002A	MW-2S	A	220,d1	ND	0.44	3.1	1.0	17	1	96
003A	MW-5S	A	2000,d1	ND<14	27	61	6.2	87	20	97
004A	MW-6S	A	640,d1	ND<14	7.7	42	3.7	31	20	120
005A	MW-7S	A	2800,d1	ND<30	57	72	4.2	110	20	98
006A	MW-10S	A	690,d1	ND<4.0	10	29	5.1	53	2	109
007A	MW-11S	A	490,d1	ND<10	11	22	3.8	40	2	103
008A	MW-12S	A	230,d1	ND<5.0	3.9	12	2.2	28	1	101
009A	PRED	A	1100,d1	ND<10	20	42	8.2	78	1	96
010A	STACK	A	ND	ND	ND	ND	ND	ND	1	97

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L, water samples and all TCLP & SPLP extracts are reported in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 37711

WorkOrder 0810009

EPA Method SW8021B/8015Cm		Extraction SW5030B							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	N/A	60	N/A	N/A	N/A	109	113	2.86	N/A	N/A	70 - 130	20
MTBE	N/A	10	N/A	N/A	N/A	88.4	82.2	7.18	N/A	N/A	70 - 130	20
Benzene	N/A	10	N/A	N/A	N/A	84.3	86.8	2.89	N/A	N/A	70 - 130	20
Toluene	N/A	10	N/A	N/A	N/A	83	85.6	3.02	N/A	N/A	70 - 130	20
Ethylbenzene	N/A	10	N/A	N/A	N/A	86.5	89.1	2.94	N/A	N/A	70 - 130	20
Xylenes	N/A	30	N/A	N/A	N/A	85	87.5	2.95	N/A	N/A	70 - 130	20
%SS:	N/A	10	N/A	N/A	N/A	99	101	1.61	N/A	N/A	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 37711 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0810009-001A	09/30/08 4:55 PM	10/01/08	10/01/08 10:29 PM	0810009-001A	09/30/08 4:55 PM	10/01/08	10/01/08 10:29 PM
0810009-002A	09/30/08 5:00 PM	10/01/08	10/01/08 11:02 PM	0810009-002A	09/30/08 5:00 PM	10/01/08	10/01/08 11:02 PM
0810009-003A	09/30/08 5:15 PM	10/02/08	10/02/08 12:41 AM	0810009-003A	09/30/08 5:15 PM	10/02/08	10/02/08 12:41 AM
0810009-004A	09/30/08 5:10 PM	10/02/08	10/02/08 1:14 AM	0810009-004A	09/30/08 5:10 PM	10/02/08	10/02/08 1:14 AM
0810009-005A	09/30/08 5:05 PM	10/02/08	10/02/08 2:20 AM	0810009-005A	09/30/08 5:05 PM	10/02/08	10/02/08 2:20 AM
0810009-006A	09/30/08 4:10 PM	10/02/08	10/02/08 3:26 AM	0810009-006A	09/30/08 4:10 PM	10/02/08	10/02/08 3:26 AM
0810009-007A	09/30/08 4:15 PM	10/02/08	10/02/08 3:59 AM	0810009-007A	09/30/08 4:15 PM	10/02/08	10/02/08 3:59 AM
0810009-008A	09/30/08 4:18 PM	10/02/08	10/02/08 4:32 AM	0810009-008A	09/30/08 4:18 PM	10/02/08	10/02/08 4:32 AM
0810009-009A	09/30/08 4:00 PM	10/02/08	10/02/08 5:05 AM	0810009-009A	09/30/08 4:00 PM	10/02/08	10/02/08 5:05 AM
0810009-010A	09/30/08 4:50 PM	10/01/08	10/01/08 5:15 PM	0810009-010A	09/30/08 4:50 PM	10/01/08	10/01/08 5:15 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive, 245 8th Street, Oakland	Date Sampled: 09/30/08
	Client Contact: Ricky Bradford	Date Received: 10/01/08
	Client P.O.:	Date Reported: 10/08/08
		Date Completed: 10/08/08

**WorkOrder: 0810010**

October 08, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#116907; Vic's Automotive, 245 8th**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

0810010

**McCAMPBELL ANALYTICAL INC.**  
 1538 Willow Pass Road, Pittsburg, CA 94565  
 Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**  RUSH  24 HR  48 HR  72 HR  5 DAY  
 EDF Required?  Yes  No PDF Required?  Yes  No

Report To: Ricky Bradford Bill To: same  
 Company: AEI Consultants  
 2500 Camino Diablo, Suite 200  
 Walnut Creek, CA 94597 E-Mail: rbradford@aeiconsultatns.com  
 Telephone: (925) 944-2899 Fax: (925) 944-2895  
 AEI Project No. 116907 Project Name: Vic's Automotive  
 Project Location: 245 8<sup>th</sup> Street, Oakland, CA 94607  
 Sampler Signature: *R. Beattie*

Analysis Request Other Comments

SAMPLE ID	FIELD POINT NAME	SAMPLING		# of Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other					
INF	INF	7/30	16:35	3	3VOA	X					X	X							
POST-AS	POST-AS	7/30	16:45	3	3VOA	X					X	X							
POST-CI	POST-CI	-	-	3	3VOA	X					X	X							
EFF	EFF	7/30	16:48	3	3VOA	X					X	X							

TPH-g & MBTEX (SW8015Cm /SW8021B)																			
TPH-d (SW8015Cm)																			
**Total Oil & Grease HC (1664 HEM-SGT)																			
**For TOG HC Use 1 Liter Ambers (w/ HCl)																			
*Total Lead (TTL/E200.8)																			
*For Lead Use 250 ml HDPE (w/ HNO <sub>3</sub> )																			
EBMUD 7 Metals (Cd, Cr, Cu, Pb, Hg, Ni, Zn)																			
CAM 17 Metals (200.7)																			
PP13 Metals																			
RCRA 8 Metals (Ag, As, Ba, Cd, Cr, Hg, Pb, Se)																			
LUFT 5 Metals (Cd, Cr, Ni, Pb, Zn)																			
HVOCs - 8010 target list (SW8260B)																			
MTBE (SW8260B)																			
**Flash Point (SW1010)																			
**For FP Use 1 Liter Amber (unpreserved)																			
Flow Totalizer Reading																			

Relinquished By: *R. Beattie* Date: 10/1 Time: 12:10 Received By: *[Signature]*  
 Relinquished By: Date: Time: Received By:  
 Relinquished By: Date: Time: Received By:

ICE/° 0.2 ✓ PRESERVATION APPROPRIATE ✓  
 GOOD CONDITION ✓ HEAD SPACE ABSENT CONTAINERS ✓  
 DECHLORINATED IN LAB \_\_\_\_\_ PERSERVED IN LAB \_\_\_\_\_  
 VOAS / O&G / METALS / OTHER

**McC Campbell Analytical, Inc.**

1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0810010**

**ClientCode: AEL**

WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Report to: Ricky Bradford  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX (925) 944-2895

Email: rbradford@aeiconsultants.com  
 cc:  
 PO:  
 ProjectNo: #116907; Vic's Automotive, 245 8th Street, Oakland

Bill to: Denise Mockel  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 dmockel@aeiconsultants.com

**Requested TAT: 5 days**  
*Date Received: 10/01/2008*  
*Date Printed: 10/01/2008*

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0810010-001	INF	Water	9/30/2008 10:35	<input type="checkbox"/>	A	A										
0810010-002	POST-AS	Water	9/30/2008 10:45	<input type="checkbox"/>	A											
0810010-003	EFF	Water	9/30/2008 10:48	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTEX_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Ana Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



**Sample Receipt Checklist**

Client Name: **AEI Consultants** Date and Time Received: **10/01/08 3:53:10 PM**  
Project Name: **#116907; Vic's Automotive, 245 8th Street, Oakland** Checklist completed and reviewed by: **Ana Venegas**  
WorkOrder N°: **0810010** Matrix Water Carrier: Client Drop-In

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
Chain of custody signed when relinquished and received? Yes  No   
Chain of custody agrees with sample labels? Yes  No   
Sample IDs noted by Client on COC? Yes  No   
Date and Time of collection noted by Client on COC? Yes  No   
Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
Shipping container/cooler in good condition? Yes  No   
Samples in proper containers/bottles? Yes  No   
Sample containers intact? Yes  No   
Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
Container/Temp Blank temperature Cooler Temp: 0.2°C NA   
Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
Sample labels checked for correct preservation? Yes  No   
TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
Samples Received on Ice? Yes  No   
(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted: Date contacted: Contacted by:

Comments:







**QC SUMMARY REPORT FOR SW8021B/8015Cm**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 37711

WorkOrder 0810010

Analyte	EPA Method SW8021B/8015Cm		Extraction SW5030B						Spiked Sample ID: 0810023-001A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	87.6	99	12.2	109	113	2.86	70 - 130	20	70 - 130	20
MTBE	ND	10	92.1	93	0.930	88.4	82.2	7.18	70 - 130	20	70 - 130	20
Benzene	ND	10	91.9	94.2	2.42	84.3	86.8	2.89	70 - 130	20	70 - 130	20
Toluene	ND	10	89.5	95.1	5.99	83	85.6	3.02	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	93.3	97	3.82	86.5	89.1	2.94	70 - 130	20	70 - 130	20
Xylenes	ND	30	91.6	95.7	4.46	85	87.5	2.95	70 - 130	20	70 - 130	20
%SS:	104	10	116	116	0	99	101	1.61	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 37711 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0810010-001A	09/30/08 10:35 AM	10/03/08	10/03/08 12:20 AM	0810010-002A	09/30/08 10:45 AM	10/03/08	10/03/08 5:30 PM
0810010-003A	09/30/08 10:48 AM	10/02/08	10/02/08 2:02 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: # 116907; Vic's Automotive	Date Sampled: 09/23/08
	Client Contact: Ricky Bradford	Date Received: 09/23/08
	Client P.O.:	Date Reported: 09/26/08
		Date Completed: 09/26/08

**WorkOrder: 0809702**

September 26, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **# 116907; Vic's Automotive,**
- 2) A QC report for the above sample,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

0809708

**McCAMPBELL ANALYTICAL INC.**  
 1538 Willow Pass Road, Pittsburg, CA 94565  
 Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**  24 HR  48 HR  72 HR  5 DAY  
 EDF Required?  Yes  No PDF Required?  Yes  No

Report To: Ricky Bradford Bill To: same  
 Company: AEI Consultants  
 2500 Camino Diablo, Suite 200  
 Walnut Creek, CA 94597 E-Mail: rbradford@aeiconsultatns.com  
 Telephone: (925) 944-2899 Fax: (925) 944-2895  
 AEI Project No. 116907 Project Name: Vic's Automotive  
 Project Location: 245 8<sup>th</sup> Street, Oakland, CA 94607  
 Sampler Signature: *R. Bradford*

Analysis Request Other Comments

SAMPLE ID	FIELD POINT NAME	SAMPLING		# of Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other
<del>INF</del>	<del>INF</del>			<del>3</del>	<del>3VOA</del>	<del>X</del>					<del>X</del>	<del>X</del>		
<del>POST-AS</del>	<del>POST-AS</del>			<del>3</del>	<del>3VOA</del>	<del>X</del>					<del>X</del>	<del>X</del>		
<del>POST-CL</del>	<del>POST-CL</del>			<del>3</del>	<del>3VOA</del>	<del>X</del>					<del>X</del>	<del>X</del>		
✓ EFF	EFF			5	3VOA 2AMB	X					X	X		


TPH-g & MBTEX (SW8015Cm/SW8021B)															
TPH-d (SW8015Cm)															
**Total Oil & Grease HC (1664 HEM-SGT)															
**For TOG HC Use 1 Liter Ambers (w/ HCl)															
*Total Lead (TTLC/E200.8)															
*For Lead Use 250 ml HDPE (w/ HNO <sub>3</sub> )															
EBMUD 7 Metals (Cd, Cr, Cu, Pb, Hg, Ni, Zn)															
CAM 17 Metals (200.7)															
PP13 Metals															
RCRA 8 Metals (Ag, As, Ba, Cd, Cr, Hg, Pb, Se)															
LUFT 5 Metals (Cd, Cr, Ni, Pb, Zn)															
HVOCs - 8010 target list (SW8260B)															
MTBE (SW8260B)															
**Flash Point (SW1010)															
**For FP Use 1 Liter Amber (unpreserved)															
Flow Totalizer Reading <u>1109.360</u>															

Relinquished By: *R. Bradford* Date: 9/23 Time: 12:45 Received By: *Enviro Tech* *mw 1243*  
 Relinquished By: *Enviro Tech* Date: 9/23 Time: 1600 Received By: *Gene Gutz*  
 Relinquished By: *Donk Gutz* Date: 9/23 Time: 1645 Received By: *K. Burk*

ICE/r° 3.4 ✓ PRESERVATION \_\_\_\_\_  
 GOOD CONDITION \_\_\_\_\_ APPROPRIATE \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_ CONTAINERS \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_ PERSERVED IN LAB \_\_\_\_\_

VOAS O&G METALS OTHER

# McC Campbell Analytical, Inc.


 1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 0809702**

**ClientCode: AEL**

WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>	Ricky Bradford	Email: rbradford@aeiconsultants.com	<b>Bill to:</b>	Denise Mockel	<b>Requested TAT:</b>	<b>5 days</b>
	AEI Consultants	cc:		AEI Consultants	<b>Date Received:</b>	<b>09/23/2008</b>
	2500 Camino Diablo, Ste. #200	PO:		2500 Camino Diablo, Ste. #200	<b>Date Printed:</b>	<b>09/23/2008</b>
	Walnut Creek, CA 94597	ProjectNo: # 116907; Vic's Automotive		Walnut Creek, CA 94597		
	(925) 944-2899    FAX (925) 944-2895			dmockel@aeiconsultants.com		

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0809702-001	EFF	Water	9/23/2008	<input type="checkbox"/>	A	A											

**Test Legend:**

1	1664A_SG_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Kimberly Burks**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **9/23/2008 6:49:04 PM**  
 Project Name: **# 116907; Vic's Automotive** Checklist completed and reviewed by: **Kimberly Burks**  
 WorkOrder N°: **0809702** Matrix Water Carrier: Derik Cartan (MAI Courier)

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 3.4°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted: Date contacted: Contacted by:

Comments:





**QC SUMMARY REPORT FOR E1664A**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 38337

WorkOrder 0809702

EPA Method E1664A		Extraction E1664A							Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
HEMSGT	N/A	20.83	N/A	N/A	N/A	92	89	3.27	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 38337 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0809702-001A	09/23/08	09/23/08	09/26/08 10:15 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate therefore unable to comply with method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





**McC Campbell Analytical, Inc.**

"When Quality Counts"

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Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 07/30/08
	Client Contact: Ricky Bradford	Date Received: 07/31/08
	Client P.O.:	Date Reported: 08/05/08
		Date Completed: 08/05/08

**WorkOrder: 0807733**

August 05, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **#116907; Vic's Automotive,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

0807733

**McCAMPBELL ANALYTICAL INC.**

1538 Willow Pass Road, Pittsburg, CA 94565

Telephone: (925) 252-9262

Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY

EDF Required?  Yes  No

PDF Required?  Yes  No

Report To: Ricky Bradford Bill To: same  
 Company: AEI Consultants  
 2500 Camino Diablo, Suite 200  
 Walnut Creek, CA 94597 E-Mail: rbradford@aeiconsultatns.com  
 Telephone: (925) 944-2899 Fax: (925) 944-2895  
 AEI Project No. 116907 Project Name: Vic's Automotive  
 Project Location: 245 8<sup>th</sup> Street, Oakland, CA 94607  
 Sampler Signature: *R. Bradford*

Analysis Request Other Comments

SAMPLE ID	FIELD POINT NAME	SAMPLING		# of Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments	
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other				CAM 17 Metals
MW-1S	MW-1S	-	-	1	TB			X										X
MW-2S	MW-2S	-	-	1	TB			X										X
MW-5S	MW-5S	-	-	4	TB			X										X
MW-6S	MW-6S	7/30	18:05	4	TB			X										X
MW-7S	MW-7S		18:00	1	TB			X										X
MW-10S	MW-10S		17:55	1	TB			X										X
MW-11S	MW-11S		17:50	1	TB			X										X
MW-12S	MW-12S		17:48	1	TB			X										X
POSTD	POSTD		17:45	1	TB			X										X
PRED	PRED		17:40	1	TB			X										X
AS	AS		18:10	1	TB			X										X
STACK	STACK		18:15	1	TB			X										X
				1	TB			X										X

TPH-g & MBTEX (SW8021B/8015Cm)  
 TPH-d (SW8015Cm)  
 TRPH (E418.1) w/ Silica Gel Clean-up by IRS  
 Total Petroleum Oil & Grease (5520 E&F/B&F)  
 \*Total Lead (TTL/E200.8)  
 \*\*For Lead Use 250 ml HDPE w/ HNO<sub>3</sub> preserv.

Relinquished By: *R. Bradford* Date: 7/31 Time: 11:00 Received By: *Mona V. J.*  
 Relinquished By: Date: Time: Received By:  
 Relinquished By: Date: Time: Received By:

ICE/° *NO*  
 GOOD CONDITION \_\_\_\_\_  
 HEAD SPACE ABSENT \_\_\_\_\_  
 DECHLORINATED IN LAB \_\_\_\_\_  
 PRESERVATION VOAS O&G METALS OTHER  
 APPROPRIATE CONTAINERS \_\_\_\_\_  
 PERSERVED IN LAB \_\_\_\_\_

# McC Campbell Analytical, Inc.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0807733

ClientCode: AEL

WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

Report to:	Ricky Bradford	Email: rbradford@aeiconsultants.com	Bill to:	Denise Mockel	Requested TAT: 5 days
	AEI Consultants	cc:		AEI Consultants	Date Received: 07/31/2008
	2500 Camino Diablo, Ste. #200	PO:		2500 Camino Diablo, Ste. #200	Date Printed: 07/31/2008
	Walnut Creek, CA 94597	ProjectNo: #116907; Vic's Automotive		Walnut Creek, CA 94597	
	(925) 283-6000 FAX (925) 944-2895			dmockel@aeiconsultants.com	

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0807733-001	MW-6S	Air	7/30/2008 18:05	<input type="checkbox"/>	A	A											
0807733-002	MW-7S	Air	7/30/2008 18:00	<input type="checkbox"/>	A												
0807733-003	MW-10S	Air	7/30/2008 17:55	<input type="checkbox"/>	A												
0807733-004	MW-11S	Air	7/30/2008 5:50	<input type="checkbox"/>	A												
0807733-005	MW-12S	Air	7/30/2008 17:48	<input type="checkbox"/>	A												
0807733-006	POSTD	Air	7/30/2008 17:45	<input type="checkbox"/>	A												
0807733-007	PRED	Air	7/30/2008 17:40	<input type="checkbox"/>	A												
0807733-008	AS	Air	7/30/2008 18:10	<input type="checkbox"/>	A												
0807733-009	STACK	Air	7/30/2008 18:15	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A contain testgroup.

**Prepared by: Maria Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **07/31/08 11:23:54 AM**  
 Project Name: **#116907; Vic's Automotive** Checklist completed and reviewed by: **Maria Venegas**  
 WorkOrder N°: **0807733** Matrix Air Carrier: Client Drop-In

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Contacted by: \_\_\_\_\_

Comments: Not enough air in MW-7S to analyze



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"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 07/30/08
	Client Contact: Ricky Bradford	Date Received: 07/31/08
	Client P.O.:	Date Extracted: 07/31/08-08/02/08
		Date Analyzed 07/31/08-08/02/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0807733

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-6S	A	1600,d1	ND<17	5.5	52	9.9	85	6.7	122
003A	MW-10S	A	5700,d1	ND<50	51	190	42	420	20	120
004A	MW-11S	A	5800,d1	ND<110	73	190	58	440	20	120
005A	MW-12S	A	1600,d1	ND<18	15	78	17	140	4	95
006A	POSTD	A	1900,d1	ND<50	24	75	13	130	20	109
007A	PRED	A	7700,d1	ND<25	77	240	44	400	10	112
008A	AS	A	150,d1	ND<5.0	2.6	8.5	0.90	18	2	98
009A	STACK	A	95,d1	ND	0.30	2.4	0.71	9.3	1	100

Reporting Limit for DF =1; ND means not detected at or	A	50	5.0	0.5	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 07/30/08
	Client Contact: Ricky Bradford	Date Received: 07/31/08
	Client P.O.:	Date Extracted: 07/31/08-08/02/08
		Date Analyzed: 07/31/08-08/02/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0807733

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-6S	A	460,d1	ND<4.5	1.7	14	2.2	19	6.7	122
003A	MW-10S	A	1600,d1	ND<14	16	50	9.5	95	20	120
004A	MW-11S	A	1600,d1	ND<30	22	50	13	100	20	120
005A	MW-12S	A	450,d1	ND<5.0	4.5	20	3.8	32	4	95
006A	POSTD	A	540,d1	ND<14	7.3	20	3.0	30	20	109
007A	PRED	A	2200,d1	ND<6.8	24	62	10	90	10	112
008A	AS	A	41,d1	ND<1.4	0.81	2.2	0.20	4.2	2	98
009A	STACK	A	27,d1	ND	0.091	0.64	0.16	2.1	1	100

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* vapor samples are reported in µL/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L, water samples and all TCLP & SPLP extracts are reported in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

W.O. Sample Matrix: Air

QC Matrix: Water

BatchID: 37267

WorkOrder 0807733

EPA Method SW8021B/8015Cm		Extraction SW5030B							Spiked Sample ID: 0807709-007B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	96	93.4	2.77	97.3	99.2	1.88	70 - 130	20	70 - 130	20
MTBE	ND	10	111	105	5.15	84.8	103	19.0	70 - 130	20	70 - 130	20
Benzene	ND	10	93.4	90.3	3.37	98.7	90.5	8.74	70 - 130	20	70 - 130	20
Toluene	ND	10	104	101	3.03	111	101	9.09	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	102	98.9	3.14	109	99.3	9.29	70 - 130	20	70 - 130	20
Xylenes	ND	30	112	110	2.18	120	109	8.99	70 - 130	20	70 - 130	20
%SS:	98	10	96	95	0.239	103	98	4.78	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 37267 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0807733-001A	07/30/08 6:05 PM	08/02/08	08/02/08 3:59 AM	0807733-001A	07/30/08 6:05 PM	08/02/08	08/02/08 3:59 AM
0807733-003A	07/30/08 5:55 PM	07/31/08	07/31/08 9:08 PM	0807733-003A	07/30/08 5:55 PM	07/31/08	07/31/08 9:08 PM
0807733-004A	07/30/08 5:50 AM	07/31/08	07/31/08 9:38 PM	0807733-004A	07/30/08 5:50 AM	07/31/08	07/31/08 9:38 PM
0807733-005A	07/30/08 5:48 PM	07/31/08	07/31/08 10:38 PM	0807733-005A	07/30/08 5:48 PM	07/31/08	07/31/08 10:38 PM
0807733-006A	07/30/08 5:45 PM	07/31/08	07/31/08 10:08 PM	0807733-006A	07/30/08 5:45 PM	07/31/08	07/31/08 10:08 PM
0807733-007A	07/30/08 5:40 PM	08/01/08	08/01/08 1:10 AM	0807733-007A	07/30/08 5:40 PM	08/01/08	08/01/08 1:10 AM
0807733-008A	07/30/08 6:10 PM	08/01/08	08/01/08 1:40 AM	0807733-008A	07/30/08 6:10 PM	08/01/08	08/01/08 1:40 AM
0807733-009A	07/30/08 6:15 PM	08/01/08	08/01/08 2:10 AM	0807733-009A	07/30/08 6:15 PM	08/01/08	08/01/08 2:10 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



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Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 07/30/08
	Client Contact: Ricky Bradford	Date Received: 07/31/08
	Client P.O.:	Date Reported: 08/06/08
		Date Completed: 08/06/08

**WorkOrder: 0807734**

August 06, 2008

Dear Ricky:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#116907; Vic's Automotive,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



0807734

**McCAMPBELL ANALYTICAL INC.**  
 1538 Willow Pass Road, Pittsburg, CA 94565  
 Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**  
**TURN AROUND TIME**       
 RUSH 24 HR 48 HR 72 HR 5 DAY  
 EDF Required?  Yes  No PDF Required?  Yes  No

Report To: Ricky Bradford Bill To: same  
 Company: AEI Consultants  
 2500 Camino Diablo, Suite 200  
 Walnut Creek, CA 94597 E-Mail: rbradford@aeiconsultatns.com  
 Telephone: (925) 944-2899 Fax: (925) 944-2895  
 AEI Project No. 116907 Project Name: Vic's Automotive  
 Project Location: 245 8<sup>th</sup> Street, Oakland, CA 94607  
 Sampler Signature: *[Signature]*

		Analysis Request										Other	Comments	
		TPH-g & MBTEX (SW8015Cm)												
		TPH-d (SW8015Cm)												
		TRPH (E418.1) w/ Silica Gel Clean-up by IRS												
		Total Oil & Grease HC (1664 HEM-SGT)												
		*Dissolved Lead (E200.8)												
		*For Lead Use 250 ml HDPE (HNO <sub>3</sub> preserved)												
		Dissolved (Ferrous) Iron (EPA 200.8)												
		Calcium, Magnesium, Manganese (EPA 200.8)												
		TDS and TSS (SM2540C & D)												
		Heterotrophic Plate Count												
		EBMUD 7 Metals (Cd, Cr, Cu, Pb, Hg, Ni, Zn)												
		CAM 17 Metals (EPA 200.8)												
		PP13 Metals												
		RCRA 8 Metals (Ag, As, Ba, Cd, Cr, Hg, Pb, Se)												
		LUFF 5 Metals (Cd, Cr, Ni, Pb, Zn)												
		HVOCs - 8010 target list (SW8260B)												
		MTBE (SW8260B)												
		**Flash Point (SW1010)												
		**For FP Use 1 Liter Amber (unpreserved)												

✓  
+  
+  
+

SAMPLE ID	FIELD POINT NAME	SAMPLING		# of Containers	Type Containers	MATRIX					METHOD PRESERVED						
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other			
INF	INF	7/30	10:40		VOA	X					X	X					
POST-AS	POST-AS		10:50		VOA	X					X	X					
POST-C1	POST-C1		10:45		VOA	X					X	X					
EFF	EFF		10:42		VOA	X					X	X					

Relinquished By: *[Signature]* Date: 7/31 Time: 11:00 Received By: *[Signature]*  
 Relinquished By: Date: Time: Received By:  
 Relinquished By: Date: Time: Received By:

ICE/t° 6.0°C ✓  
 GOOD CONDITION ✓  
 HEAD SPACE ABSENT ✓  
 DECHLORINATED IN LAB \_\_\_\_\_ PRESERVED IN LAB \_\_\_\_\_  
 PRESERVATION APPROPRIATE CONTAINERS ✓  
 VOAS ✓ O&G METALS OTHER

**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
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**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0807734**

**ClientCode: AEL**

WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

**Report to:**  
 Ricky Bradford  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX (925) 944-2895

**Email:** rbradford@aeiconsultants.com  
**cc:**  
**PO:**  
**ProjectNo:** #116907; Vic's Automotive

**Bill to:**  
 Denise Mockel  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 dmockel@aeiconsultants.com

**Requested TAT: 5 days**  
**Date Received: 07/31/2008**  
**Date Printed: 07/31/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0807734-001	INF	Water	7/30/2008 10:40	<input type="checkbox"/>	A	A											
0807734-002	POST-AS	Water	7/30/2008 10:50	<input type="checkbox"/>	A												
0807734-003	POST-C1	Water	7/30/2008 10:45	<input type="checkbox"/>	A												
0807734-004	EFF	Water	7/30/2008 10:42	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTEX_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **7/31/08 11:23:32 AM**  
 Project Name: **#116907; Vic's Automotive** Checklist completed and reviewed by: **Melissa Valles**  
 WorkOrder N°: **0807734** Matrix Water Carrier: Client Drop-In

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: 6°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No   
 (Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted: Date contacted: Contacted by:

Comments:



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AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #116907; Vic's Automotive	Date Sampled: 07/30/08
	Client Contact: Ricky Bradford	Date Received: 07/31/08
	Client P.O.:	Date Analyzed: 08/04/08
		Date Extracted: 08/04/08

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0807734

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	9400,d1	220	160	510	60	1100	10	98
002A	POST-AS	W	130,d1	16	1.1	3.3	0.73	10	1	102
003A	POST-C1	W	110,d1	15	0.91	2.8	0.61	8.9	1	101
004A	EFF	W	ND	30	ND	ND	ND	ND	1	104

Reporting Limit for DF =1; ND means not detected at or	W	50	5.0	0.5	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 37267

WorkOrder 0807734

Analyte	EPA Method SW8021B/8015Cm		Extraction SW5030B						Spiked Sample ID: 0807709-007B			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>£</sup>	ND	60	96	93.4	2.77	97.3	99.2	1.88	70 - 130	20	70 - 130	20
MTBE	ND	10	111	105	5.15	84.8	103	19.0	70 - 130	20	70 - 130	20
Benzene	ND	10	93.4	90.3	3.37	98.7	90.5	8.74	70 - 130	20	70 - 130	20
Toluene	ND	10	104	101	3.03	111	101	9.09	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	102	98.9	3.14	109	99.3	9.29	70 - 130	20	70 - 130	20
Xylenes	ND	30	112	110	2.18	120	109	8.99	70 - 130	20	70 - 130	20
%SS:	98	10	96	95	0.239	103	98	4.78	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 37267 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0807734-001A	07/30/08 10:40 AM	08/04/08	08/04/08 10:32 PM	0807734-002A	07/30/08 10:50 AM	08/04/08	08/04/08 7:31 PM
0807734-003A	07/30/08 10:45 AM	08/04/08	08/04/08 9:01 PM	0807734-004A	07/30/08 10:42 AM	08/04/08	08/04/08 8:01 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

**APPENDIX D**

**REGULATORY CORRESPONDENCE CONCERNING  
THE HDPE PIPING LATERALS**

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

October 3, 2008

Mr. Richard Lum and Ms. Linda Lum  
2188 Hillside Drive  
San Leandro, CA 94577-6369

Mr. Victor Lum  
Vic's Automotive  
245 8<sup>th</sup> Street  
Oakland, CA 94607

Subject: Fuel Leak Case No. RO0000202 and Geotracker Global ID T0600101143, Vic's Automotive, 245 8<sup>th</sup> Street, Oakland, CA 94607

Dear Mr. and Ms. Lum and Victor Lum:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "*Monitoring Well Installation & Quarterly Site Monitoring Report (Second Quarter 2008)*," dated August 1, 2008 and prepared by AEI Consultants. The report presents the results from installation of three monitoring wells, operation of the high vacuum dual phase extraction (HVDPE) system, and groundwater monitoring. Recommendations for future activities were presented in the report summary.

Based on our review of the report contents and recommendations, we request that you address the following technical comments, perform the proposed work, and send us the reports described below.

**TECHNICAL COMMENTS**

1. **Suspension of Quarterly Soil Vapor Sampling and Continued Operation of HVDPE System.** We concur with continued operation of the HVDPE system and the proposal to suspend quarterly soil vapor sampling during operation of the HVDPE system. Soil vapor sampling will be required following completion of HVDPE remediation to assess rebound and confirm site cleanup.
2. **Quarterly Groundwater Monitoring.** Please include recently installed monitoring wells MW-8, MW-9, and MW-13 in the quarterly groundwater monitoring program. The results are to be presented in the Quarterly Monitoring Reports requested below.
3. **Screening Soil Vapor Probes.** The proposal to screen the soil vapor probes for TVH, CO4, O2, and CO2 with an RKI Eagle gas detector on a quarterly rather than monthly basis is acceptable. Please present the results in the Quarterly Monitoring Reports requested below.

4. **Conveyance Piping Laterals.** The proposal to install piping laterals for off-site wells MW-10, MW-11, and MW-12 is acceptable in order to continue to use the wells for HVDPE.
5. **Proposed Wells MW-14, MW-15, and MW-16.** We concur with the proposed locations for off-site monitoring wells MW-14, MW-15, and MW-16. Please present well installation results including boring logs, well completion diagrams, and sampling results (including a summary table of soil analytical data) for the proposed wells no later than the Quarterly Groundwater Monitoring Report for Fourth Quarter 2008 Report requested below.

#### TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **November 13, 2008** – Quarterly Groundwater Monitoring Report for Third Quarter 2008
- **February 27, 2009** – Quarterly Groundwater Monitoring Report for Fourth Quarter 2008 with Well Installation Results
- **May 13, 2009** – Quarterly Groundwater Monitoring Report for First Quarter 2009
- **August 13, 2009** – Quarterly Groundwater Monitoring Report for Second Quarter 2009

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.swrcb.ca.gov/ust/cleanup/electronic\\_reporting](http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting)).



Richard and Linda Lum  
Victor Lum  
RO0000202  
October 3, 2008  
Page 3

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

#### UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org).

Sincerely,



Jerry Wickham, California PG 3766, CEG 1177, and CHG 297  
Senior Hazardous Materials Specialist

Richard and Linda Lum  
Victor Lum  
RO0000202  
October 3, 2008  
Page 4

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Ricky Bradford  
AEI Consultants  
2500 Camino Diablo, Suite 200  
Walnut Creek, CA 94597

Peter McIntyre  
AEI Consultants  
2500 Camino Diablo, Suite 200  
Walnut Creek, CA 94597

Donna Drogos, ACEH  
Jerry Wickham, ACEH  
File

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<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)</b>	<b>ISSUE DATE:</b> July 5, 2005
	<b>REVISION DATE:</b> December 16, 2005
	<b>PREVIOUS REVISIONS:</b> October 31, 2005
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

**REQUIREMENTS**

- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:  
RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

**Additional Recommendations**

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

**Submission Instructions**

1) Obtain User Name and Password:

- a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
  - i) Send an e-mail to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org)
  - or
  - ii) Send a fax on company letterhead to (510) 337-9335, to the attention of Alicia Lam-Finneke.
- b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**

2) Upload Files to the ftp Site

- a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
  - (i) Note: Netscape and Firefox browsers will not open the FTP site.
- b) Click on File, then on Login As.
- c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
- d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
- e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs

- a) Send email to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org) notify us that you have placed a report on our ftp site.
- b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name at acgov.org. (e.g., [firstname.lastname@acgov.org](mailto:firstname.lastname@acgov.org))
- c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload)

## Ricky Bradford

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**From:** Wickham, Jerry, Env. Health [jerry.wickham@acgov.org]  
**Sent:** Thursday, June 19, 2008 4:21 PM  
**To:** Yoo, James; Ricky Bradford  
**Subject:** RE: Followup Regarding Extraction Wells Beneath New Building for 245 8th Street, Oakland Remediation Project

Ricky,

The proposal to leave the wells in place for ongoing remediation is acceptable to Alameda County Environmental Health.

Regards,

### Jerry Wickham

Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502  
510-567-6791  
jerry.wickham@acgov.org

---

**From:** Yoo, James  
**Sent:** Thursday, June 12, 2008 3:02 PM  
**To:** Ricky Bradford  
**Cc:** Wickham, Jerry, Env. Health  
**Subject:** RE: Followup Regarding Extraction Wells Beneath New Building for 245 8th Street, Oakland Remediation Project

Ricky:

Your proposal seems fine. I don't see any problems with doing this.

Thanks.

JAMES YOO  
ENVIRONMENTAL COMPLIANCE SPECIALIST  
ALAMEDA COUNTY PUBLIC WORKS AGENCY  
WATER RESOURCES SECTION  
399 Elmhurst Street  
Hayward, CA 94544  
Ph: 510-670-6633  
Fax: 510-782-1939

website: [www.acgov.org/pwa/wells](http://www.acgov.org/pwa/wells)

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**From:** Ricky Bradford [mailto:rbradford@aeiconsultants.com]

9/3/2008

**Sent:** Thursday, June 12, 2008 12:22 PM

**To:** Yoo, James

**Cc:** Wickham, Jerry, Env. Health

**Subject:** Followup Regarding Extraction Wells Beneath New Building for 245 8th Street, Oakland Remediation Project

Hi James, I just wanted to email you a site map and piping plan regarding the message I left you this morning about leaving three (3) monitoring/extraction wells (i.e., MW-10, MW-11, and MW-12) in place beneath a proposed building at 708 Alice Street. The wells were installed for the monitoring and remediation of a fuel release from the 245 8<sup>th</sup> Street property. The 708 Alice Street property has been vacant for many years now, but building plans have been approved and the owner is going to build on the property. We have discussed this situation with our case manager Mr. Jerry Wickham at Alameda County Environmental Health (ACEH).

Basically, we have a large groundwater plume (>150-feet) extending from onsite to somewhere beyond 7<sup>th</sup> Street and a potential vapor intrusion concern at nearby residences. We've been actively remediating using onsite wells since June of last year and offsite wells at 708 Alice Street since November of last year. Rather than abandoning the wells, which would make the cleanup much more difficult and costly, we would like to leave MW-10, MW-11, and MW-12 in place beneath the proposed building as described in the attached drawings. We have designed the wells and piping network in such a way that we'll still have the ability to effectively seal the wells with a cement slurry using the 1" extraction hose, called a "drop tube" or "stinger", as a tremi-pipe. Please refer to the attached piping plan for more details.

Thanks for you time and consideration in this matter. I look forward to hearing from you and discussing the specifics. Should you have any questions or comments, or need any additional information, you may reach me at the office or on my cell phone.

Sincerely,

**Ricky Bradford**

*Project Engineer*

**AEI Consultants**

(925) 944-2899 ext.148

(925) 944-2895 fax

(510) 375-2314 cell

rbradford@aeiconsultants.com

**Ricky Bradford**

---

**From:** Yoo, James [jamesy@acpwa.org]  
**Sent:** Thursday, June 12, 2008 3:02 PM  
**To:** Ricky Bradford  
**Cc:** Wickham, Jerry, Env. Health  
**Subject:** RE: Followup Regarding Extraction Wells Beneath New Building for 245 8th Street, Oakland Remediation Project

Ricky:

Your proposal seems fine. I don't see any problems with doing this.

Thanks.

JAMES YOO  
ENVIRONMENTAL COMPLIANCE SPECIALIST  
ALAMEDA COUNTY PUBLIC WORKS AGENCY  
WATER RESOURCES SECTION  
399 Elmhurst Street  
Hayward, CA 94544  
Ph: 510-670-6633  
Fax: 510-782-1939

website: [www.acgov.org/pwa/wells](http://www.acgov.org/pwa/wells)

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**From:** Ricky Bradford [mailto:rbradford@aeiconsultants.com]  
**Sent:** Thursday, June 12, 2008 12:22 PM  
**To:** Yoo, James  
**Cc:** Wickham, Jerry, Env. Health  
**Subject:** Followup Regarding Extraction Wells Beneath New Building for 245 8th Street, Oakland Remediation Project

Hi James, I just wanted to email you a site map and piping plan regarding the message I left you this morning about leaving three (3) monitoring/extraction wells (i.e., MW-10, MW-11, and MW-12) in place beneath a proposed building at 708 Alice Street. The wells were installed for the monitoring and remediation of a fuel release from the 245 8<sup>th</sup> Street property. The 708 Alice Street property has been vacant for many years now, but building plans have been approved and the owner is going to build on the property. We have discussed this situation with our case manager Mr. Jerry Wickham at Alameda County Environmental Health (ACEH).

Basically, we have a large groundwater plume (>150-feet) extending from onsite to somewhere beyond 7<sup>th</sup> Street and a potential vapor intrusion concern at nearby residences. We've been actively remediating using onsite wells since June of last year and offsite wells at 708 Alice Street since November of last year. Rather than abandoning the wells, which would make the cleanup much more difficult and costly, we would like to leave MW-10, MW-11, and MW-12 in place beneath the proposed building as described in the attached drawings. We have designed the wells and piping network in such a way that we'll still have the ability to effectively seal the wells with a cement slurry using the 1" extraction hose, called a "drop tube" or "stinger", as a tremi-pipe. Please refer to the attached piping plan for more details.

9/3/2008

Thanks for you time and consideration in this matter. I look forward to hearing from you and discussing the specifics. Should you have any questions or comments, or need any additional information, you may reach me at the office or on my cell phone.

Sincerely,

**Ricky Bradford**

*Project Engineer*

**AEI Consultants**

(925) 944-2899 ext.148

(925) 944-2895 fax

(510) 375-2314 cell

rbradford@aeiconsultants.com

**Ricky Bradford**

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**From:** Wickham, Jerry, Env. Health [jerry.wickham@acgov.org]  
**Sent:** Wednesday, June 04, 2008 2:54 PM  
**To:** Ricky Bradford  
**Subject:** RE: Recent Developments @ 245 8th Street Oakland

Ricky,

I can meet at the following times:

Friday, June 6, 11:00 am  
Tuesday, June 10, 10:00 am  
Tuesday, June 10, 2:00 pm  
Wednesday, June 11, 10:30 am

Regards,

**Jerry Wickham**

Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502  
510-567-6791  
jerry.wickham@acgov.org

---

**From:** Ricky Bradford [mailto:rbradford@aeiconsultants.com]  
**Sent:** Friday, May 23, 2008 2:47 PM  
**To:** Wickham, Jerry, Env. Health  
**Cc:** 'Peter McIntyre'  
**Subject:** Recent Developments @ 245 8th Street Oakland

Dear Mr. Wickham:

As you know, AEI Consultants (AEI) has been operating a high vacuum dual phase extraction (HVDPE) soil and groundwater remediation system using 5 onsite monitoring/extraction wells (MW-1, 2, 5, 6, and 7) and three offsite monitoring/extraction wells (MW-10, 11, and 12) located on a currently vacant, but soon to be developed property, at 708 Alice Street. We have also recently installed two monitoring wells (MW-9 and MW-13) along 7<sup>th</sup> Street and one monitoring well (MW-8) along Alice Street to complete the lateral groundwater plume delineation. Installation of these new wells will be discussed in the second quarter site monitoring report. A site plan has been attached for your reference.

More importantly, the owner of the property at 708 Alice (Mr. Mike Low) has been planning and working towards building a small condominium on this property for many years now. Last year he finally received approval from the City of Oakland Planning Department. Then last week, Mr. Low notified us that he received approval from the Building Department and a permit for construction will be issued in about 2 weeks. He has requested that we remove the 3 monitoring/extraction wells (MW-10, 11, and 12) and 2 soil gas probes (GP-3 and GP-4) from his property as soon as possible.

We understand that you will be on vacation for the next week or so, but we wanted to setup meeting as soon as possible to discuss this situation. When you return, please let us know what dates and times would work out best for you.

9/3/2008



Sincerely,

**Richard J. Bradford**

*Project Engineer*

**AEI Consultants**

(925) 944-2899 ext.148

(925) 944-2895 fax

(510) 375-2314 cell

rbradford@aeiconsultants.com

**Ricky Bradford**

---

**From:** Wickham, Jerry, Env. Health [jerry.wickham@acgov.org]  
**Sent:** Tuesday, November 13, 2007 9:15 AM  
**To:** Ricky Bradford  
**Cc:** Peter McIntyre  
**Subject:** RE: 245 8th Street, Oakland

Ricky,

As we discussed by telephone on November 13, 2007, I have no objection to expanding the DPE system to use wells MW-10, MW-11, and MW-12 and investigating the potential for keeping the wells and soil gas probes at 708 Alice Street for future use during and after development.

Regards,

*Jerry Wickham*

Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577  
510-567-6791 phone  
510-337-9335 fax  
[jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org)

---

**From:** Ricky Bradford [mailto:rbradford@aeiconsultants.com]  
**Sent:** Wednesday, November 07, 2007 3:57 PM  
**To:** Wickham, Jerry, Env. Health  
**Cc:** 'Peter McIntyre'  
**Subject:** 245 8th Street, Oakland

Jerry:

Good afternoon. I wanted to notify you of several important developments at the site located at 245 8<sup>th</sup> Street, Oakland (RO0000202 – Vic's Auto).

As you may know, the City of Oakland requires very specific insurance coverage and primary wording for monitoring wells located in the City's right of way. In the past, our client's Insurer Broker and the City of Oakland have not been able to come to terms on the specific endorsement wording for the Insurance Certificate needed to install monitoring wells (MW-8 and MW-9) in the right of way along 7<sup>th</sup> Street and Alice Street. These wells are needed to complete the lateral plume delineation and to monitor remediation progress. Recently, our client has changed insurance companies and we were able to get the endorsement wording the City requires on the Insurance Certificate. Therefore, we should be able to get the necessary permits and install the subject monitoring wells in the next couple of months. However, we would like to get your input and consensus on the final well locations before installation. We can discuss this further in the next coming weeks. In the meantime, I will email and/or fax you a site plan with the proposed well locations.

Second and most important, we have 3 monitoring wells (MW-10, MW-11, and MW-12) and 2 soil gas probes (GP-3 and GP-4) on an adjacent and currently vacant parcel of land at 708 Alice Street. The property owner allowed us access to the property to install these wells and soil gas probes on the condition that we remove them when he was ready to develop. We have been routinely monitoring and testing these wells for several years now. However, the property owner notified us last month that he will be developing the property with a 3-story duplex. The final plans are currently in the City's Planning Department, but the owner is planning to break ground as soon as next January or February 2008. As a consequence, the monitoring wells will likely have to be destroyed, which will also involve your input and approval. In the meantime, we want to make the most of these wells over the next few months by using them as dual phase extraction (DPE) wells. We have a way to route

9/3/2008

temporary suction hoses from the existing DPE system to these wells. Also, the DPE system has sufficient capacity for this expansion. We are also working with the developer's architect to save any wells if possible, but I'm not sure how this will pan out.

Please contact me at your earliest convenience (510) 375-2314 so that we may discuss these developments in more detail.

Sincerely,

**Ricky Bradford**

Senior Staff Engineer

AEI Consultants

2500 Camino Diablo, Suite 200

Walnut Creek, CA 94597

P: (925) 944-2899 ext.148

F: (925) 944-2895

[rbradford@aeiconsultants.com](mailto:rbradford@aeiconsultants.com)

**APPENDIX E**

**PICTURES OF THE HVDPE PIPING LATERAL  
INSTALLATION @ 708 ALICE STREET**













