RO 479

aqua science engineers inc.

January 10, 2005

Alameda County

NOV 03 2005

Environmental Health

Mr. Amir Gholami
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: INTERIM REMEDIATION EFFECTIVENESS REPORT AND CORRECTIVE ACTION PLAN

SITE: Fuel Leak Case RO0000479
Lim Property
250 8th Street
Oakland, CA 94607

Dear Mr. Gholami:

Attached is Aqua Science Engineers, Inc.'s (ASE) report detailing the effectiveness of the Interim Remediation event completed at the subject site. A 15-day dual-phase extraction system removed over 94,000 gallons of petroleum-hydrocarbon laden groundwater and 2.3 million cubic feet of petroleum-hydrocarbon laden vapors. In all, approximately 1,150 gallons of petroleum hydrocarbons as gasoline were removed from the subsurface.

This report also acts as a Corrective Action Plan for future remedial strategies recommended for the site. A formal approval, in writing, is requested from your agency for the next pahse of the proposed work. As our client is anxious to bring this site to the point of "No Further Action," your immediate response will be greatly appreciated.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

David Allen
Senior Project Manager

208 W. El Pintado, Danville, California 94526 • 925-820-9391 • Fax 925-837-4853

aqua science engineers inc.

January 10, 2005

REPORT OF INTERIM REMEDIATION EFFECTIVENESS AND CORRECTIVE ACTIVE ACTION PLAN LIM PROPERTY 250 8TH STREET OAKLAND, CALIFORNIA (ASE JOB NO. 2808)

for

Mr. Russell Lim
3111 Diablo Road
Lafayette, CA 94549

Submitted by:

Aqua Science Engineers
208 West El Pintado Road
Danville, CA 94526
(925) 820-9391

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This report presents the results of the Interim Remediation Event using Dual-Phase Extraction (DPE) at the Lim Property, 250 8th Street in Oakland, California, Figures 1 and 2. This report will also act as a corrective action plan (CAP) for the next phase of work at the site.

The work detailed in this report was performed by ASE on behalf of our client and representative of the property ownership, Mr. Russell Lim. This work was performed at the request and approval of the Alameda County Health Care Services Agency (ACHCSA) in response to their letter dated March 4, 2004. The scope of work for this project was originally proposed in ASE's corrective action plan (CAP) dated August 26, 2002. An addendum was prepared and submitted September 30, 2004.

2.0 EXECUTIVE SUMMARY

The scope of work for this phase of the project was to perform both a DPE pilot test and a 14-day DPE interim remediation event at the site. Together, the two tasks utilized a high vacuum DPE (HVDPE) system that was plumbed to several monitoring and injection wells that contained free-floating hydrocarbons and/or extremely high concentrations of petroleum hydrocarbons. The purpose of the DPE pilot test was to determine, within a 24-hour period, the optimum operating parameters for the system as it relates to the subsurface conditions at the site. Once the DPE pilot test was completed, the optimized operating parameters were dialed into the DPE system for the extended DPE interim remediation event. The intent of the DPE interim remediation event was to remove contaminated vapors and groundwater at high vacuum from extraction wells to remediate trapped hydrocarbons in the soil and groundwater that have been evident at the site for years.

At the completion of the DPE interim remediation event, a total of 94,470 gallons of free-product and groundwater were removed from three extraction wells. The average total petroleum hydrocarbon as gasoline (TPH-G) concentration in the extracted groundwater was 13,900 parts per billion (ppb); the average benzene concentration

of that extracted groundwater was 780 ppb. The extracted groundwater was treated on-site with activated carbon vessels, and then discharged, under permit, to the East Bay Municipal Utilities District (EBMUD) sanitary sewer system on-site.

A total of 2.3 million cubic feet of hydrocarbon-laden vapors were extracted from three extraction wells during the 15 day event. Based on field measurements and laboratory analytical data, over 7,000 pounds of petroleum hydrocarbons were extracted from three extraction wells during the 15-day event. This equates to approximately 1,150 gallons of petroleum hydrocarbons. The extracted vapors were treated on-site by CalClean's thermal oxidizer.

3.0 SCOPE OF WORK

The scope of work for this phase of the project was to perform both a DPE pilot test and a 14-day DPE interim remediation event at the site. Together, the two tasks utilized a high vacuum DPE (HVDPE) system that was plumbed to several monitoring and injection wells that contained free-floating hydrocarbons and/or extremely high concentrations of petroleum hydrocarbons.

ASE's basic scope of work was as follows:

- Secure permits from the City of Oakland for closure of parking spaces. Secure a Special Discharge Permit from EBMUD to discharge the treated groundwater to the on-site sanitary sewer.

- Mobilize to the site with CalClean personnel to perform the HVDPE event.

- Measure the depth to water, and depth to free-product if present, in all five injection wells and all seven monitoring wells. Collect grab groundwater samples from all injection wells prior to initiation of the test.

- Connect the HVDPE equipment to monitoring well MW-3, and injection wells IW-4 and IW-5 located within the parking strip of 8th Street, Figure 3.

- Extract free-product, groundwater and vapors from the extraction wells.

- Destroy the free-product and petroleum-hydrocarbon laden vapors with the truck-mounted thermal oxidizer, Figure 4.

- Treat the hydrocarbon-laden groundwater with the activated carbon water treatment system, Figure 4.

- Discharge the treated groundwater to the EBMUD sanitary sewer.

- Collect groundwater and vapor samples from the influent stream at the start, end and at key points during the HVDPE event.

- Analyze water and vapor samples at a State of California Department of Health Services (CA DHS) certified analytical laboratory for TPH-G, benzene toluene, ethylbenzene and xylenes (collectively known as BTEX) and methyl tert-butyl ether (MTBE) by EPA Method 8015M/8021. Analyze the water samples also for total petroleum hydrocarbons as diesel (TPH-D) by EPA Method 8015M.

- Collect data to determine a radius of influence of the HVDPE system on several outlying wells at the start, end and at key points during the HVDPE event.

- Prepare a report detailing the performance of the DPE event and make recommendations for future remedial activities at the site.

To implement both the DPE pilot test and the DPE interim remediation event, ASE completed the following tasks:

4.0 CONDUCT A PILOT STEP-TEST AT THE SITE

For the first 24-hours of DPE, CalClean performs a step test where the vacuum, flow rates, and stinger depths are adjusted to determine optimum operating parameters for the interim remediation event that lasted 14 additional days. The following section describes the tasks completed to set-up the project and perform the step test.

4.1 Permitting

ASE secured permits from the City of Oakland for the closure of parking spaces. ASE also secured a Special Discharge Permit from EBMUD to discharge the treated groundwater to the on-site sanitary sewer. CalClean obtained a statewide permit from the Bay Area Air Quality Management District (BAAQMD) for operation of the thermal oxidizer used to treat extracted soil vapor during the DPE pilot test and the DPE interim remediation event. See Appendix A for copies of the permits obtained by ASE.

4.2 Equipment Mobilization

On October 25, 2004, CalClean personnel arrived at the site and set-up their HVDPE system and groundwater treatment system. A 5,000 gallon poly tank was delivered to the site by Baker Tanks. This poly tank was used to store treated extracted groundwater prior to batch discharge into the EBMUD sanitary sewer on-site.

4.3 Depth to Water and Sample Collection

ASE had conducted a quarterly monitoring event at the site in June 2004. However, no samples were collected from the five injection wells. Therefore, after measuring depth to water in all site wells (see Table One), ASE collected a grab groundwater sample from injection wells IW-1 through IW-4. Injection well IW-5 had 1.33-feet of floating hydrocarbons. The four water samples were collected by lowering a new disposable bailer into the wells without any prior purging. The groundwater samples were decanted from the bailers into three 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and two 1-liter amber glass bottles. All samples were labeled, placed in protective foam sleeves, and stored in coolers with wet ice for transport to STL of Pleasanton, California (ELAP #1094) under appropriate chain of custody documentation. The samples were analyzed by STL for TPH-G by EPA Method 8015M, BTEX and MTBE by EPA Method 8021, and TPH-D by EPA Method 8015M. Analytical results of this sampling and the June 2004 sampling are tabulated in Table Two. The certified analytical report is attached in Appendix B.

4.4 Set-up and Connection of DPE Equipment

For the DPE pilot test, ASE and its subcontractor CalClean used a truck-mounted high vacuum mobile treatment system capable of extracting soil vapor and groundwater from the subsurface. The mobile treatment system was coupled to a thermal oxidizer used to treat extracted soil vapor in accordance with conditions established by the BAAQMD.

ASE conducted the DPE pilot test according to the following procedures outlined in sections below. These procedures included pre-test activities, step test procedures, soil vapor mass removal pilot test, groundwater mass removal, and extended period mass removal procedures for the deeper smear zone. Copies of field data sheets and data tables used during the pilot tests are included in CalClean's Report attached in Appendix C.

4.5 Pre-Test Activities

Prior to initiating the DPE pilot test, CalClean personnel performed the following:

- Measure the distance from the extraction wells to the selected observation wells and record the measurements.
- Gauge the depth to water in the extraction and observation wells.
- Install well seals in each observation well to prevent atmospheric short-circuiting during the test. For this portion of the test, monitoring well MW-3 and former injection well IW-5 were chosen for extraction. The remaining monitoring wells and former injection wells were used for observation.
- Perform a visual observation of the pavement surface in the vicinity of the extraction and observation wells and identify any significant cracks or unsealed penetrations and record observations. Visually check the well head conditions and well seals for any apparent lack of integrity and record observations. In addition, the technician recorded pertinent local weather data

that could account for possible changes in soil gas pressure in the vadose zone.

4.6 Step-Test Procedures

An interval step test was performed to determine the optimum range of applied vacuum to maximize the removal of soil vapor, and to develop a significant cone of depression in the groundwater during the DPE pilot test. The step test intervals for the DPE pilot test were: 1 hour, 2 hours, and 3 hours from the start time for both the shallow zone soils and those below the current water table elevation. Prior to startup of step tests the following tasks were completed:

- Determine the sequence of monitoring for observation wells in the well field.

- Measure the depth to groundwater (feet below top of casing) in all wells and record data.

- The DPE drop tube was measured and marked with permanent ink at 5, 10, and 15 feet intervals. Note the starting depth of the drop tube in each of the extraction wells, record data.

- Prior to startup, the well seals were placed on the observation wells, and the observation wellhead vacuum (in inches of H_2O) was measured and repeated every 30 minutes during the step test. Record the data.

- Turn on the vacuum pump at low vacuum (e.g., 1 to 5 inches Hg) and observe and record the airflow rates (scfm) at the extraction wellheads, well casing seal, and DPE manifold using a hot wire anemometer or other flow instruments. Record time on Field Data Sheets.

- Measure influent vapor concentration (parts per million by volume [ppmv]) using a photo ionization detector (PID) or equivalent meter every 15 minutes during the step test and record the time on the Field Data Sheets.

- Measure groundwater extraction rates by measuring the rise of groundwater in the sight glass on the knockout tank DPE unit.

CalClean repeated the procedure above for mid-range vacuum (e.g., 5 to 7 inches Hg) and again at maximum vacuum (e.g., 10 inches Hg or higher) for the time intervals noted above. During the DPE step test, the drop tube was raised to the starting depth (which was 3-feet below the starting water level) at the beginning of each step. The step test was stopped once the DPE unit reached the end of the final step at maximum vacuum. This step test was performed for a 4-hour period.

4.7 Soil Vapor Mass Removal Pilot Test Procedures

After concluding the step test detailed above, CalClean determined the optimum range of vacuum to be applied during the extended period extraction test. The following procedures were performed during the soil-only vapor mass removal pilot test:

- Turn on vacuum pump at optimum vacuum, 22 inches of Hg, based on information determined during the step test. Observe and record vapor flow rates (scfm) using a hot wire anemometer or other flow meter at the extraction wellhead and manifold. Repeat flow measurements every 30 minutes for the first 2 hours, then every hour thereafter. Record data on Field Data Sheets.

- Measure influent concentrations (ppmv) using a PID every 60 minutes and record data on Field Data Sheets.

- Collect a midpoint and concluding influent vapor sample from the extraction well using the PID.

- After operation of the soil-only vapor extraction test for a period of approximately 6 hours for the pilot test, the groundwater extraction system was turned back on for the remainder of the day so that both vapors and groundwater could be extracted simultaneously. The DPE system was adjusted for optimal vapor and groundwater extraction rates.

4.8 Treated Water Sampling and Analyses

During the DPE step tests, a grab groundwater sample was collected by ASE personnel from the treated groundwater poly tank to verify the water had been remediated to below EBMUD standards for discharge to their sanitary sewer. This was part of the requirements set forth within the EBMUD discharge permit. CalClean's groundwater treatment system consists of a pump that pulls the water from the DPE system and pushes it through four 250-pound activated carbon vessels plumbed in series, see the EBMUD permit application in Appendix A for details of the groundwater treatment system. Water sample EFF-EBMUD-10.25.04 was collected on October 25, 2004 and was analyzed by McCampbell Analytical of Pacheco, California (CA DHS certification #1644) for TPH-G and TPH-D by EPA Method 8015, and BTEX and MTBE by EPA Method 8021 on a 24-hour turnaround basis. Results, obtained on October 26, 2004, showed that the BTEX concentrations were just slightly higher than allowed for discharge to the EBMUD sanitary sewer. Therefore, on October 26, 2004, the estimated 1,000 gallons of water that had already been treated once through the treatment system was treated once again. However, the second treatment event was performed at a very slow rate, less than 6 gallons per minute, and a fifth carbon canister was placed in series. While the water was being treated, ASE collected another post treatment water sample, labeled EFF-EBMUD-10.26.04. It was once again analyzed by McCampbell Analytical for TPH-G by EPA Method 8015, and BTEX and MTBE by EPA Method 8021 on a 24-hour turnaround basis. Results, obtained on October 27, 2004, showed non-detectable concentrations for all constituents tested. ASE prepared a letter report to EBMUD detailing the afore-mentioned tasks. EBMUD subsequently issued the permit to allow discharge to their system. Extracted groundwater was batch treated during the day and night, and the actual discharge to the sanitary sewer occurred in the evenings.

4.9 Step-Test Conclusions

During the step test, the following operating parameters were achieved:

- The influent vapor concentration averaged approximately 38,000 parts per million vapor (ppmv) based on the Horiba field PID.

- Groudwater was extracted at approximately 3.6 gallons per minute from extraction wells MW-3 and IW-5.

- The average vacuum was 22 inches of Hg, and the flow rate was 77 standard cubic feet per minute (scfm).

- After several hours of groundwater extraction, the groundwater elevation in all of the observation wells had dropped. The greatest elevation drop was realized in IW-4, at 0.76-feet after 24 hours.

- Although vacuum influence was realized in only one of the observation wells, IW-4, the step-test proved that groundwater influence could be acheived all the way across 8th Street; observation well MW-5 is 103-feet away from the closest extraction well during the step-test, IW-5.

The DPE system was obviously sized correctly for the interim remediation event that was to begin subsequently. The following sections describe the remaining 14 days of DPE at the site.

5.0 EXTENDED PERIOD DPE INTERIM REMEDIATION EVENT

After the step tests were completed by CalClean, the system was set to operate at optimum parameters for the remainder of the DPE, a total of 14 additional days. These 14 days were considered the interim remediation event. It was during these 14 days that over 1,150 gallons of petroleum hydrocarbons were extracted from the subsurface of the site. During the 14-day event, the following tasks were completed.

- Drop tubes were installed initially in monitoring wells MW-3 and injection well IW-5, the two wells with measurable floating product. On the November 2, 2004, injection well IW-4 was changed from an observation well to an extraction well.

- The liquid-ring vacuum pump was continually adjusted to allow for optimum vacuum while still remaining within allowable operating temperature for the thermal oxidizer. Vapor flow rates (scfm) were observed and recorded in a scheduled basis using a hot wire anemometer or other flow meter at the extraction wellheads and manifold.

- The influent vapor concentration in ppmv was measured using a PID every 4 hours.

- The operating parameters of the DPE interim remediation event were constantly adjusted and occurred continuously until the event was completed. Drop tubes were re-positioned, vacuum was increased or decreased as PID concentrations warranted. Field personnel worked in 12-hour shifts so that the equipment was manned at all times.

- Influent vapor samples were collected in Tedlar bags during and at the conclusion of the DPE interim remediation event. Tedlar bags of individual wells were collected as well as a total influent vapor sample when more than one well was being extracted at a time.

- Continuously treat extracted hydrocarbon vapors with the truck-mounted thermal oxidizer unit.

- Continuously treat extracted groundwater with the truck-mounted activated carbon units. Sample groundwater in batches to determine its suitability for discharge down the EBMUD sanitary sewer.

- Once per day, measure vacuum influence and depth to water in all of the observation wells that are not being extracted from, and record data in the field log.

Specifics of the tasks listed above are below:

5.1 Groundwater Elevations

The depth to water was measured in all wells, except for monitoring well MW-3 and injection wells IW-4 and IW-5 (the extraction wells), at least once daily as the DPE progressed. As shown on Table One, the groundwater elevation in the observation wells dropped an average of 1.87-feet, with monitoring well IW-3 showing the greatest elevation drop of 2.68-feet. The system extracted an average of 4.37 gallons per minute, for a total of 94,470 gallons of groundwater, from the three extraction wells. Figures 5 through 8 are potentiometric surface maps showing groundwater elevations in all of the observation wells every 5 days during the DPE event.

5.2 Vacuum Influence

A hand held vacuum indicator was used on all of the observation wells, at least once daily, as the DPE progressed. When monitoring well MW-3 and injection well IW-5 were used for extraction, only observation wells IW-4 and IW-3 showed vacuum influence. After injection well IW-4 was connected to the extraction system, only IW-3 showed vacuum influence. No other observation wells showed a measurable amount of vacuum influence during the entire DPE. Vacuum influence values were logged in the CalClean Field Log.

5.3 Influent Vapor Sampling Intervals, Analyses and Concentrations

The CalClean DPE system was contiuously connected to a Horiba brand PID that constantly recorded the influent vapor concentrations from the extraction wells. During the DPE event, samples of the influent vapors were collected for analyses by STL. Air bag samples were collected in Tedlar bags by ASE personnel on October 25, 28, November 2, and 9, 2004. Calculations of hydrocarbons recovered were performed using both the Horiba data and the STL analytical data. The gallons of gasoline recovered spoken of within this report is an average of the Horiba data and the STL analytical data. Samples were collected as follows:

- The October 25, 2004 vapor samples were collected from the individual extraction wells in use on that day. The sample from

monitoring well MW-3 was labeled VINF-MW3-10.25.04. The valve from MW-3 was then closed, and vapors only from IW-5 were allowed to flow through the system. After 30 minutes, sample VINF-IW-5-10.25.04 was collected. After the sampling was completed, both well valves were re-opened.

- The October 28, 2004 vapor samples were collected from the individual extraction wells in use on that day, and from the combination of all the extraction wells in use on that day. First, vapor sample VINF-MW-3/IW-5-10.28.04 was collected while vapors from both MW-3 and IW-5 were flowing into the DPE system. Then, for 30 minutes each, the vapors from each individual well only were allowed to flow into the system, and individual vapor samples were collected. After the sampling was completed, both well valves were re-opened.

- The November 2, 2004 vapor samples were collected from the individual extraction wells in use on that day, and from the combination of all the extraction wells in use on that day. First, vapor sample VINF-MW-3/IW-4/IW-5-11.02.04 was collected while vapors from MW-3, IW-4, and IW-5 were flowing into the DPE system. Then, for 30 minutes each, the vapors from each individual well only were allowed to flow into the system, and individual vapor samples were collected. After the sampling was completed, all three well valves were re-opened.

- The November 9, 2004 vapor samples were collected from the individual extraction wells in use on that day, and from the combination of all the extraction wells in use on that day. First, vapor sample VINF-MW-3/IW-4/IW-5-11.09.04 was collected while vapors from MW-3, IW-4, and IW-5 were flowing into the DPE system. Then, for 30 minutes each, the vapors from each individual well only were allowed to flow into the system, and individual vapor samples were collected. After the sampling was completed, all three well valves were re-opened.

The Tedlar bags were filled by CalClean personnel using an electric vacuum pump and new tubing each time. Each sample was then individually labeled with the sample name, sample time, job name and number and sampler's initials. The samples were then

immediately sent to STL under chain of custody procedures. The afore-mentioned vapor samples were analyzed by STL for TPH-G, BTEX and MTBE by EPA Method 8260B. The analytical results are tabulated in Table Three; the certified analytical report is attached in Appendix D.

As Table Three shows, in general, the results of the influent vapor sampling show fairly constant concentrations of petroleum hydrocarbons throughout the 15 days of the DPE event.

5.4 Influent Water Sampling Intervals, Analyses and Concentrations

Influent water samples were collected twice during the DPE event. The CalClean system separates the vapors and the water into two different streams. The vapors are treated by the thermal oxidizer, and the extracted water is piped to a small holding tank prior to treatment by activated carbon. Water samples were collected by ASE personnel from a sample port on the small holding tank on October 28 and November 5, 2004. Samples were collected as follows:

- The October 28, 2004 water sample was a composite of water from all wells extracted from at that point in time. Since only MW-3 and IW-5 were flowing through the system, the water sample was labeled WINF-MW-3/IW-5-10.28.04

- The November 5, 2004 water sample was a composite of water from all wells extracted from at that point in time. Water from MW-3, IW-4 and IW-5 were flowing through the system; therefore, the water sample was labeled WINF-MW-3/IW-4/IW-5-11.05.04.

The afore-mentioned water samples were collected by filling new sample containers directly from the inlet stream of the contaminated water holding tank. The groundwater samples were contained in three 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and two 1-liter amber glass bottles. All samples were labeled, placed in protective foam sleeves, and stored in coolers with wet ice for transport to STL under appropriate chain of custody documentation. The samples were

analyzed by STL for TPH-G by EPA Method 8015M, BTEX and MTBE by EPA Method 8021, and TPH-D by EPA Method 8015M. Analytical results of this sampling are tabulated in Table Four. The certified analytical report is attached in Appendix E.

As Table Four shows, in general, the results of the influent water sampling show fairly constant concentrations of petroleum hydrocarbons throughout the 15 days of the DPE event.

5.5 Hydrocarbon Recovery in Vapor-Phase Calculations

A total of 2.3 million cubic feet of hydrocarbon-laden vapors were extracted from three extraction wells during the 15 day event. Based on an average of field measurements and laboratory analytical data, over 7,000 pounds of petroleum hydrocarbons were extracted from three extraction wells during the 15 day event. This equates to approximately 7,200 pounds of petroleum hydrocarbons, which equals 1,150 gallons of petroleum hydrocarbons. The extracted vapors were treated on-site by CalClean's thermal oxidizer.

5.6 Groundwater Recovery Calculations

At the completion of the DPE interim remediation event, a total of 94,470 gallons of free-product and groundwater were removed from three extraction wells. The average TPH-G concentration of that extracted groundwater was 13,900 ppb, and the average benzene concentration of that extracted groundwater was 780 ppb. The extracted groundwater was treated on-site with activated carbon vessels, and then discharged, under permit, to the EBMUD sanitary sewer system on-site.

6.0 POST DPE EVENT GROUNDWATER SAMPLING

On November 10, 2004, ASE personnel mobilized to the site to collect grab groundwater samples from monitoring wells MW-1 through MW-7 and injection wells IW-1 through IW-5. Since the DPE event had concluded one day earlier, purging of the wells was not performed. The surface of the groundwater was checked for the presence of free-floating hydrocarbons or sheen. Monitoring well

MW-3 contained 0.31-feet of free-floating hydrocarbons and thus was not sampled.

Samples were collected from each well using disposable polyethylene bailers. The groundwater samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid and sealed without headspace, and 1-liter amber glass bottles. All samples were then labeled and stored on ice for transport to STL under appropriate chain of custody documentation. The groundwater samples were analyzed by STL for TPH-G and TPH-D by EPA Method 8015, and BTEX and MTBE by EPA Method 8021. The analytical results for this sampling event are tabulated in Table Two under the category of "Post-Test," and copies of the certified analytical report and chain of custody form are included in Appendix B.

When comparing the "Pre-Test" groundwater analytical results to the "Post-Test" analytical results, the total hydrocarbon concentrations and/or thickness of free-product were lower in all of the wells adjacent to the extraction wells, and the extraction wells themselves. The total hydrocarbon concentrations in the wells further away from the extraction wells and across 8th Street all rose slightly, indicating (a) that the size of the plume is greater than what is currently monitored, and (b) the remediation project appears to have released hydrocarbons previously sorbed in soil and released to groundwater.

7.0 PROPOSED CORRECTIVE ACTION ACTIVITIES

The remainder of this report details the proposed future remedial activities necessary to prepare the site for eventual case closure.

7.1 Performance of a Second CalClean DPE Event

Due to the overwhelming ability of the CalClean DPE system to extract and remediate a significant volume of petroleum-hydrocarbon laden vapors and groundwater, ASE proposes a second 15-day interim remediation event at the site for some time in the second quarter of the year. It is ASE's intent with this second DPE event to reduce the hydrocarbon concentrations and free-product

levels to a point that a smaller dual phase system could be installed and operated on a continual basis. The current concentrations of petroleum hydrocarbons in groundwater are too high to install a cost-effective, stand-alone dual-phase extraction system. It is far more economical at this point in time to bring CalClean back for a second event. A successful second CalClean event will likely reduce concentrations to a point that a smaller, less expensive system could be installed to handle the remaining subsurface pollution.

7.2 Long-Term Groundwater Extraction & Treatment

A potential future remedial system would include a groundwater extraction system that could utilize several of the former injection wells located in the parking strip of 8th Street adjacent to the site, and two additional recovery wells that would be installed near the former USTs on site, Figure 9. By pumping each of the wells at a rate of approximately 2 gallons per minute, the smear zone would then be exposed allowing for vapor extraction of the hydrocarbon-laden soil. The extracted groundwater could then be treated with an activated carbon system and then discharged to the EBMUD sanitary sewer on site.

7.3 Long-Term Vapor Extraction & Treatment

In order to vapor extract the hydrocarbons from the exposed smear zone, ASE recommends the installation of five vapor extraction wells to be positioned near the groundwater extraction wells detailed in Section 7.2 above, Figure 9. The wells would be plumbed separately into a vapor-extraction manifold which would then be plumbed to a catalytic oxidizer. A properly sized moisture knockout pod, vacuum blower and catalytic oxidizer should be sufficient at destroying hydrocarbon-laden vapors from the subsurface.

8.0 REQUEST FOR AGENCY DIRECTIVE

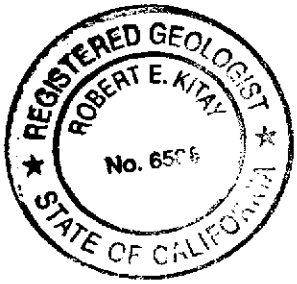
On behalf of our client, ASE respectfully requests that the Alameda County Health Care Services Agency review this report and respond in writing to the proposed Corrective Action Plan at the end of this report, Section 7.0. Assuming the Agency agrees with the proposed remedial action, ASE will prepare a formal Remedial Action Plan

detailing, in specifics, the second CalClean DPE event and the design of the proposed long-term dual-phase extraction system.

ASE would like to thank you in advance for your assistance and prompt attention to this matter. Please feel free to call us if you have any questions or comments.
Respectfully submitted,

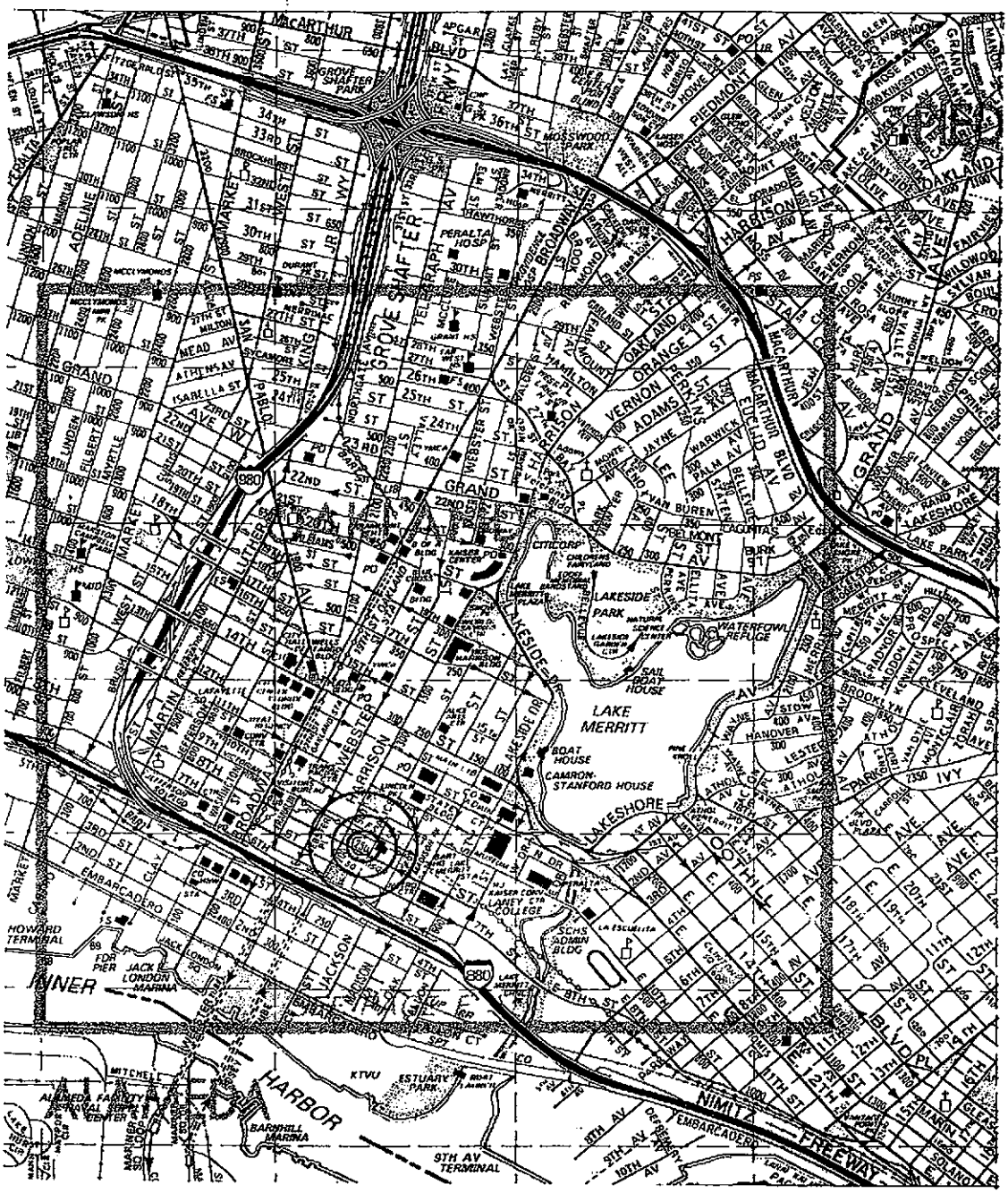
Aqua Science Engineers, Inc.

David Allen, R.E.A.
Senior Project Manager



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

cc: Mr. Russell Lim, 3111 Diablo Road, Lafayette, CA 94549
Mr. Amir Gholami, ACHCSA, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

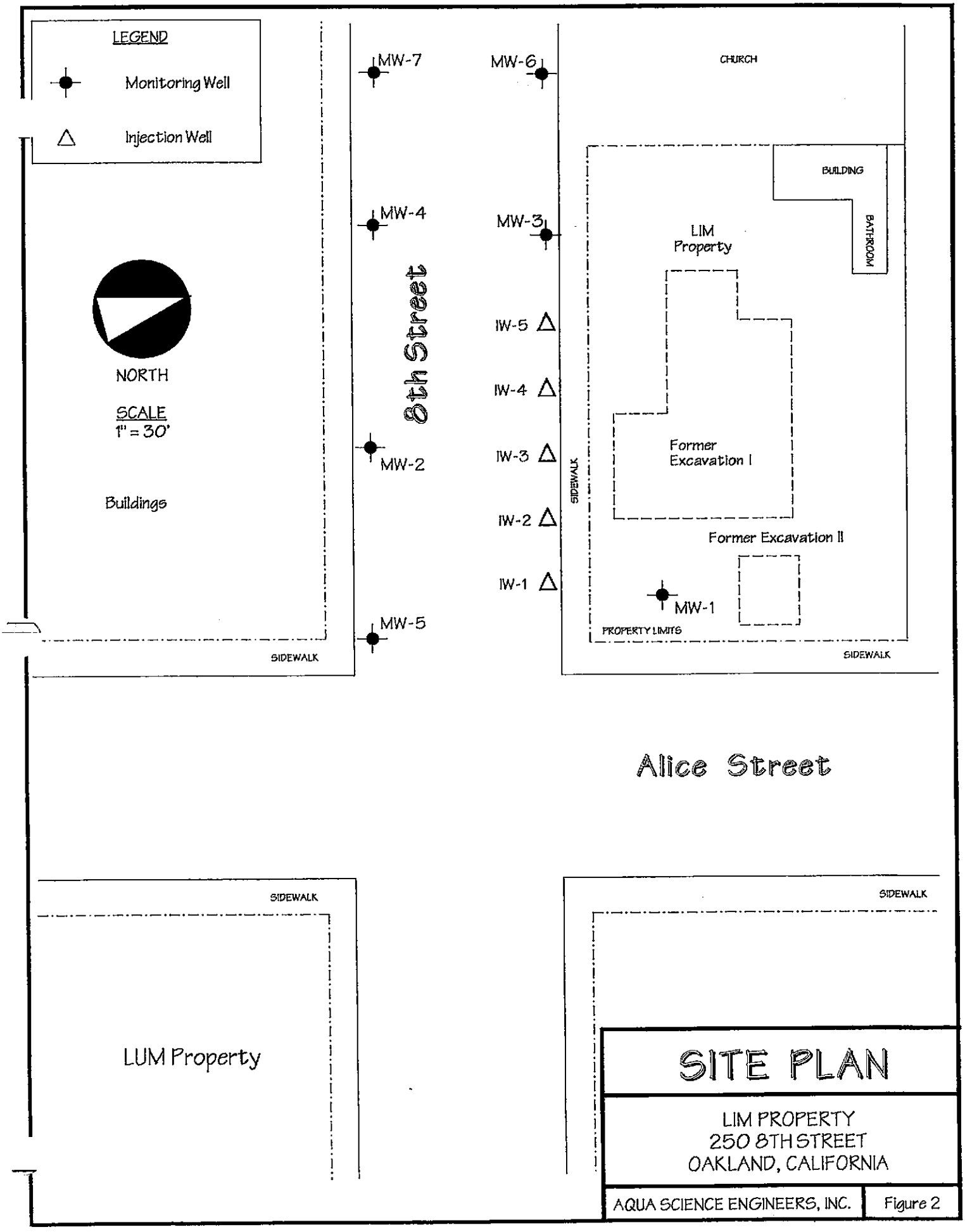


SITE LOCATION MAP

Lim Property
250 8th Street
Oakland, California

Aqua Science Engineers | Figure 1

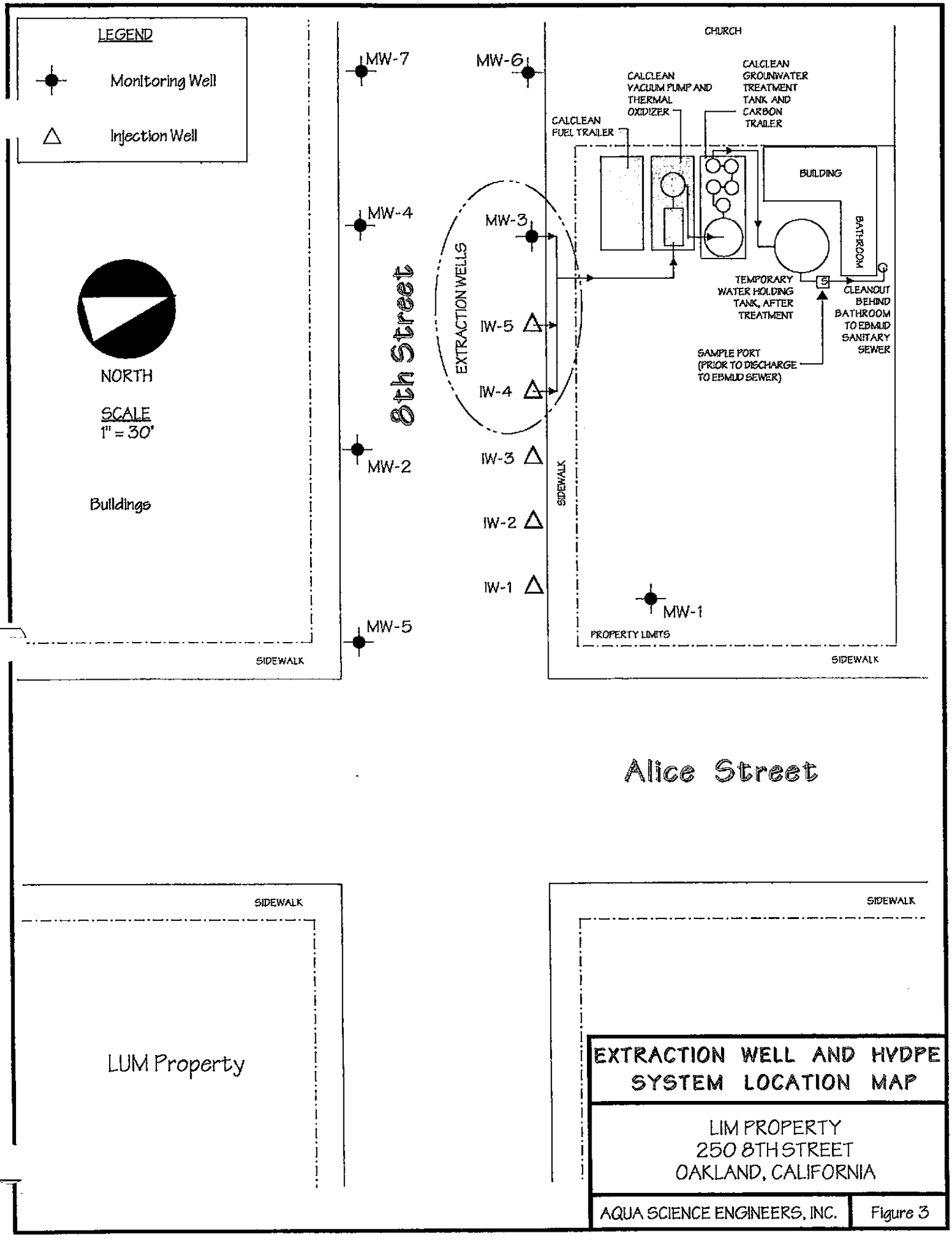
BASE: The Thomas Guide, Alameda and Contra Costa Counties Street Guide & Directory, 1990



SITE PLAN

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

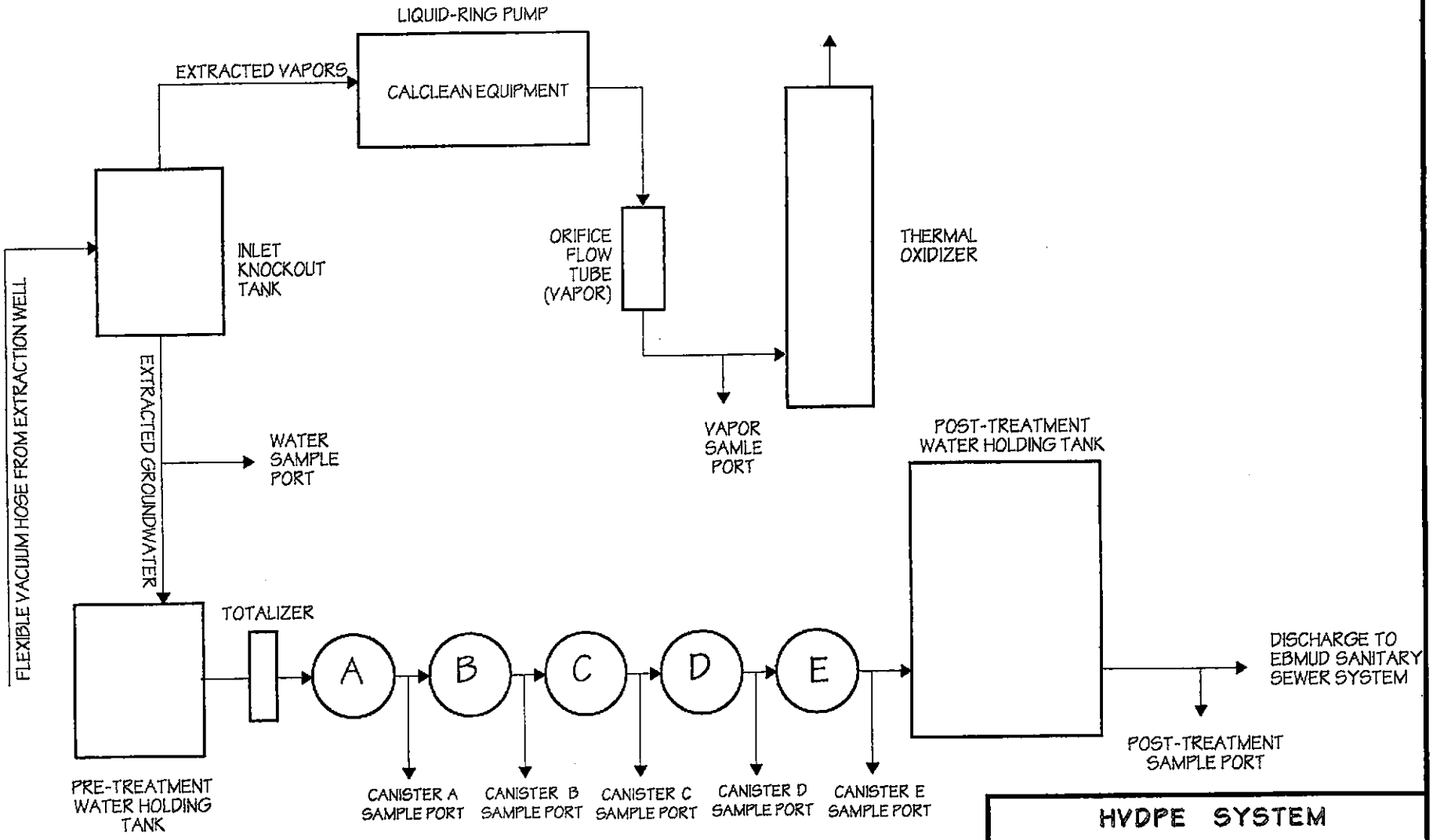
AQUA SCIENCE ENGINEERS, INC. | Figure 2



EXTRACTION WELL AND HVDPE SYSTEM LOCATION MAP

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

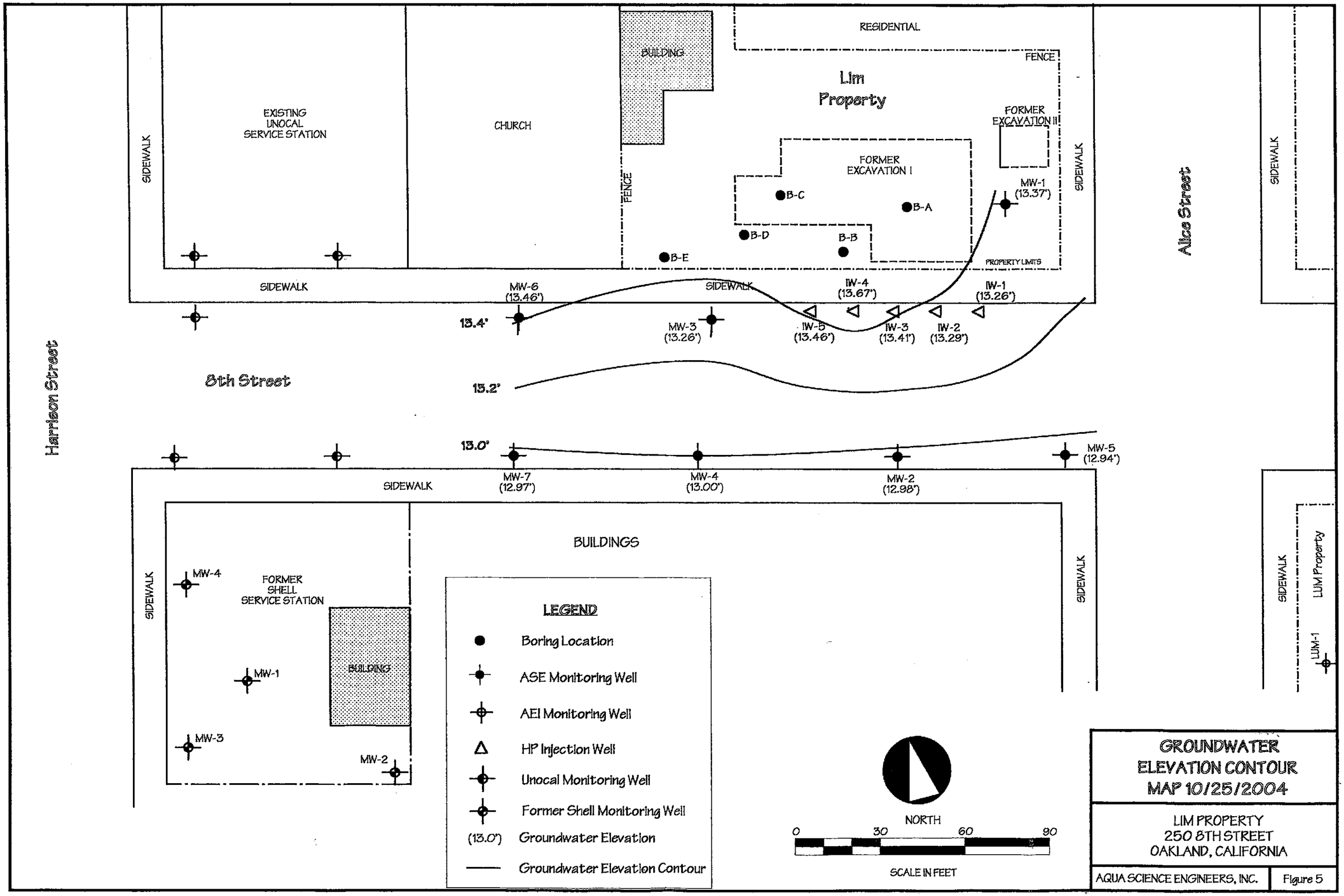
AQUA SCIENCE ENGINEERS, INC. | Figure 3



HVDPE SYSTEM PROCESS FLOW DIAGRAM

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

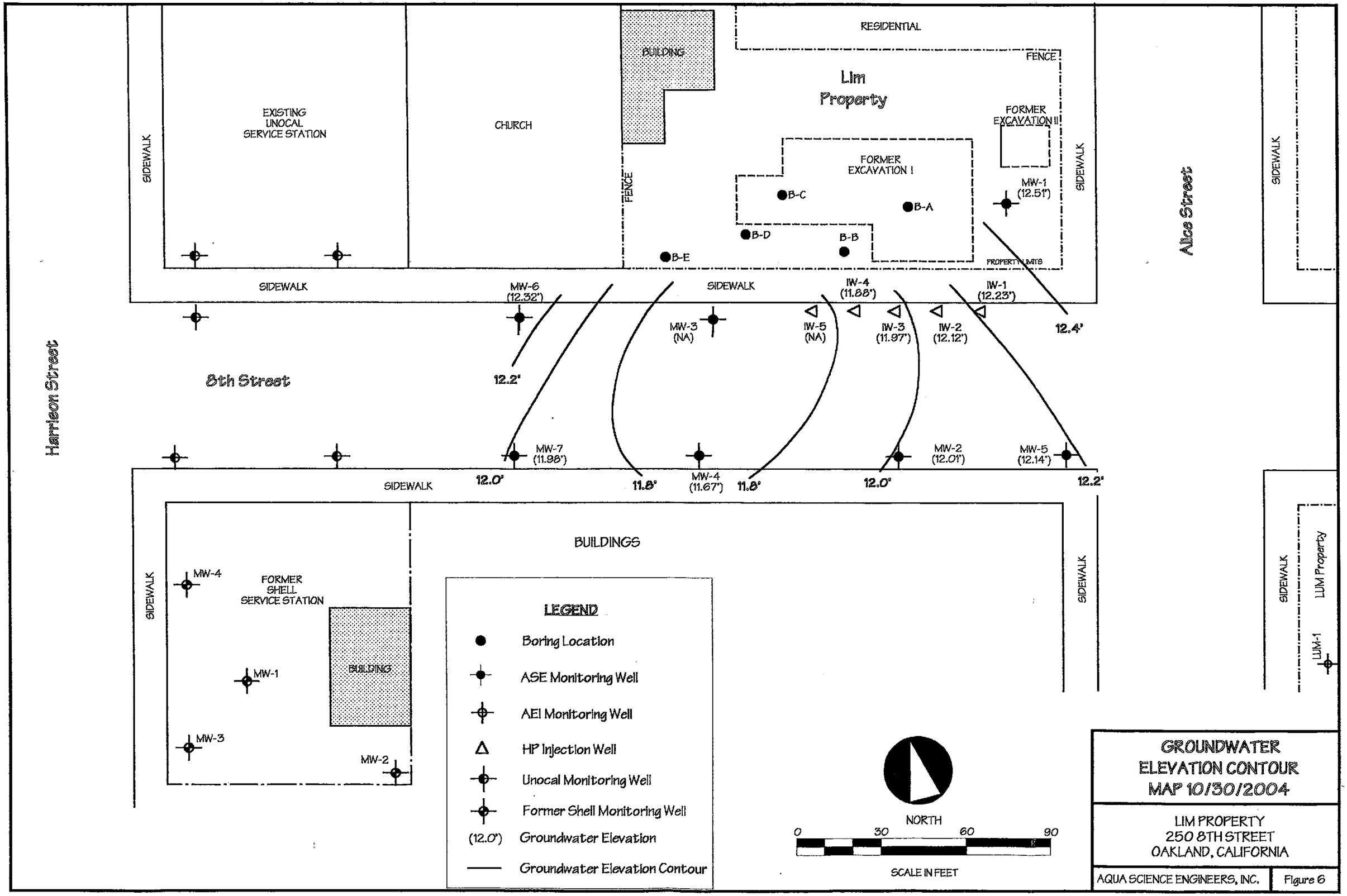
AQUA SCIENCE ENGINEERS, INC. | Figure 4



GROUNDWATER ELEVATION CONTOUR MAP 10/25/2004

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

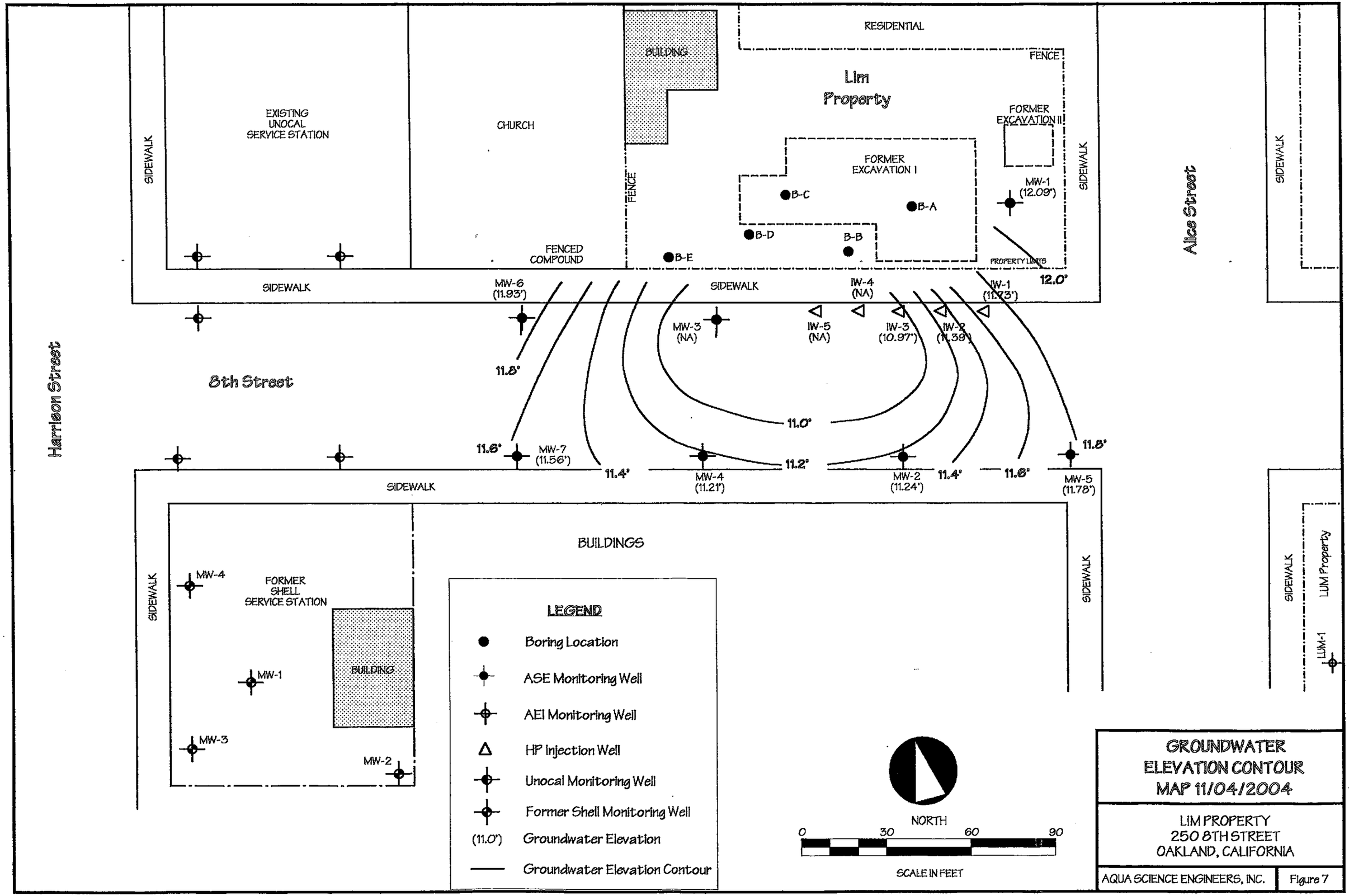
AQUA SCIENCE ENGINEERS, INC. | Figure 5



GROUNDWATER ELEVATION CONTOUR MAP 10/30/2004

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

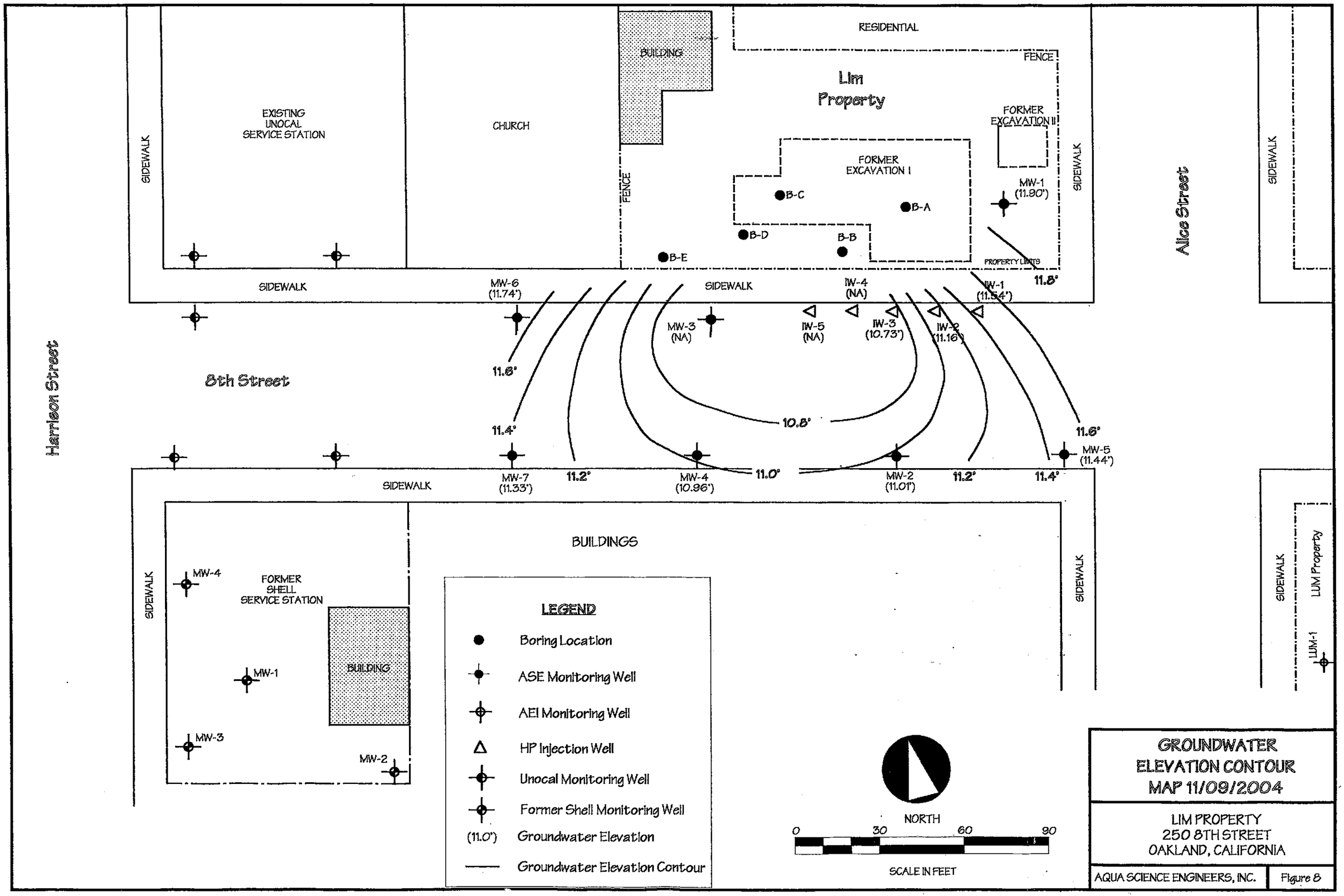
AQUA SCIENCE ENGINEERS, INC. | Figure 6



GROUNDWATER ELEVATION CONTOUR MAP 11/04/2004

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

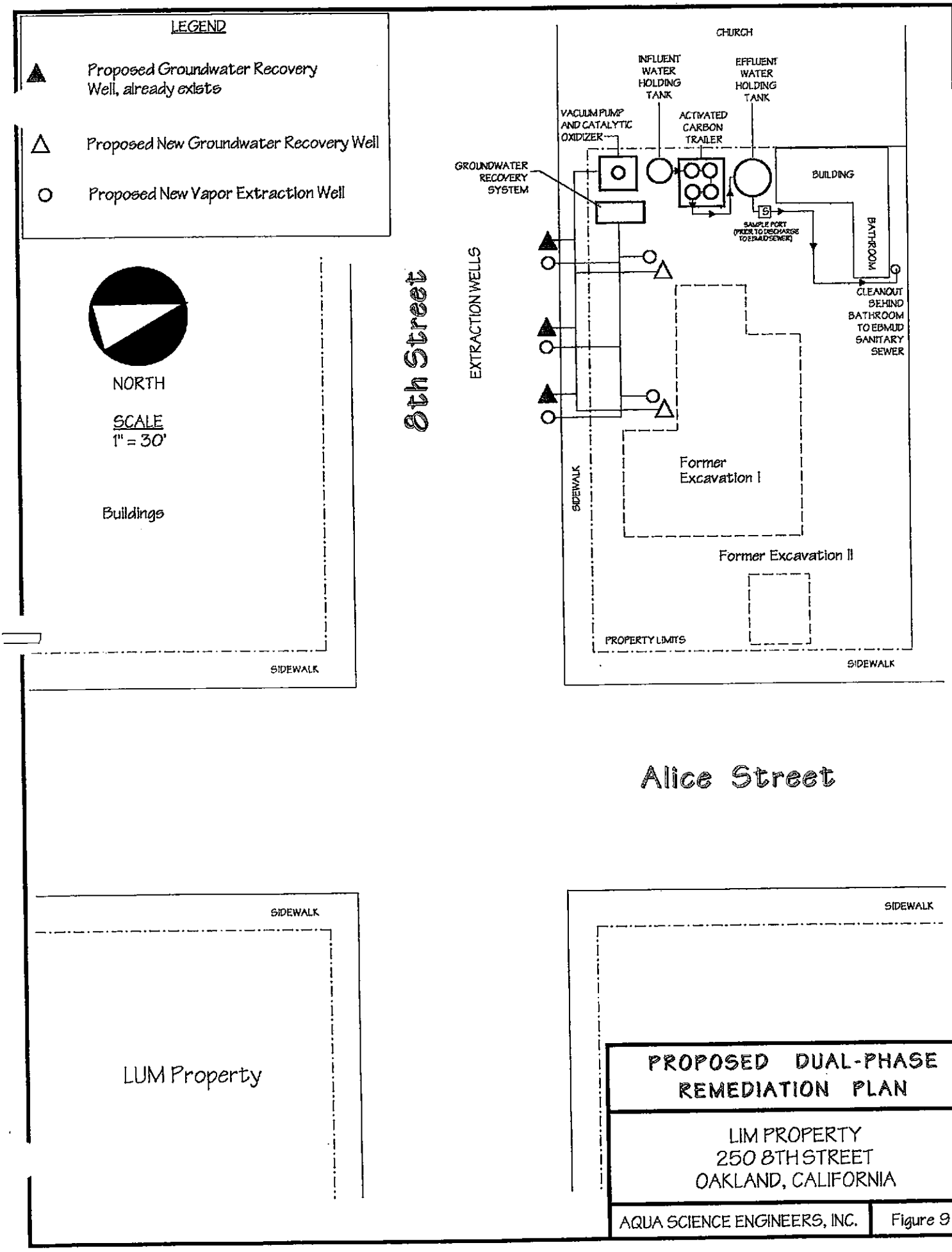
AQUA SCIENCE ENGINEERS, INC. | Figure 7



GROUNDWATER ELEVATION CONTOUR MAP 11/09/2004

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 8



PROPOSED DUAL-PHASE REMEDIATION PLAN

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 9

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-1	10/25/04	29.72	16.35		13.37
	10/26/04		16.55		13.17
	10/27/04		16.69		13.03
	10/28/04		16.97		12.75
	10/29/04		17.09		12.63
	10/30/04		17.20		12.52
	10/31/04		17.29		12.43
	11/01/04		17.40		12.32
	11/02/04		17.47		12.25
	11/03/04		17.55		12.17
	11/04/04		17.63		12.09
	11/05/04		17.67		12.05
	11/06/04		17.70		12.02
	11/07/04		17.74		11.98
	11/08/04		17.78		11.94
	11/09/04		17.82		11.90
MW-2	10/25/04	28.19	15.21		12.98
	10/26/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/27/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/28/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/29/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/30/04		16.18		12.01
	10/31/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	11/01/04		16.59		11.60
	11/02/04		16.71		11.48
	11/03/04		16.88		11.31
	11/04/04		16.95		11.24
	11/05/04		16.99		11.20
	11/06/04		17.04		11.15
	11/07/04		17.08		11.11
	11/08/04		17.13		11.06
	11/09/04		17.18		11.01

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-3	10/25/04	28.58	15.80	0.60	13.26*
	10/26/04		USED AS AN EXTRACTION WELL		
	10/27/04		USED AS AN EXTRACTION WELL		
	10/28/04		USED AS AN EXTRACTION WELL		
	10/29/04		USED AS AN EXTRACTION WELL		
	10/30/04		USED AS AN EXTRACTION WELL		
	10/31/04		USED AS AN EXTRACTION WELL		
	11/01/04		USED AS AN EXTRACTION WELL		
	11/02/04		USED AS AN EXTRACTION WELL		
	11/03/04		USED AS AN EXTRACTION WELL		
	11/04/04		USED AS AN EXTRACTION WELL		
	11/05/04		USED AS AN EXTRACTION WELL		
	11/06/04		USED AS AN EXTRACTION WELL		
	11/07/04		USED AS AN EXTRACTION WELL		
	11/08/04		USED AS AN EXTRACTION WELL		
	11/09/04		USED AS AN EXTRACTION WELL		
MW-4	10/25/04	28.61	15.61		13.00
	10/26/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/27/04		16.35		12.26
	10/28/04		16.61		12.00
	10/29/04		16.81		11.80
	10/30/04		16.94		11.67
	10/31/04		17.09		11.52
	11/01/04		17.17		11.44
	11/02/04		17.25		11.36
	11/03/04		17.33		11.28
	11/04/04		17.40		11.21
	11/05/04		17.44		11.17
	11/06/04		17.49		11.12
	11/07/04		17.54		11.07
	11/08/04		17.59		11.02
	11/09/04		17.65		10.96

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-5	10/25/04	28.40	15.46		12.94
	10/26/04		15.67		12.73
	10/27/04		15.74		12.66
	10/28/04		16.01		12.39
	10/29/04		16.18		12.22
	10/30/04		16.26		12.14
	10/31/04		16.34		12.06
	11/01/04		16.40		12.00
	11/02/04		16.47		11.93
	11/03/04		16.55		11.85
	11/04/04		16.62		11.78
	11/05/04		16.67		11.73
	11/06/04		16.74		11.66
	11/07/04		16.80		11.60
	11/08/04		16.88		11.52
	11/09/04		16.96		11.44
MW-6	10/25/04	29.20	15.74		13.46
	10/26/04		16.38		12.82
	10/27/04		16.40		12.80
	10/28/04		16.64		12.56
	10/29/04		16.77		12.43
	10/30/04		16.88		12.32
	10/31/04		16.99		12.21
	11/01/04		17.07		12.13
	11/02/04		17.13		12.07
	11/03/04		17.21		11.99
	11/04/04		17.27		11.93
	11/05/04		17.31		11.89
	11/06/04		17.35		11.85
	11/07/04		17.39		11.81
	11/08/04		17.42		11.78
	11/09/04		17.46		11.74

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-7	10/25/04	28.95	15.98		12.97
	10/26/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/27/04		16.43		12.52
	10/28/04		16.79		12.16
	10/29/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	10/30/04		16.97		11.98
	10/31/04		BLOCKED, MEASUREMENT UNAVAILABLE		
	11/01/04		17.13		11.82
	11/02/04		17.25		11.70
	11/03/04		17.32		11.63
	11/04/04		17.39		11.56
	11/05/04		17.42		11.53
	11/06/04		17.47		11.48
	11/07/04		17.51		11.44
	11/08/04		17.55		11.40
	11/09/04		17.62		11.33
IW-1	10/25/04	28.33	15.07		13.26
	10/26/04		15.38		12.95
	10/27/04		15.51		12.82
	10/28/04		15.74		12.59
	10/29/04		15.94		12.39
	10/30/04		16.10		12.23
	10/31/04		16.21		12.12
	11/01/04		16.34		11.99
	11/02/04		16.41		11.92
	11/03/04		16.52		11.81
	11/04/04		16.60		11.73
	11/05/04		16.64		11.69
	11/06/04		16.67		11.66
	11/07/04		16.71		11.62
	11/08/04		16.75		11.58
	11/09/04		16.79		11.54

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
IW-2	10/25/04	28.50	15.21		13.29
	10/26/04		15.61		12.89
	10/27/04		15.77		12.73
	10/28/04		16.02		12.48
	10/29/04		16.22		12.28
	10/30/04		16.38		12.12
	10/31/04		16.52		11.98
	11/01/04		16.70		11.80
	11/02/04		16.84		11.66
	11/03/04		17.05		11.45
	11/04/04		17.11		11.39
	11/05/04		17.16		11.34
	11/06/04		17.20		11.30
	11/07/04		17.25		11.25
	11/08/04		17.29		11.21
	11/09/04		17.34		11.16
IW-3	10/25/04	28.14	14.73		13.41
	10/26/04		14.55		13.59
	10/27/04		15.10		13.04
	10/28/04		15.65		12.49
	10/29/04		15.90		12.24
	10/30/04		16.17		11.97
	10/31/04		16.39		11.75
	11/01/04		16.52		11.62
	11/02/04		16.79		11.35
	11/03/04		17.04		11.10
	11/04/04		17.17		10.97
	11/05/04		17.21		10.93
	11/06/04		17.26		10.88
	11/07/04		17.30		10.84
	11/08/04		17.35		10.79
	11/09/04		17.41		10.73

TABLE ONE

Groundwater Elevation Data During Dual Phase Extraction Pilot test
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
IW-4	10/25/04	28.24	14.57		13.67
	10/26/04		15.33		12.91
	10/27/04		15.49		12.75
	10/28/04		15.71		12.53
	10/29/04		16.09		12.15
	10/30/04		16.36		11.88
	10/31/04		16.63		11.61
	11/01/04		16.87		11.37
	11/02/04		USED AS AN EXTRACTION WELL		
	11/03/04		USED AS AN EXTRACTION WELL		
	11/04/04		USED AS AN EXTRACTION WELL		
	11/05/04		USED AS AN EXTRACTION WELL		
	11/06/04		USED AS AN EXTRACTION WELL		
	11/07/04		USED AS AN EXTRACTION WELL		
	11/08/04		USED AS AN EXTRACTION WELL		
	11/09/04		USED AS AN EXTRACTION WELL		
IW-5	10/25/04	28.32	15.92	1.33	13.46*
	10/26/04		USED AS AN EXTRACTION WELL		
	10/27/04		USED AS AN EXTRACTION WELL		
	10/28/04		USED AS AN EXTRACTION WELL		
	10/29/04		USED AS AN EXTRACTION WELL		
	10/30/04		USED AS AN EXTRACTION WELL		
	10/31/04		USED AS AN EXTRACTION WELL		
	11/01/04		USED AS AN EXTRACTION WELL		
	11/02/04		USED AS AN EXTRACTION WELL		
	11/03/04		USED AS AN EXTRACTION WELL		
	11/04/04		USED AS AN EXTRACTION WELL		
	11/05/04		USED AS AN EXTRACTION WELL		
	11/06/04		USED AS AN EXTRACTION WELL		
	11/07/04		USED AS AN EXTRACTION WELL		
	11/08/04		USED AS AN EXTRACTION WELL		
	11/09/04		USED AS AN EXTRACTION WELL		

Notes:

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

TABLE TWO

Pre and Post Dual Phase Extraction Pilot Test
Summary of Chemical Analysis of Groundwater Samples
Petroleum Hydrocarbon Concentrations
All results are in parts per billion

Well Name	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-1							
PRE-TEST	110	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
POST-TEST	180	400	0.68	< 0.5	1.7	< 0.5	< 5.0
MW-2							
PRE-TEST	33,000	NA	9,800	1,200	1,300	4,000	< 20
POST-TEST	44,000	3,600	13,000	4,400	1,600	6,000	< 1000
MW-3							
PRE-TEST	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS (0.60-FEET)						
POST-TEST	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS (0.03-FEET)						
MW-4							
PRE-TEST	78,000	NA	9,300	15,000	2,400	11,000	<50
POST-TEST	87,000	4,300	15,000	21,000	3,000	16,000	< 1300
MW-5							
PRE-TEST	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	5.5
POST-TEST	< 50	370	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
MW-6							
PRE-TEST	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
POST-TEST	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
MW-7							
PRE-TEST	9,900	--	200	1,500	450	1,800	< 5.0
POST-TEST	20,000	1,900	550	4,200	920	4,000	< 500
IW-1							
PRE-TEST	< 50	200	< 0.5	< 0.5	< 0.5	0.66	< 5.0
POST-TEST	< 50	1,000	< 0.5	1.8	< 0.5	2.5	< 5.0
IW-2							
PRE-TEST	4,500	580	430	42	68	30	240
POST-TEST	1,200	1,200	150	3.3	8.4	6.2	62
IW-3							
PRE-TEST	29,000	3,700	1,700	530	1,900	5,500	< 500
POST-TEST	20,000	3,600	1,200	180	1,500	1,800	< 250
IW-4							
PRE-TEST	59,000	4,000	9,600	11,000	3,300	12,000	1,100
POST-TEST	19,000	2,800	5,500	580	820	2,400	< 500
IW-5							
PRE-TEST	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS (1.33-FEET)						
POST-TEST	56,000	15,000	1,500	12,000	1,900	13,000	< 1000

TABLE THREE

Dual Phase Extraction Pilot Test Influent **Vapor** Results
Summary of Chemical Analysis of Grab Air Samples
Petroleum Hydrocarbon Concentrations
All results are in parts per billion

Sample Name & Date	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
VINF-MW3-10.25.04	27,000	NA	710	350	< 100	140	< 1000
VINF-IW5-10.25.04	94,000	NA	4100	5200	630	2100	< 1000
VINF-MW3/IW5-10.28.04	2,800	NA	59	110	20	77	< 0.5
VINF-MW3-11.02.04	23,000	NA	970	1800	400	1500	< 250
VINF-IW4-11.02.04	23,000	NA	720	310	120	380	< 250
VINF-IW5-11.02.04	22,000	NA	740	1200	320	1100	< 250
VINF-MW3/IW4/IW5-11.02.04	34,000	NA	970	< 25	250	780	< 250
VINF-MW3-11.09.04	43,000	NA	890	1200	250	720	< 2.5
VINF-IW4-11.09.04	19,000	NA	460	570	130	420	< 2.5
VINF-IW5-11.09.04	18,000	NA	490	840	180	750	< 2.5
VINF-MW3/IW4/IW5-11.09.04	25,000	NA	490	640	140	490	< 1.0

Notes:

The sample name is as follows: the "V" stands for vapor. The "INF" stands for influent. The "MW3/IW4/IW5" means that at the time of the sample collection, the system was extracting vapors from monitoring well MW-3 and injection wells IW-4 and IW-5 concurrently. The end of the sample name is the date that the sample was collected.

These samples were collected from a sample port on the pre-treatment side of the thermal oxidizer on the CalClean system.

TABLE FOUR
Dual Phase Extraction Pilot Test Influent **Water** Results
Summary of Chemical Analysis of Grab Water Samples
Petroleum Hydrocarbon Concentrations
All results are in parts per billion

Sample Name & Date	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
WINF-MW3/IW5-10.28.04	20,000	5,700	690	2200	720	3700	< 500
WINF-MW3/IW4/IW5-11.05.04	7,800	2,400	870	1400	320	1700	< 100

Notes:

The sample name is as follows: the "W" stands for water. The "INF" stands for influent. The "MW3/IW4/IW5" means that at the time of the sample collection, the system was extracting water from monitoring well MW-3 and injection wells IW-4 and IW-5 concurrently. The end of the sample name is the date that the sample was collected.

These samples were collected from a sample port on the pre-treatment holding tank of the CalClean system.

APPENDIX A

Permits

CITY OF OAKLAND • Community and Economic Development Agency
250 Frank H. Ogawa Plaza, 2nd Floor, Oakland, CA 94612 • Phone (510) 238-3443 • FAX (510) 238-2263

Job Site 250 8TH ST Parcel# 001 -0185-011-00 Appl# OB040665

reserve meters 8-256; -254; -252; -250
one meter [8-256] is out of order

Permit Issued 10/20/04

250 8TH ST

Nbr of days: 14
Effective: 10/25/04

Nbr of meters: 4
Expiration: ~~10/25/~~04
11/07/04

SHORT TERM METERED

	Applcnt	Phone#	Lic#	--License Classes--
Owner AQUA SCIENCE ENGINEERS	X	(925)820-9391		
Contractor				
Arch/Engr				
Agent DAVID ALLEN				
Applic Addr				

$1,732.73 TOTAL FEES PAID AT ISSUANCE

$54.00	Applic	$1,456.00	Permit
$.00	Process	$143.45	Rec Mgmt
$.00	Gen Plan	$.00	Invstg
$.00	Other	$79.28	Tech Enh

ADDRESS:

CITY OF OAKLAND

JOB SITE

DIST:

Applicant: _____ _____

Issued by: _____ _____

EAST BAY
MUNICIPAL UTILITY DISTRICT

DAVID R. WILLIAMS
DIRECTOR OF WASTEWATER

CERTIFIED MAIL
(Return Receipt Requested)
Certified Mail No. 7003 0500 0004 6346 4310

October 27, 2004

Mr. David Allen
Aqua Science Engineers, Inc.
208 W. El Pintado
Danville, CA 94526

Dear Mr. Allen:

Re: Wastewater Discharge Permit No. 50553801

Enclosed is the Special Discharge Permit (Permit) for your facility, effective October 27, 2004, to January 26, 2005, for your information and records. Please read the Permit Terms and Conditions and the attached Special Discharge Permit Standard Terms and Conditions, March 2001 Edition. As a Permit holder, you are legally responsible for complying with all Permit conditions and requirements.

Aqua Science Engineers, Inc. shall report to the Environmental Services Division any changes to the premises or operations that significantly affect the quality or volume of permitted discharge or that deviate from the terms and conditions of the Permit.

If you have any questions regarding this Permit, please contact Trish Maguire of the Environmental Services Division at (510) 287-1727.

Sincerely,

for BENNETT K. HORENSTEIN
Manager of Environmental Services

BKH:PEM:pem

Enclosures

W:\NAB\IDS\Permits\Special Discharge\Permits\Aqua Science Engineers, Inc\Permit Cover Letter.doc

RECEIVED
OCT 14 2004
ENVIRONMENTAL SERVICES DIVISION

EBMUD

SPECIAL DISCHARGE PERMIT
Terms and Conditions
APPLICANT INFORMATION

PERMIT NUMBER 5055380 1

APPLICANT BUSINESS NAME	SIC CODE
AQUA SCIENCE ENGINEERS, INC.	4950

ADDRESS OF SITE DISCHARGING WASTEWATER	APPLICANT MAILING ADDRESS
250 8th STREET (STREET ADDRESS)	208 W. EL PINTADO (STREET ADDRESS)
OAKLAND, CA (CITY) 94607 (ZIP CODE)	DANVILLE, CA (CITY) 94526 (ZIP CODE)

CONTACT PERSONS

	NAME	TITLE	PHONE NUMBER
APPLICANT	DAVID ALLEN	SENIOR PROJECT MANAGER	925-820-9391
CONSULTANT	SAME		
CONTRACTOR	SAME		

CERTIFICATION

I understand that issuance of a Special Discharge Permit does not exempt or preclude the facility from being issued a Discharge Minimization or Pollution Prevention Permit.

I understand that I am legally responsible for discharge of wastewater from the facility and for complying with the Terms and Conditions of this Special Discharge Permit.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that the qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

DAVID ALLEN (NAME) — SENIOR PROJECT MANAGER (TITLE)

David Allen (SIGNATURE (SEE CERTIFICATION REQUIREMENTS ON REVERSE)) — 10.14.04 (DATE)

EBMUD

SPECIAL DISCHARGE PERMIT
TERMS AND CONDITIONS
CRITERIA AND FEES

PERMIT NUMBER 5055380 1

Purpose: This information demonstrates the wastewater meets established criteria for a Special Discharge Permit. Check each statement that applies and supply required information.

☑ *Reasonable and cost effective means of recycling and reuse of the wastewater are unavailable.* Provide information describing what means were considered, and why they were not implemented.
WATER CANNOT BE RE-USED DUE TO HYDROCARBON CONCENTRATIONS FROM LEAKING UNDERGROUND TANKS

☐ *The wastewater is unsuitable for discharge to the storm sewer.* Provide explanation.

☑ *The wastewater is generated only within the SD-1 wastewater service area.*

☑ *The wastewater meets source criteria.* Describe the source and operations generating the wastewater. Include the Wastewater Source Category from Special Discharge Permit Standard Terms and Conditions, Section A, II.
(d) MONITORING WELL GROUNDWATER

☑ *The wastewater is discharged during a limited period of time, not exceeding 90 days.*
Maximum Discharge Duration: 15 days Start Date: 10-23-04 Hours of Discharge: CONTINUOUS

☑ *Wastewater volume and flow do not cause a capacity problem for the sanitary sewer system.*
Total Discharge Volume: 10,000 gallons (ESTIMATED)

☑ *The side sewer through which the wastewater is discharged has been identified, and approved if required.*
Attach a site diagram. Show facility location, property lines, wastewater source, drainage plumbing, the side sewer, and sampling location.

☑ *Known and potential pollutants present in the wastewater are characterized.*
Attach a summarized list of all pollutant concentrations present in the wastewater. Also include the complete certified laboratory analytical report. SEE ATTACHED QUARTERLY MONITORING REPORT, DATED JULY 13, 2004

☑ *Treatment technology or best management practices have been identified that will result in the wastewater meeting discharge limits.*

1) For EBMUD metered sources, describe pretreatment or best management practices that will be used to ensure the wastewater discharge complies with Ordinance No. 311 wastewater discharge limits.
Provide EBMUD account number: _____

OR

For unmetered sources, including construction dewatering or groundwater, describe pretreatment or best management practices that will be used to ensure pollutant concentrations do not exceed SD-1 annual average influent concentrations.
SEE ATTACHED SCOPE OF WORK

2) Attach a schematic flow diagram of the pretreatment system. The diagram must accurately depict the pretreatment system as constructed. Field deviation from the diagram is not allowed, unless pretreatment system modifications are approved and the permit revised prior to the discharge.

*This Section for EBMUD Use Only - **All fees will be applied to the account established for this permit***

☑ *Permit application fee - $650*

☐ *Volatile Organics Testing - $127* ☐ *Heavy Metals Testing - $115* ☐ *Oil and Grease Testing - $62* ☐ *pH Testing - $15*

☑ *Additional Wastewater Treatment/Disposal Charges - ~~$0.05~~/gallon* 0.02

Total: $ 850

EBMUD

PERMIT NUMBER **50553801**

SPECIAL DISCHARGE PERMIT
Terms and Conditions

GENERAL CONDITIONS

I. Aqua Science Engineers, Inc. shall comply with all items of the attached *Special Discharge Permit Standard Terms and Conditions.*

II. Aqua Science Engineers, Inc. shall discharge Special Discharge Wastewater only from the specific source described in the *Special Discharge Permit Terms & Conditions, Criteria and Fees* form. The discharge of all wastewater must comply with EBMUD Ordinance No. 311A-03.

III. Aqua Science Engineers, Inc. shall immediately cease discharge of treated or managed Special Discharge Wastewater if not in compliance with any of the terms and conditions of this Special Discharge Permit.

IV. This Special Discharge Permit is considered a waiver of EBMUD Ordinance No. 311A-03, Title I, Section 5, which prohibits the discharge of storm water, drainage water, and groundwater to the community sewer.

V. Aqua Science Engineers, Inc. shall not discharge Special Discharge Wastewater authorized by this Special Discharge Permit after the expiration date.

VI. Aqua Science Engineers, Inc. shall not exceed a discharge flow rate 100 gallons/minute.

COMPLIANCE REQUIREMENTS

I. Aqua Science Engineers, Inc. shall pretreat or manage all Special Discharge Wastewater prior to discharge to the side sewer. Pretreatment or management shall be sufficient to achieve compliance with the limits established in this Special Discharge Permit.

II. Aqua Science Engineers, Inc. shall submit a report summarizing the total volume of wastewater discharged to the sanitary sewer during the duration of the pilot test project. The report is due 30 days following the final discharge occurs.

III.

IV. Aqua Science Engineers, Inc. shall post a sign in the work area stating "All Wastewater Discharge must comply with the Special Discharge Permit."

WASTEWATER DISCHARGE LIMITS

Aqua Science Engineers, Inc. shall not discharge Special Discharge Wastewater into the community sewer if the strength of the wastewater exceeds

- ☒ Limits derived from EBMUD Ordinance No. 311A-03.
- ☒ Benzene = 5 µg/L; Toluene = 5 µg/L; Ethylbenzene = 5 µg/L; Total Xylenes = 5 µg/L

MONITORING REQUIREMENTS

Aqua Science Engineers, Inc. shall monitor wastewater discharge operations to ensure compliance with the terms and conditions of this Special Discharge Permit. Monitoring may include sampling and analysis of the discharge. The sampling location shall be the Post-Treatment Sample Port shown on the process flow diagram.

INSPECTIONS

The District may conduct random, unannounced inspections to verify compliance with the terms and conditions of this Special Discharge Permit. Aqua Science Engineers, Inc. shall grant District personnel access to the facility to conduct inspections and collect Special Discharge Wastewater samples.

ENFORCEMENT AND PENALTIES

Failure to comply with the terms and conditions of this Special Discharge Permit and *Special Discharge Permit Standard Terms and Conditions* may result in enforcement actions, including violation follow-up fees, civil enforcement penalties, and administrative fines of up to $5,000 per day.

RATES AND CHARGES

This Special Discharge Permit may be amended to include changes to rates and charges that may be established by the District during the term of this Special Discharge Permit.

AUTHORIZATION

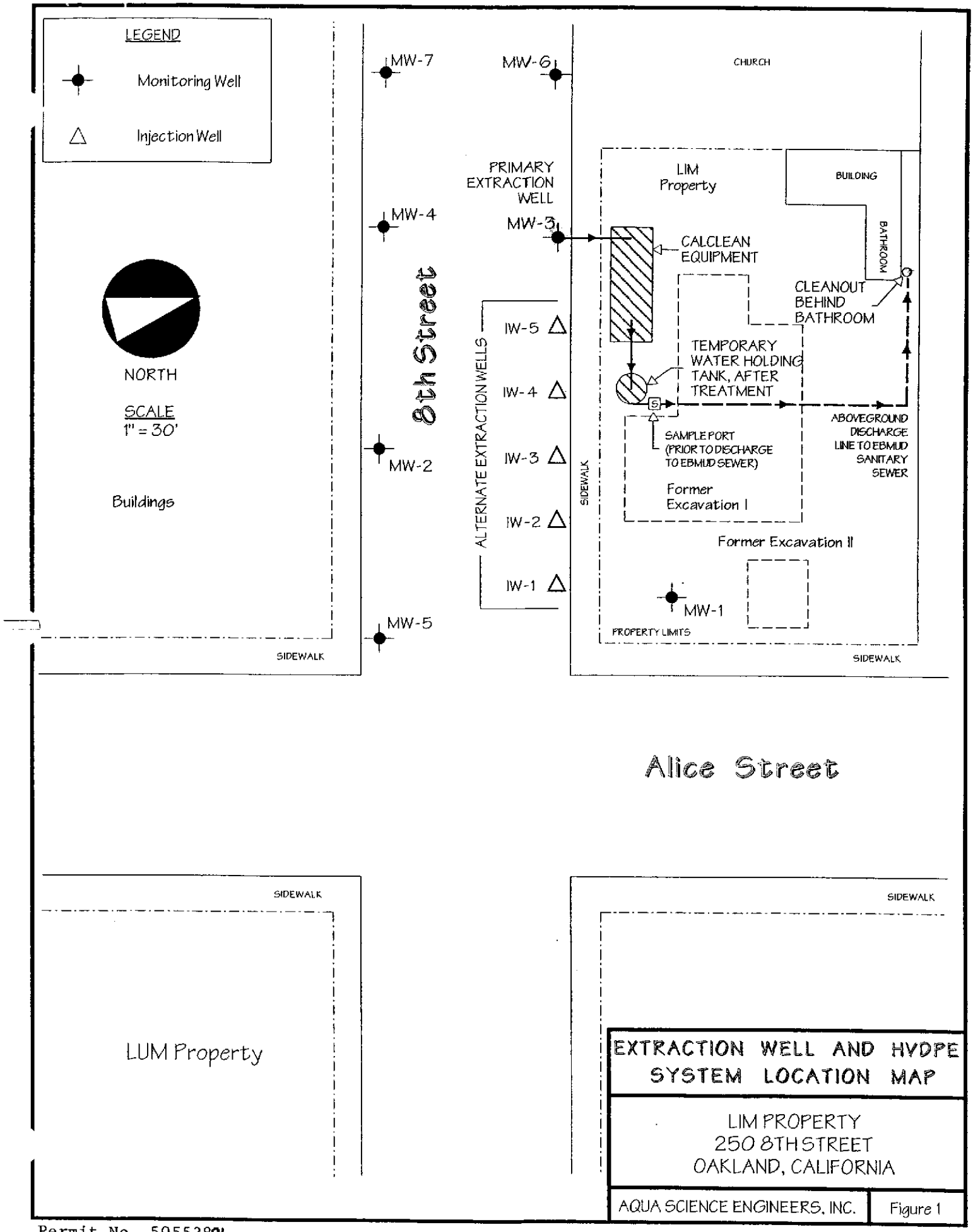
Special Discharge Permit Holder is hereby authorized to discharge Special Discharge Wastewater to the community sewer, subject to compliance with EBMUD Ordinance No. 311A-03, Special Discharge Permit Terms and Conditions, and billing conditions.

Effective: October 27, 2004

Expiration: January 26, 2005

Director, Wastewater Department

10/28/04
Date

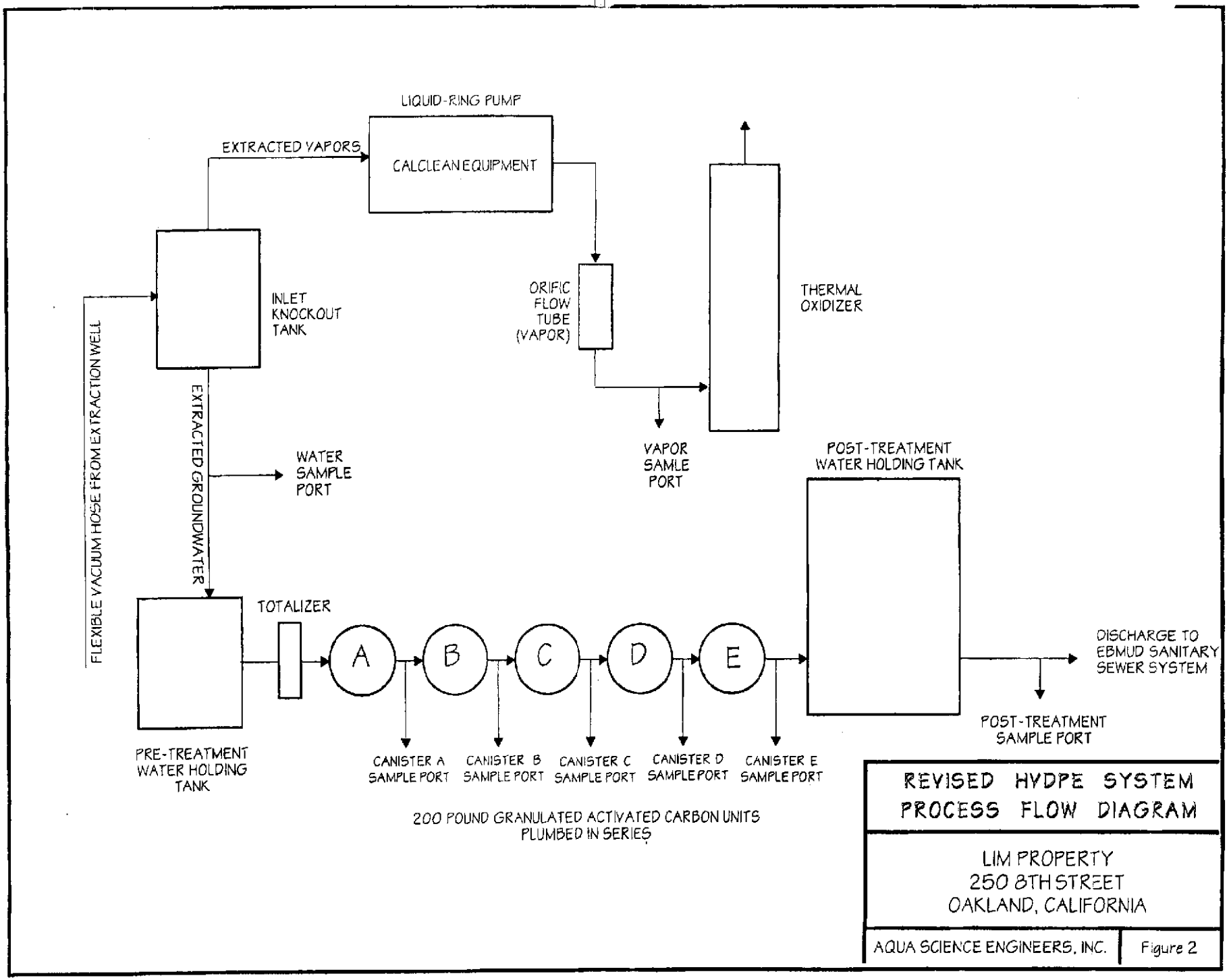


EXTRACTION WELL AND HVDPE SYSTEM LOCATION MAP

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 1

Permit No. 505538



APPENDIX B

Certified Analytical Reports and
Chain of Custody Documentation
For Pre & Post DPE Event
Well Sampling
and
EBMUD Discharge Sampling

SEVERN TRENT STL

Submission#: 2004-10-0819

Aqua Science Engineers, Inc.

November 05, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th St., Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 10/26/2004 15:45
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/10/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-10-0819

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
IW-1	10/25/2004	Water	1
IW-2	10/25/2004	Water	2
IW-3	10/25/2004	Water	3
IW-4	10/25/2004	Water	4

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-1**

Lab ID: 2004-10-0819 - 1

Sampled: 10/25/2004

Extracted: 10/29/2004 01:58

Matrix: Water

QC Batch#: 2004/10/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/29/2004 01:58	
Benzene	ND	0.50	ug/L	1.00	10/29/2004 01:58	
Toluene	ND	0.50	ug/L	1.00	10/29/2004 01:58	
Ethyl benzene	ND	0.50	ug/L	1.00	10/29/2004 01:58	
Xylene(s)	0.66	0.50	ug/L	1.00	10/29/2004 01:58	
MTBE	ND	5.0	ug/L	1.00	10/29/2004 01:58	
Surrogate(s)						
Trifluorotoluene	95.5	58-124	%	1.00	10/29/2004 01:58	
4-Bromofluorobenzene-FID	81.4	50-150	%	1.00	10/29/2004 01:58	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-2**

Lab ID: 2004-10-0819 - 2

Sampled: 10/25/2004

Extracted: 11/4/2004 04:05

Matrix: Water

QC Batch#: 2004/11/03-02.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	4500	500	ug/L	10.00	11/04/2004 04:05	Q1,A2
Benzene	430	5.0	ug/L	10.00	11/04/2004 04:05	
Toluene	42	5.0	ug/L	10.00	11/04/2004 04:05	
Ethyl benzene	68	5.0	ug/L	10.00	11/04/2004 04:05	
Xylene(s)	30	5.0	ug/L	10.00	11/04/2004 04:05	
MTBE	240	50	ug/L	10.00	11/04/2004 04:05	
Surrogate(s)						
Trifluorotoluene	111.8	58-124	%	10.00	11/04/2004 04:05	
4-Bromofluorobenzene-FID	75.2	50-150	%	10.00	11/04/2004 04:05	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-3**

Lab ID: 2004-10-0819 - 3

Sampled: 10/25/2004

Extracted: 11/4/2004 09:02

Matrix: Water

QC Batch#: 2004/11/03-02.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	29000	5000	ug/L	100.00	11/04/2004 09:02	Q1,A2
Benzene	1700	50	ug/L	100.00	11/04/2004 09:02	
Toluene	530	50	ug/L	100.00	11/04/2004 09:02	
Ethyl benzene	1900	50	ug/L	100.00	11/04/2004 09:02	
Xylene(s)	5500	50	ug/L	100.00	11/04/2004 09:02	
MTBE	ND	500	ug/L	100.00	11/04/2004 09:02	
Surrogate(s)						
Trifluorotoluene	87.0	58-124	%	100.00	11/04/2004 09:02	
4-Bromofluorobenzene-FID	68.9	50-150	%	100.00	11/04/2004 09:02	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-4**

Lab ID: 2004-10-0819 - 4

Sampled: 10/25/2004

Extracted: 11/4/2004 09:35

Matrix: Water

QC Batch#: 2004/11/03-02.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	59000	10000	ug/L	200.00	11/04/2004 09:35	Q1,A2
Benzene	9600	100	ug/L	200.00	11/04/2004 09:35	
Toluene	11000	100	ug/L	200.00	11/04/2004 09:35	
Ethyl benzene	3300	100	ug/L	200.00	11/04/2004 09:35	
Xylene(s)	12000	100	ug/L	200.00	11/04/2004 09:35	
MTBE	1100	1000	ug/L	200.00	11/04/2004 09:35	
Surrogate(s)						
Trifluorotoluene	87.4	58-124	%	200.00	11/04/2004 09:35	
4-Bromofluorobenzene-FID	66.7	50-150	%	200.00	11/04/2004 09:35	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank **Water** **QC Batch # 2004/10/28-01.05**

MB: 2004/10/28-01.05-001

Date Extracted: 10/28/2004 07:42

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/28/2004 07:42	
Benzene	ND	0.5	ug/L	10/28/2004 07:42	
Toluene	ND	0.5	ug/L	10/28/2004 07:42	
Ethyl benzene	ND	0.5	ug/L	10/28/2004 07:42	
Xylene(s)	ND	0.5	ug/L	10/28/2004 07:42	
MTBE	ND	5.0	ug/L	10/28/2004 07:42	
Surrogates(s)					
Trifluorotoluene	105.2	58-124	%	10/28/2004 07:42	
4-Bromofluorobenzene-FID	80.8	50-150	%	10/28/2004 07:42	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank **Water** **QC Batch # 2004/11/03-02.05**

MB: 2004/11/03-02.05-031

Date Extracted: 11/04/2004 02:26

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	52.1	50	ug/L	11/04/2004 02:26	A1
Benzene		0.5	ug/L	11/04/2004 02:26	
Toluene	ND	0.5	ug/L	11/04/2004 02:26	
Ethyl benzene	ND	0.5	ug/L	11/04/2004 02:26	
Xylene(s)	ND	0.5	ug/L	11/04/2004 02:26	
MTBE	ND	5.0	ug/L	11/04/2004 02:26	
Surrogates(s)					
Trifluorotoluene	96.5	58-124	%	11/04/2004 02:26	
4-Bromofluorobenzene-FID	77.7	50-150	%	11/04/2004 02:26	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/10/28-01.05**

LCS 2004/10/28-01.05-002 Extracted: 10/28/2004 Analyzed: 10/28/2004 08:14
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	55.0		50.0	110.0			77-123	20		
Toluene	54.5		50.0	109.0			78-122	20		
Ethyl benzene	54.7		50.0	109.4			70-130	20		
Xylene(s)	165		150	110.0			75-125	20		
Surrogates(s)										
Trifluorotoluene	538		500	107.6			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/10/28-01.05**

LCS 2004/10/28-01.05-003 Extracted: 10/28/2004 Analyzed: 10/28/2004 08:47
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	259		250	103.6			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	432		500	86.4			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/03-02.05**

LCS 2004/11/03-02.05-032 Extracted: 11/04/2004 Analyzed: 11/04/2004 02:59
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	47.2		50.0	94.4			77-123	20		
Toluene	52.4		50.0	104.8			78-122	20		
Ethyl benzene	50.7		50.0	101.4			70-130	20		
Xylene(s)	152		150	101.3			75-125	20		
Surrogates(s)										
Trifluorotoluene	505		500	101.0			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/03-02.05**

LCS 2004/11/03-02.05-033 Extracted: 11/04/2004 Analyzed: 11/04/2004 03:32
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	265		250	106.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	396		500	79.2			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/10/28-01.05**

MS/MSD

Lab ID: 2004-10-0558 - 006

MS: 2004/10/28-01.05-017 Extracted: 10/28/2004 Analyzed: 10/28/2004 16:46
Dilution: 5.00

MSD: 2004/10/28-01.05-018 Extracted: 10/28/2004 Analyzed: 10/28/2004 17:18
Dilution: 5.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	308	344	61.5	250	98.6	113.0	13.6	65-135	20		
Toluene	240	279	2.70	250	94.9	110.5	15.2	65-135	20		
Ethyl benzene	296	343	75.0	250	88.4	107.2	19.2	65-135	20		
Xylene(s)	688	827	7.18	750	90.8	109.3	18.5	65-135	20		
Surrogate(s)											
Trifluorotoluene	418	463		500	83.6	92.6		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/10/28-01.05**

MS/MSD

Lab ID: 2004-10-0558 - 006

MS: 2004/10/28-01.05-019 Extracted: 10/28/2004 Analyzed: 10/28/2004 17:51

Dilution: 5.00

MSD: 2004/10/28-01.05-020 Extracted: 10/28/2004 Analyzed: 10/28/2004 18:23

Dilution: 5.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	3370	3190	2340	1250	82.4	68.0	19.1	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	420	425		500	83.9	85.0		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/03-02.05**

IW-2 >> MS

Lab ID: 2004-10-0819 - 002

MS: 2004/11/03-02.05-035 Extracted: 11/04/2004 Analyzed: 11/04/2004 04:38

Dilution: 20.00

MSD: 2004/11/03-02.05-036 Extracted: 11/04/2004 Analyzed: 11/04/2004 05:11

Dilution: 20.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	1270	1400	432	1000	83.8	96.8	14.4	65-135	20		
Toluene	1000	1070	41.7	1000	95.8	102.8	7.0	65-135	20		
Ethyl benzene	1030	1100	68.1	1000	96.2	103.2	7.0	65-135	20		
Xylene(s)	2970	3140	29.8	3000	98.0	103.7	5.7	65-135	20		
Surrogate(s)											
Trifluorotoluene	454	536		500	90.8	107.2		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/03-02.05**

IW-2 >> MS

Lab ID: 2004-10-0819 - 002

MS: 2004/11/03-02.05-037 Extracted: 11/04/2004 Analyzed: 11/04/2004 05:44

Dilution: 10.00

MSD: 2004/11/03-02.05-038 Extracted: 11/04/2004 Analyzed: 11/04/2004 06:17

Dilution: 10.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	7490	7070	4510	2500	119.2	102.4	15.2	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	427	414		500	85.5	82.7		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

A1

Analyte was found in the method blank at a concentration greater than the reporting limit.

A2

Analyte detected in Method Blank above the RL. Concentration detected in sample is greater than 10x the Method Blank result.

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

SEVERN TRENT STL

Submission: 2004-10-0819

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
IW-1	10/25/2004	Water	1
IW-2	10/25/2004	Water	2
IW-3	10/25/2004	Water	3
IW-4	10/25/2004	Water	4

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 3511
Sample ID: **IW-1**
Sampled: 10/25/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-10-0819 - 1
Extracted: 10/28/2004 12:37
QC Batch#: 2004/10/28-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	200	50	ug/L	1.00	10/29/2004 11:31	ndp
Surrogate(s)						
o-Terphenyl	162.3	78-177	%	1.00	10/29/2004 11:31	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 3511
Sample ID: **IW-2**
Sampled: 10/25/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-10-0819 - 2
Extracted: 10/28/2004 12:37
QC Batch#: 2004/10/28-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	580	50	ug/L	1.00	10/29/2004 11:58	edr
Surrogate(s)						
o-Terphenyl	145.8	78-177	%	1.00	10/29/2004 11:58	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 3511
Sample ID: **IW-3**
Sampled: 10/25/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-10-0819 - 3
Extracted: 10/28/2004 12:37
QC Batch#: 2004/10/28-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	3700	50	ug/L	1.00	10/29/2004 12:25	edr
Surrogate(s)						
o-Terphenyl	147.7	78-177	%	1.00	10/29/2004 12:25	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s): 3511
Sample ID: **IW-4**
Sampled: 10/25/2004
Matrix: Water

Test(s): 8015M
Lab ID: 2004-10-0819 - 4
Extracted: 10/28/2004 12:37
QC Batch#: 2004/10/28-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	4000	100	ug/L	2.00	10/29/2004 17:23	edr
Surrogate(s)						
o-Terphenyl	129.8	78-177	%	2.00	10/29/2004 17:23	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 3511 — Test(s): 8015M

Method Blank — **Water** — **QC Batch # 2004/10/28-04.10**

MB: 2004/10/28-04.10-001 — Date Extracted: 10/28/2004 12:37

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	10/29/2004 11:31	
Surrogates(s)					
o-Terphenyl	128.4	78-177	%	10/29/2004 11:31	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 3511

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/10/28-04.10**

LCS 2004/10/28-04.10-002 Extracted: 10/28/2004 Analyzed: 10/29/2004 11:58
LCSD 2004/10/28-04.10-003 Extracted: 10/28/2004 Analyzed: 10/29/2004 12:25

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	910	928	680	133.8	136.5	2.0	60-150	25		
Surrogates(s)										
o-Terphenyl	1.90	1.94	1.25	152.1	155.3		78-177	0		

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Legend and Notes

Result Flag

edr

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

95060

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

Chain of Custody

2004-10-0819

PAGE 1 OF 1

SAMPLER (SIGNATURE) D. Allen

PROJECT NAME LIM JOB NO. 2808

ADDRESS 250 8th St., Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)				HOLD
IW-1	10/25		water	5	X	X															
IW-2	↓		↓	↓																	
IW-3																					
IW-4																					

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (2) (signature) 0910 (time)	RELINQUISHED BY: (1) (signature) (time)	RECEIVED BY LABORATORY: (signature) 1545 (time)	COMMENTS: 2° C
D. ALLEN (printed name) 10/26/04 (date)	J. Mefford (printed name) 102604 (date)	(printed name) (date)	M. Villanueva (printed name) 10/26/04 (date)	TURN AROUND TIME: STANDARD 24Hr 48Hr 72Hr
Company-ASE, INC.	Company- STL-SF	Company-	Company- STL SF	OTHER:

(3) RELINQ. ... 102604

SEVERN TRENT STL

STL San Francisco

Sample Receipt Checklist

ubmission #:2004- 10 - 0819

Checklist completed by: (initials) MN Date: 10/27/04

Courier name: ☒ STL San Francisco ☐ Client _____

Custody seals intact on shipping container/samples	Yes____ No____ Not Present ✓
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____
Samples in proper container/bottle?	Yes ✓ No____
Sample containers intact?	Yes ✓ No____
Sufficient sample volume for indicated test?	Yes ✓ No____
All samples received within holding time?	Yes ✓ No____
Container/Temp Blank temperature in compliance (4°C ± 2)?	Temp: 2 °C Yes ✓ No____
Potential reason for > 6°C: Ice melted ☐; Ice in bags ☐; Not enough ice ☐; Not enough blue ice ☐; Samples in boxes ☐; Sampled < 4hr ago? ☐; Ice not required (e.g. air or bulk sample) ☐	Ice Present: Yes ✓ No____
____Water - VOA vials have zero headspace?	No VOA vials submitted____ Yes ✓ No____

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or **L** (large ~ O)

Water - **pH acceptable upon receipt?** ☐ Yes ☐ No

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc –**Lot #(s)** _____

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/04 Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

SEVERN TRENT STL

Submission#: 2004-11-0381

Aqua Science Engineers, Inc.

November 19, 2004

208 West El Pintado Road
Danville, CA 94526
Attn.: Dave Allen
Project: LIM

Dear Mr. Allen,

Attached is our report for your samples received on 11/11/2004 16:33
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/26/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu.

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-11-0381

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	11/10/2004 08:00	Water	1
MW-2	11/10/2004 06:45	Water	2
MW-4	11/10/2004 07:15	Water	3
MW-5	11/10/2004 07:00	Water	4
MW-6	11/10/2004 07:45	Water	5
MW-7	11/10/2004 07:30	Water	6
IW-1	11/10/2004 08:15	Water	7
IW-2	11/10/2004 08:45	Water	8
IW-3	11/10/2004 08:30	Water	9
IW-4	11/10/2004 09:00	Water	10
IW-5	11/10/2004 09:15	Water	11

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Test(s): 8015M
Sample ID: **MW-1**
Lab ID: 2004-11-0381 - 1
Sampled: 11/10/2004 08:00
Extracted: 11/16/2004 09:01
Matrix: Water
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	400	50	ug/L	1.00	11/16/2004 20:38	Q2
Surrogate(s)						
o-Terphenyl	160.6	78-177	%	1.00	11/16/2004 20:38	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511 Test(s): 8015M

Sample ID: **MW-2** Lab ID: 2004-11-0381 - 2

Sampled: 11/10/2004 06:45 Extracted: 11/16/2004 09:01

Matrix: Water QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	3600	100	ug/L	2.00	11/17/2004 16:32	Q2
Surrogate(s)						
o-Terphenyl	144.5	78-177	%	2.00	11/17/2004 16:32	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Sample ID: **MW-4**
Sampled: 11/10/2004 07:15
Matrix: Water

Test(s): 8015M
Lab ID: 2004-11-0381 - 3
Extracted: 11/16/2004 09:01
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	4300	100	ug/L	2.00	11/17/2004 16:59	Q2
Surrogate(s)						
o-Terphenyl	147.1	78-177	%	2.00	11/17/2004 16:59	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	3511	Test(s):	8015M
Sample ID:	**MW-5**	Lab ID:	2004-11-0381 - 4
Sampled:	11/10/2004 07:00	Extracted:	11/16/2004 09:01
Matrix:	Water	QC Batch#:	2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	370	50	ug/L	1.00	11/16/2004 18:50	Q2
Surrogate(s)						
o-Terphenyl	148.5	78-177	%	1.00	11/16/2004 18:50	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Sample ID: **MW-6**
Sampled: 11/10/2004 07:45
Matrix: Water

Test(s): 8015M
Lab ID: 2004-11-0381 - 5
Extracted: 11/16/2004 09:01
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	11/16/2004 19:17	
Surrogate(s)						
o-Terphenyl	147.6	78-177	%	1.00	11/16/2004 19:17	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Test(s): 8015M
Sample ID: **MW-7**
Lab ID: 2004-11-0381 - 6
Sampled: 11/10/2004 07:30
Extracted: 11/16/2004 09:01
Matrix: Water
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1900	50	ug/L	1.00	11/16/2004 19:44	Q2
Surrogate(s)						
o-Terphenyl	151.6	78-177	%	1.00	11/16/2004 19:44	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Test(s): 8015M
Sample ID: **IW-1**
Lab ID: 2004-11-0381 - 7
Sampled: 11/10/2004 08:15
Extracted: 11/16/2004 09:01
Matrix: Water
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1000	50	ug/L	1.00	11/16/2004 20:11	Q2
Surrogate(s)						
o-Terphenyl	150.6	78-177	%	1.00	11/16/2004 20:11	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	3511	Test(s):	8015M
Sample ID:	**IW-2**	Lab ID:	2004-11-0381 - 8
Sampled:	11/10/2004 08:45	Extracted:	11/16/2004 09:01
Matrix:	Water	QC Batch#:	2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1200	50	ug/L	1.00	11/16/2004 20:38	Q2
Surrogate(s)						
o-Terphenyl	156.3	78-177	%	1.00	11/16/2004 20:38	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	3511	Test(s):	8015M
Sample ID:	**IW-3**	Lab ID:	2004-11-0381 - 9
Sampled:	11/10/2004 08:30	Extracted:	11/16/2004 09:01
Matrix:	Water	QC Batch#:	2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	3600	100	ug/L	2.00	11/17/2004 16:32	Q2
Surrogate(s)						
o-Terphenyl	154.8	78-177	%	2.00	11/17/2004 16:32	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Sample ID: **IW-4**
Sampled: 11/10/2004 09:00
Matrix: Water

Test(s): 8015M
Lab ID: 2004-11-0381 - 10
Extracted: 11/16/2004 09:01
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	2800	50	ug/L	1.00	11/16/2004 21:32	Q2
Surrogate(s)						
o-Terphenyl	153.6	78-177	%	1.00	11/16/2004 21:32	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 3511
Sample ID: **IW-5**
Sampled: 11/10/2004 09:15
Matrix: Water

Test(s): 8015M
Lab ID: 2004-11-0381 - 11
Extracted: 11/16/2004 09:01
QC Batch#: 2004/11/16-03.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	15000	500	ug/L	10.00	11/17/2004 16:59	Q2
Surrogate(s)						
o-Terphenyl	NA	78-177	%	10.00	11/17/2004 16:59	S3

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 3511

Test(s): 8015M

Method Blank

Water

QC Batch # 2004/11/16-03.10

MB: 2004/11/16-03.10-001

Date Extracted: 11/16/2004 09:01

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	11/16/2004 13:52	
Surrogates(s)					
o-Terphenyl	139.3	78-177	%	11/16/2004 13:52	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 3511

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/16-03.10**

LCS 2004/11/16-03.10-002 Extracted: 11/16/2004 Analyzed: 11/16/2004 14:19
LCSD 2004/11/16-03.10-003 Extracted: 11/16/2004 Analyzed: 11/16/2004 14:46

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	622	595	680	91.5	87.5	4.5	60-150	25		
Surrogates(s)										
o-Terphenyl	1.53	1.52	1.25	122.7	121.4		78-177	0		

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Legend and Notes

Result Flag

Q2

Quantit. of unknown hydrocarbon(s) in sample based on diesel.

S3

Surrogate recovery not reportable due to required dilution.

SEVERN TRENT STL

Submission: 2004-11-0381

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	11/10/2004 08:00	Water	1
MW-2	11/10/2004 06:45	Water	2
MW-4	11/10/2004 07:15	Water	3
MW-5	11/10/2004 07:00	Water	4
MW-6	11/10/2004 07:45	Water	5
MW-7	11/10/2004 07:30	Water	6
IW-1	11/10/2004 08:15	Water	7
IW-2	11/10/2004 08:45	Water	8
IW-3	11/10/2004 08:30	Water	9
IW-4	11/10/2004 09:00	Water	10
IW-5	11/10/2004 09:15	Water	11

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-1**	Lab ID:	2004-11-0381 - 1
Sampled:	11/10/2004 08:00	Extracted:	11/16/2004 16:54
Matrix:	Water	QC Batch#:	2004/11/16-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	180	50	ug/L	1.00	11/16/2004 16:54	Q1
Benzene	0.68	0.50	ug/L	1.00	11/16/2004 16:54	
Toluene	ND	0.50	ug/L	1.00	11/16/2004 16:54	
Ethyl benzene	1.7	0.50	ug/L	1.00	11/16/2004 16:54	
Xylene(s)	0.52	0.50	ug/L	1.00	11/16/2004 16:54	
MTBE	ND	5.0	ug/L	1.00	11/16/2004 16:54	
Surrogate(s)						
Trifluorotoluene	94.6	58-124	%	1.00	11/16/2004 16:54	
4-Bromofluorobenzene-FID	100.6	50-150	%	1.00	11/16/2004 16:54	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-2**	Lab ID:	2004-11-0381 - 2
Sampled:	11/10/2004 06:45	Extracted:	11/18/2004 12:38
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	44000	10000	ug/L	200.00	11/18/2004 12:38	
Benzene	13000	100	ug/L	200.00	11/18/2004 12:38	
Toluene	4400	100	ug/L	200.00	11/18/2004 12:38	
Ethyl benzene	1600	100	ug/L	200.00	11/18/2004 12:38	
Xylene(s)	6000	100	ug/L	200.00	11/18/2004 12:38	
MTBE	ND	1000	ug/L	200.00	11/18/2004 12:38	
Surrogate(s)						
Trifluorotoluene	96.8	58-124	%	200.00	11/18/2004 12:38	
4-Bromofluorobenzene-FID	71.1	50-150	%	200.00	11/18/2004 12:38	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **MW-4**

Lab ID: 2004-11-0381 - 3

Sampled: 11/10/2004 07:15

Extracted: 11/18/2004 13:10

Matrix: Water

QC Batch#: 2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	87000	13000	ug/L	250.00	11/18/2004 13:10	
Benzene	15000	130	ug/L	250.00	11/18/2004 13:10	
Toluene	21000	130	ug/L	250.00	11/18/2004 13:10	
Ethyl benzene	3000	130	ug/L	250.00	11/18/2004 13:10	
Xylene(s)	16000	130	ug/L	250.00	11/18/2004 13:10	
MTBE	ND	1300	ug/L	250.00	11/18/2004 13:10	
Surrogate(s)						
Trifluorotoluene	113.5	58-124	%	250.00	11/18/2004 13:10	
4-Bromofluorobenzene-FID	78.2	50-150	%	250.00	11/18/2004 13:10	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-5**	Lab ID:	2004-11-0381 - 4
Sampled:	11/10/2004 07:00	Extracted:	11/18/2004 14:48
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/18/2004 14:48	
Benzene	ND	0.50	ug/L	1.00	11/18/2004 14:48	
Toluene	ND	0.50	ug/L	1.00	11/18/2004 14:48	
Ethyl benzene	ND	0.50	ug/L	1.00	11/18/2004 14:48	
Xylene(s)	ND	0.50	ug/L	1.00	11/18/2004 14:48	
MTBE	6.0	5.0	ug/L	1.00	11/18/2004 14:48	
Surrogate(s)						
Trifluorotoluene	111.6	58-124	%	1.00	11/18/2004 14:48	
4-Bromofluorobenzene-FID	76.8	50-150	%	1.00	11/18/2004 14:48	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-6**	Lab ID:	2004-11-0381 - 5
Sampled:	11/10/2004 07:45	Extracted:	11/18/2004 15:21
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/18/2004 15:21	
Benzene	ND	0.50	ug/L	1.00	11/18/2004 15:21	
Toluene	ND	0.50	ug/L	1.00	11/18/2004 15:21	
Ethyl benzene	ND	0.50	ug/L	1.00	11/18/2004 15:21	
Xylene(s)	ND	0.50	ug/L	1.00	11/18/2004 15:21	
MTBE	ND	5.0	ug/L	1.00	11/18/2004 15:21	
Surrogate(s)						
Trifluorotoluene	112.5	58-124	%	1.00	11/18/2004 15:21	
4-Bromofluorobenzene-FID	76.5	50-150	%	1.00	11/18/2004 15:21	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**MW-7**	Lab ID:	2004-11-0381 - 6
Sampled:	11/10/2004 07:30	Extracted:	11/18/2004 15:54
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	20000	5000	ug/L	100.00	11/18/2004 15:54	
Benzene	550	50	ug/L	100.00	11/18/2004 15:54	
Toluene	4200	50	ug/L	100.00	11/18/2004 15:54	
Ethyl benzene	920	50	ug/L	100.00	11/18/2004 15:54	
Xylene(s)	4000	50	ug/L	100.00	11/18/2004 15:54	
MTBE	ND	500	ug/L	100.00	11/18/2004 15:54	
Surrogate(s)						
Trifluorotoluene	109.3	58-124	%	100.00	11/18/2004 15:54	
4-Bromofluorobenzene-FID	79.9	50-150	%	100.00	11/18/2004 15:54	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**IW-1**	Lab ID:	2004-11-0381 - 7
Sampled:	11/10/2004 08:15	Extracted:	11/18/2004 16:26
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/18/2004 16:26	
Benzene	ND	0.50	ug/L	1.00	11/18/2004 16:26	
Toluene	1.8	0.50	ug/L	1.00	11/18/2004 16:26	
Ethyl benzene	ND	0.50	ug/L	1.00	11/18/2004 16:26	
Xylene(s)	2.5	0.50	ug/L	1.00	11/18/2004 16:26	
MTBE	ND	5.0	ug/L	1.00	11/18/2004 16:26	
Surrogate(s)						
Trifluorotoluene	101.4	58-124	%	1.00	11/18/2004 16:26	
4-Bromofluorobenzene-FID	73.8	50-150	%	1.00	11/18/2004 16:26	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**IW-2**	Lab ID:	2004-11-0381 - 8
Sampled:	11/10/2004 08:45	Extracted:	11/18/2004 16:59
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1200	250	ug/L	5.00	11/18/2004 16:59	Q1
Benzene	150	2.5	ug/L	5.00	11/18/2004 16:59	
Toluene	3.3	2.5	ug/L	5.00	11/18/2004 16:59	
Ethyl benzene	8.4	2.5	ug/L	5.00	11/18/2004 16:59	
Xylene(s)	6.2	2.5	ug/L	5.00	11/18/2004 16:59	
MTBE	62	25	ug/L	5.00	11/18/2004 16:59	
Surrogate(s)						
Trifluorotoluene	114.1	58-124	%	5.00	11/18/2004 16:59	
4-Bromofluorobenzene-FID	83.2	50-150	%	5.00	11/18/2004 16:59	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-3**

Lab ID: 2004-11-0381 - 9

Sampled: 11/10/2004 08:30

Extracted: 11/18/2004 09:54

Matrix: Water

QC Batch#: 2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	20000	2500	ug/L	50.00	11/18/2004 09:54	
Benzene	1200	25	ug/L	50.00	11/18/2004 09:54	
Toluene	180	25	ug/L	50.00	11/18/2004 09:54	
Ethyl benzene	1500	25	ug/L	50.00	11/18/2004 09:54	
Xylene(s)	1800	25	ug/L	50.00	11/18/2004 09:54	
MTBE	ND	250	ug/L	50.00	11/18/2004 09:54	
Surrogate(s)						
Trifluorotoluene	114.2	58-124	%	50.00	11/18/2004 09:54	
4-Bromofluorobenzene-FID	77.5	50-150	%	50.00	11/18/2004 09:54	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**IW-4**	Lab ID:	2004-11-0381 - 10
Sampled:	11/10/2004 09:00	Extracted:	11/18/2004 17:32
Matrix:	Water	QC Batch#:	2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	19000	5000	ug/L	100.00	11/18/2004 17:32	
Benzene	5500	50	ug/L	100.00	11/18/2004 17:32	
Toluene	580	50	ug/L	100.00	11/18/2004 17:32	
Ethyl benzene	820	50	ug/L	100.00	11/18/2004 17:32	
Xylene(s)	2400	50	ug/L	100.00	11/18/2004 17:32	
MTBE	ND	500	ug/L	100.00	11/18/2004 17:32	
Surrogate(s)						
Trifluorotoluene	109.9	58-124	%	100.00	11/18/2004 17:32	
4-Bromofluorobenzene-FID	75.5	50-150	%	100.00	11/18/2004 17:32	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **IW-5**

Lab ID: 2004-11-0381 - 11

Sampled: 11/10/2004 09:15

Extracted: 11/18/2004 18:04

Matrix: Water

QC Batch#: 2004/11/18-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	56000	10000	ug/L	200.00	11/18/2004 18:04	
Benzene	4500	100	ug/L	200.00	11/18/2004 18:04	
Toluene	12000	100	ug/L	200.00	11/18/2004 18:04	
Ethyl benzene	1900	100	ug/L	200.00	11/18/2004 18:04	
Xylene(s)	13000	100	ug/L	200.00	11/18/2004 18:04	
MTBE	ND	1000	ug/L	200.00	11/18/2004 18:04	
Surrogate(s)						
Trifluorotoluene	108.0	58-124	%	200.00	11/18/2004 18:04	
4-Bromofluorobenzene-FID	77.8	50-150	%	200.00	11/18/2004 18:04	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank

Water

QC Batch # 2004/11/16-01.05

MB: 2004/11/16-01.05-003

Date Extracted: 11/16/2004 09:01

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/16/2004 09:01	
Benzene	ND	0.5	ug/L	11/16/2004 09:01	
Toluene	ND	0.5	ug/L	11/16/2004 09:01	
Ethyl benzene	ND	0.5	ug/L	11/16/2004 09:01	
Xylene(s)	ND	0.5	ug/L	11/16/2004 09:01	
Surrogates(s)					
Trifluorotoluene	109.0	58-124	%	11/16/2004 09:01	
4-Bromofluorobenzene-FID	82.4	50-150	%	11/16/2004 09:01	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank | **Water** | **QC Batch # 2004/11/18-01.05**

MB: 2004/11/18-01.05-003

Date Extracted: 11/18/2004 08:11

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/18/2004 08:11	
Benzene	ND	0.5	ug/L	11/18/2004 08:11	
Toluene	ND	0.5	ug/L	11/18/2004 08:11	
Ethyl benzene	ND	0.5	ug/L	11/18/2004 08:11	
Xylene(s)	ND	0.5	ug/L	11/18/2004 08:11	
Surrogates(s)					
Trifluorotoluene	109.4	58-124	%	11/18/2004 08:11	
4-Bromofluorobenzene-FID	78.8	50-150	%	11/18/2004 08:11	

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/16-01.05**

LCS 2004/11/16-01.05-004 Extracted: 11/16/2004 Analyzed: 11/16/2004 09:34
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	54.6		50.0	109.2			77-123	20		
Toluene	52.6		50.0	105.2			78-122	20		
Ethyl benzene	56.9		50.0	113.8			70-130	20		
Xylene(s)	155		150	103.3			75-125	20		
Surrogates(s)										
Trifluorotoluene	566		500	113.2			58-124			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/16-01.05**

LCS 2004/11/16-01.05-005 Extracted: 11/16/2004 Analyzed: 11/16/2004 10:07
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	280		250	112.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	412		500	82.4			50-150			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/18-01.05**

LCS 2004/11/18-01.05-004 Extracted: 11/18/2004 Analyzed: 11/18/2004 08:44
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	54.6		50.0	109.2			77-123	20		
Toluene	52.9		50.0	105.8			78-122	20		
Ethyl benzene	53.1		50.0	106.2			70-130	20		
Xylene(s)	158		150	105.3			75-125	20		
Surrogates(s)										
Trifluorotoluene	558		500	111.6			58-124			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/18-01.05**

LCS 2004/11/18-01.05-005 Extracted: 11/18/2004 Analyzed: 11/18/2004 09:17
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	276		250	110.4			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	412		500	82.4			50-150			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/16-01.05**

MS/MSD

Lab ID: 2004-11-0296 - 003

MS: 2004/11/16-01.05-007 Extracted: 11/16/2004 Analyzed: 11/16/2004 11:28

Dilution: 1.00

MSD: 2004/11/16-01.05-008 Extracted: 11/16/2004 Analyzed: 11/16/2004 12:00

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	314	307	72.0	250	96.8	94.0	2.9	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	463	463		500	92.5	92.6		50-150			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/16-01.05**

MW-1 >> MS

Lab ID: 2004-11-0381 - 001

MS: 2004/11/16-01.05-015 Extracted: 11/16/2004 Analyzed: 11/16/2004 15:49

Dilution: 1.00

MSD: 2004/11/16-01.05-016 Extracted: 11/16/2004 Analyzed: 11/16/2004 16:21

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	54.1	55.1	0.685	50.0	106.8	108.8	1.9	65-135	20		
Toluene	50.7	51.7	ND	50.0	101.4	103.4	2.0	65-135	20		
Ethyl benzene	56.2	56.7	1.69	50.0	109.0	110.0	0.9	65-135	20		
Xylene(s)	153	155	1.47	150	101.0	102.4	1.4	65-135	20		
Surrogate(s)											
Trifluorotoluene	522	491		500	104.4	98.3		58-124			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/18-01.05**

IW-3 >> MS

Lab ID: 2004-11-0381 - 009

MS: 2004/11/18-01.05-007 Extracted: 11/18/2004 Analyzed: 11/18/2004 10:27
Dilution: 50.00

MSD: 2004/11/18-01.05-008 Extracted: 11/18/2004 Analyzed: 11/18/2004 11:00
Dilution: 50.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	3970	4140	1250	2500	108.8	115.6	6.1	65-135	20		
Toluene	2680	2870	183	2500	99.9	107.5	7.3	65-135	20		
Ethyl benzene	3910	3990	1500	2500	96.4	99.6	3.3	65-135	20		
Xylene(s)	9210	9980	1830	7500	98.4	108.7	9.9	65-135	20		
Surrogate(s)											
Trifluorotoluene	582	616		500	116.3	123.3		58-124			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/18-01.05**

IW-3 >> MS

Lab ID: 2004-11-0381 - 009

MS: 2004/11/18-01.05-009 Extracted: 11/18/2004 Analyzed: 11/18/2004 11:32

Dilution: 50.00

MSD: 2004/11/18-01.05-010 Extracted: 11/18/2004 Analyzed: 11/18/2004 12:05

Dilution: 50.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	32600	29700	19800	12500	102.4	79.2	25.6	65-135	20		R4
Surrogate(s)											
4-Bromofluorobenzene-FID	416	423		500	83.3	84.5		50-150			

Gas/BTEX by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: LIM

Received: 11/11/2004 16:33

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

R4

RPD exceeded method control limit; % recoveries within limits.

2004.11.0381

SEVERN TRENT STL

STL San Francisco Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
Email: sflogin@stl-inc.com

Reference #: 95625

Date 11/10/2004 Page 1 of 2

Report To

Attn: DAVE ALLEN
Company: AQUA SCIENCE ENG
Address: 208 WELLINGTON
Phone: Email:
Bill To: Sampled By: DA
Attn: Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH EPA 8015/8021 ☐ 8260B ☐ Gas w/ BTEX ☐ MTBE	Purgeable Aromatics BTEX EPA - ☐ 8021 ☐ 8260B	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	Fuel Tests EPA 8260B: ☐ Gas ☐ BTEX ☐ Five Oxygenates ☐ DCA, EDB ☐ Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	W.E.T (STLC) ☐ TCLP	Hexavalent Chromium ☐ pH (24h hold time for H_2O)	Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS ☐	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4				Number of Containers
MW-1	11/10/04	0800	W	HCL	X		X																				5
MW-2		0615	W		X		X																				5
MW-4		0715	W		X		X																				5
MW-5		0700	W		X		X																				5
MW-6		0745	W		X		X																				5
MW-7		0730	W		X		X																				5
IW-1		0815	W		X		X																				5
IW-2		0845	W		X		X																				5
IW-3		0830	W		X		X																				5
IW-4		0900	W		X		X																				5

Project Info.

Project Name: LIM
Project#:
PO#:
Credit Card#:

Sample Receipt

of Containers:
Head Space:
Temp: 2 °C
Conforms to record:

TAT: (5 Day) 72h 48h 24h Other:

Report: ☒ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF
Special Instructions / Comments: ☐ Global ID _____

*STL SF reports from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}.

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1700	Signature: [signature] Time: 1633	Signature: Time:
Printed Name: DAMIAN HRICKO Date: 11/10/04	Printed Name: [signature] Date: 11/10/04	Printed Name: Date:
Company: AST	Company: STL SF	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: [signature] Time: 0826	Signature: [signature] Time: 1633	Signature: Time:
Printed Name: [signature] Date: 11/11/04	Printed Name: M. WILLIAMSEN Date: 11/11/04	Printed Name: Date:
Company: STL SF	Company: STL SF	Company:

Rev 06/04

2004.11.0381

SEVERN TRENT STL

STL San Francisco Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
Email: sflogin@stl-inc.com

Reference #: _____

Date 11/10/2004 Page 2 of 2

Report To

Attn: DAVE ALLEN
Company: AQUA SCIENCE ENG
Address: 208 W EL PINTADO
Phone: Email:
Bill To:
Sampled By: DA
Attn: Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH EPA 8015/8021 ☐ 8260B ☐ Gas w/ BTEX & MTBE	Purgeable Aromatics BTEX EPA - ☐ 8021 ☐ 8260B	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	Fuel Tests EPA 8260B: ☐ Gas ☐ BTEX ☐ Five Oxygenates ☐ DCA, EDB ☐ Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS ☐	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4				Number of Containers
IW-5	11/10/04	0915	W	HCL	X		X																			5

Project Info.

Project Name: LIM
Project#:
PO#:
Credit Card#:

Sample Receipt

of Containers:
Head Space:
Temp: 2°C
Conforms to record:

TAT: (5 Day) 72h 48h 24h Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF
Special Instructions / Comments: ☐ Global ID _____

*STL SF reports from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}.

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: Time: 1700	Signature: Time:	Signature: Time:
Printed Name: DAMIAN HRICKA Date: 11/10/04	Printed Name: Date:	Printed Name: Date:
Company: AQE	Company: STL SF	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: Time: 0936	Signature: Time: 1633	Signature: Time:
Printed Name: Date:	Printed Name: M. VILLANUEVA Date: 11/11/04	Printed Name: Date:
Company: STL SF	Company: STL SF	Company:

Rev 06/04

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 10/25/04
208 West El Pintado Road		Date Received: 10/25/04
Danville, CA 94526	Client Contact: Dave Allen	Date Reported: 10/26/04
	Client P.O.:	Date Completed: 10/26/04

WorkOrder: 0410364

October 26, 2004

Dear Dave:

Enclosed are:

1). the results of 1 analyzed sample from your **#2808; LIM project,**

2). a QC report for the above sample

3). a copy of the chain of custody, and

4). a bill 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 10/25/04
208 West El Pintado Road		Date Received: 10/25/04
Danville, CA 94526	Client Contact: Dave Allen	Date Extracted: 10/25/04
	Client P.O.:	Date Analyzed: 10/25/04

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0410364

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	EFF-EBMUD-10-25	W	81,a	ND	0.82	3.4	1.0	5.6	1	112
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	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 McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 10/25/04
208 West El Pintado Road		Date Received: 10/25/04
Danville, CA 94526	Client Contact: Dave Allen	Date Extracted: 10/25/04
	Client P.O.:	Date Analyzed: 10/25/04

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0410364

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0410364-001B	EFF-EBMUD-10-25	W	220,g,b,d	1	96.0

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0410364

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 13698 Spiked Sample ID: 0410357-009A

Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	ND	60	96.8	80.7	18.2	92.1	97.7	5.97	70	130
MTBE	ND	10	97.7	103	5.31	94.5	98.6	4.19	70	130
Benzene	ND	10	96.7	101	4.12	95.5	102	6.19	70	130
Toluene	ND	10	94.3	96.8	2.66	90.6	97.4	7.15	70	130
Ethylbenzene	ND	10	98.5	101	2.38	94	100	6.35	70	130
Xylenes	ND	30	86.3	90.3	4.53	81.3	90	10.1	70	130
%SS:	115	10	104	105	1.01	108	108	0	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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 applicable or 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.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0410364

EPA Method: SW8015C Extraction: SW3510C BatchID: 13701 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	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	91.3	89.2	2.28	70	130
%SS:	N/A	2500	N/A	N/A	N/A	90	87	3.20	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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.

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.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0410364 **ClientID: ASED**

Report to:
Dave Allen
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526
TEL: (925) 820-9391
FAX: (925) 837-4853
ProjectNo: #2808; LIM
PO:

Bill to:
Accounts Payable
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

Requested TAT: 1 day
Date Received: 0:56 PM
Date Printed: 10/25/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0410364-001	EFF-EBMUD-10-25	Water	10/25/04 1:30:00	☐	A	B													

Test Legend:

1	G-MBTEX_W	2	TPH(D)_W	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by:

Comments:

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

ASE

04103604

RUSH

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

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE) D. Allen

PROJECT NAME LIM

JOB NO. 2828

ADDRESS 250 8th Street, Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
NEED RESULTS FAXED TO
837-4853 BY AM 10/26/04

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/ 5 OXY'S & LEAD SCAVANGERS (EPA 8260)	EDF	HOLD
EFF-EBMUD-10.25.04	10/25	1330	Water	4	X	X															

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
PRESERVATION ✓

APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

VOA	O&G	METALS	OTHER

RELINQUISHED BY: (signature)	(time)	RECEIVED BY: (signature)	(time)	RELINQUISHED BY: (signature)	(time)	RECEIVED BY LABORATORY: (signature)	(time)
D. ALLEN (printed name)	10/25/04 (date)	Rosa Venegas (printed name)	10/25 (date)	(printed name)	(date)	(printed name)	(date)
Company- ASE. INC.		Company- McCampbell Inc.		Company-		Company-	

COMMENTS:

TURN AROUND TIME
STANDARD 24Hr 48Hr 72Hr
OTHER:

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Aqua Science Engineers, Inc. 208 West El Pintado Road Danville, CA 94526	Client Project ID: #2808; LIM	Date Sampled: 10/26/04
		Date Received: 10/26/04
	Client Contact: Dave Allen	Date Reported: 10/26/04
	Client P.O.:	Date Completed: 10/26/04

WorkOrder: 0410382

October 26, 2004

Dear Dave:

Enclosed are:

1). the results of **1** analyzed sample from your **#2808; LIM project,**

2). a QC report for the above sample

3). a copy of the chain of custody, and

4). a bill 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Aqua Science Engineers, Inc.	Client Project ID: #2808; LIM	Date Sampled: 10/26/04
208 West El Pintado Road		Date Received: 10/26/04
Danville, CA 94526	Client Contact: Dave Allen	Date Extracted: 10/26/04
	Client P.O.:	Date Analyzed: 10/26/04

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0410382

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	FF-EBMUD-10-26-(	W	---	---	ND	ND	ND	ND	1	107
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	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 McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0410382

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 13708 Spiked Sample ID: 0410381-002A

Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex)£	ND	60	93.7	93.1	0.695	89.3	98.6	9.90	70	130
MTBE	ND	10	106	97.6	7.79	87.5	106	19.3	70	130
Benzene	ND	10	110	103	6.82	103	105	1.79	70	130
Toluene	ND	10	104	98	5.81	99.1	101	2.03	70	130
Ethylbenzene	ND	10	105	99.9	5.11	98.4	103	4.74	70	130
Xylenes	ND	30	95	89.7	5.78	86	91	5.65	70	130
%SS:	103	10	109	108	0.828	112	109	2.75	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

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 applicable or 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.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0410382 **ClientID: ASED**

Report to:
Dave Allen
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

TEL: (925) 820-9391
FAX: (925) 837-4853
ProjectNo: #2808; LIM
PO:

Bill to:
Accounts Payable
Aqua Science Engineers, Inc.
208 West El Pintado Road
Danville, CA 94526

Requested TAT: 1 day

Date Received: 10/26/04
Date Printed: 10/26/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0410382-001	EFF-EBMUD-10-26-04	Water	10/26/04	☐	A														

Test Legend:

1	G-MBTEX_W	2		3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Rosa Venegas

Comments: RUSH TAT

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

ASE L.10382

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

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE)

PROJECT NAME L M JOB NO. 2808

ADDRESS 250 8th St., Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
NEED RESULTS FAXED BY
10 a.m. 10/27/04

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	BTEX by 8021			HOLD
EFF-EBMUD-10.26.04	10/26	1520	Water	3														X			

GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
PRESERVATION

	VOAS	O&G	METALS	OTHER

APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

RELINQUISHED BY: (signature)	(time)	RECEIVED BY: (signature)	(time)	RELINQUISHED BY: (signature)	(time)	RECEIVED BY LABORATORY: (signature)	(time)	COMMENTS:
D. ALLEN (printed name)	1/26/04 (date)	Rosa Venegas (printed name)	4:23 pm (date)	(printed name)	(date)	(printed name)	(date)	TURN AROUND TIME: STANDARD 24Hr 48Hr 72Hr; OTHER:
Company-ASE, INC.		Company- McCampbell		Company-		Company-		

APPENDIX C

CalClean Data Report

CALCLEAN INC.

"A Partner in Protecting California's Waters"

November 19, 2004

Aqua Science Engineers Inc.
208 W. El Pintado
Danville, CA 94526

ATTN: MR. DAVE ALLEN

SITE: LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

RE: HIGH VACUUM DUAL PHASE EXTRACTION
AND TREATMENT EVENT REPORT

Dear Mr. Allen:

CalClean Inc. is submitting this High Vacuum Dual Phase Extraction and Treatment Event Report for the above referenced site. This report includes all activities performed during the dates of October 25 to November 9, 2004.

From October 25 to November 9, 2004, CalClean performed a 15-day high vacuum dual phase extraction (HVDPE) event on several onsite wells using a low-noise, truck-mounted 450-CFM high-vacuum liquid ring blower along with a Bay Area Air Quality Management District (BAAQMD) various locations permitted propane-fired thermal oxidizer (Plant No. 12568). This technology allows hydrocarbons to be simultaneously removed from the vadose zone, capillary fringe, and saturated soil zone. A high vacuum was applied for vapor extraction and drawdown of the groundwater table around the extraction wells, while vacuum and vapor flow rates were modified to optimize recovery of vapor, free-product (if any) and dissolved-phase hydrocarbons.

During the event, the high vacuum dual phase extraction (HVDPE) system was connected to various wells individually or in combination. Once a short-term test was performed on each extraction well, high vacuum dual phase extraction continued at various times in wells MW-3, IW-4 and IW-5. HVDPE activities were conducted for a total of 15 days during the HVDPE event.

Vapor samples were collected in Tedlar bags from each extraction well when first connected, and then again at the end of the event. Combined influent samples were also collected during the event. The laboratory results, listed in Table 1 and laboratory reports included in Attachment 1, indicate the following:

- The starting Total Petroleum Hydrocarbons as Gasoline (TPH-G) vapor concentrations for wells MW-3, IW-4, and IW-5 were 7,714 ppmv, 6,571 ppmv, and 26,856 ppmv, respectively. The ending TPH-G vapor concentrations were 9,000 ppmv, 1,500 ppmv, and 5,200 ppmv, respectively.

- The starting Benzene vapor concentrations for wells MW-3, IW-4, and IW-5 were 228 ppmv, 231 ppmv, and 1,318 ppmv, respectively. The ending Benzene vapor concentrations were 250 ppmv, 36 ppmv, and 150 ppmv, respectively

- The starting and ending Methyl tert-Butyl Ether (MtBE) vapor concentrations for MW-3, IW-4, and IW-5 were below the method detection limits.

The total equivalent amount of hydrocarbons recovered through vapor extraction during the 15-day event was 5,632.59 pounds (based on laboratory data), and 8,751.58 pounds (based on the Horiba field organic vapor analyzer data) with an average of 7,192.08 pounds. The cumulative tabulation of recovered hydrocarbons (based on laboratory data) is provided in Table 2. The cumulative tabulation of recovered hydrocarbons (based on the field organic vapor analyzer data) is provided in Table 3. These results indicate that dual-phase vacuum extraction using a mobile high-vacuum system is acting as an effective remedial technology at this site in reducing Total Petroleum Hydrocarbons as Gasoline and BTEX constituent concentrations in the vadose and saturated zone.

The total volume of hydrocarbon-affected groundwater recovered from the extraction wells during the HVDPE event was approximately 94,470 gallons. Approximately 4,500 gallons of extracted groundwater was beneficially reused as make-up water in the liquid-ring pump seal water system. The remaining 89,970 gallons of extracted water was treated onsite in a granular activated carbon canister system in accordance with the sewer discharge requirements for Wastewater Discharge Permit No. 50553801 issued on October 27, 2004 by the East Bay Municipal Utility District.

The following attachments are included to document the HVDPE event at the site:

Table 1	Results of Laboratory Analysis of Influent Vapor Samples
Table 2	High Vacuum Dual Phase Extraction Spreadsheet (using Lab Data)
Figure 1	Total Inlet HC Concentrations versus Time (15-Days, Using Lab Data)
Figure 2	Cumulative HC Recovered over 15 Days (using Lab Data)
Table 3	High Vacuum Dual Phase Extraction Data Spreadsheet (using Horiba Data)
Figure 3	Total Inlet HC Concentrations versus Time (15-Days, Using Horiba Data)
Figure 4	Cumulative HC Recovered over 15 Days (using Horiba Data)
Attachment 1	Laboratory Reports
Attachment 2	High Vacuum Dual Phase Extraction Field Data Sheets

It has been a pleasure working with you on this project. If you have any questions regarding this report, please contact us at (714) 734-9137 or via cell phone at (714) 936-2706.

Sincerely,

CALCLEAN INC.

Noel Shenoi
Principal Engineer

Attachments

Calc..an Inc.

1 of 1

RESULTS OF LABORATORY ANALYSIS OF VAPOR SAMPLES
Lim Property
Oakland, California

Sample ID/ Date	Date/Time Sampled	TPH-g (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	MTBE (ppmv)
MW-3	10/25/2004 1230	7,714	228*	93*	ND<23*	32*	ND<283*
MW-3	11/2/2004 1715	6,571	312*	476*	92*	346*	ND<71*
MW-3	11/9/2004 0830	9,000	250	300	36	140	ND<2.8
IW-4	11/2/2004 1600	6,571	231*	82*	28*	88*	ND<71*
IW-4	11/9/2004 0900	1,500	36	41	7.2	26	ND<1.4
IW-5	10/25/2004 1330	26,856	1318*	1376*	145*	485*	ND<283*
IW-5	11/2/2004 1730	6,285	238*	318*	74*	254*	ND<71*
IW-5	11/9/2004 0930	5,200	150	220	40	170	ND<7
COMBINED START	10/28/2004 1505	800	19*	29*	5*	18*	ND<0.15*
COMBINED	11/2/2004 1620	9,714	312*	ND<7	58*	180*	ND<71*
COMBINED	11/9/2004 0830	7,000	150	170	32	110	ND<2.8

Notes:

ppmv = parts per million by volume

TPH - g = total petroleum hydrocarbons - gasoline

*Samples analyzed by EPA 8021

MTBE = methyl tertiary butyl ether

All other samples analyzed by EPA 8260B

Ca. ..an Inc. Table 2

HIGH VACUUM DUAL PHASE EXTRACTION SPREADSHEET (Using Lab Data)

Lim Property, Oakland, CA

TIME	SYSTEM PARAMETERS			Hydrocarbon Recovery		
	Average System Vacuum (in of Hg)	Average Total System Inlet Flow (scfm)	Influent Concentrations Post-dilution* (ppmv)	(lbs)	(gal)	(Cumul. lbs)
10/25/2004 12:30	22	92	17,285	0.00	0.00	0
10/28/2004 15:05	22	74	800	1,252.61	200.50	1,252.61
11/2/2004 16:20	21	131	9,714	1,241.68	198.75	2,494.28
11/9/2004 8:30	21	134	7,000	3,138.30	502.33	5,632.59
	TOTAL HC RECOVERED* - LAB DATA			**5,632.59**	**901.57**	
	TOTAL HC RECOVERED - FIELD ANALYZER DATA**			**8,751.58**	**1,400.81**	
	Average HC Recovered* (Field Analyzer/Lab Data)**			**7,192.08**	**1,151.19**	

TOTAL GROUNDWATER RECOVERED	**94,470**

in of Hg = inches of mercury ppmv = parts per million by volume gal = gallons

scfm = standard cubic feet per minute lbs = pounds

* Concentration data based on laboratory data.

** Based on Horiba field analyzer data.

*** Average HC Recovered using Laboratory and Horiba data

Concentration for 10/25/04 is average of MW-3 and IW-5 Start concentrations

Figure 1

Total Inlet HC Concentrations vs Time (15 Days)

Lim Property, Oakland, CA - 10/25-11/9/04

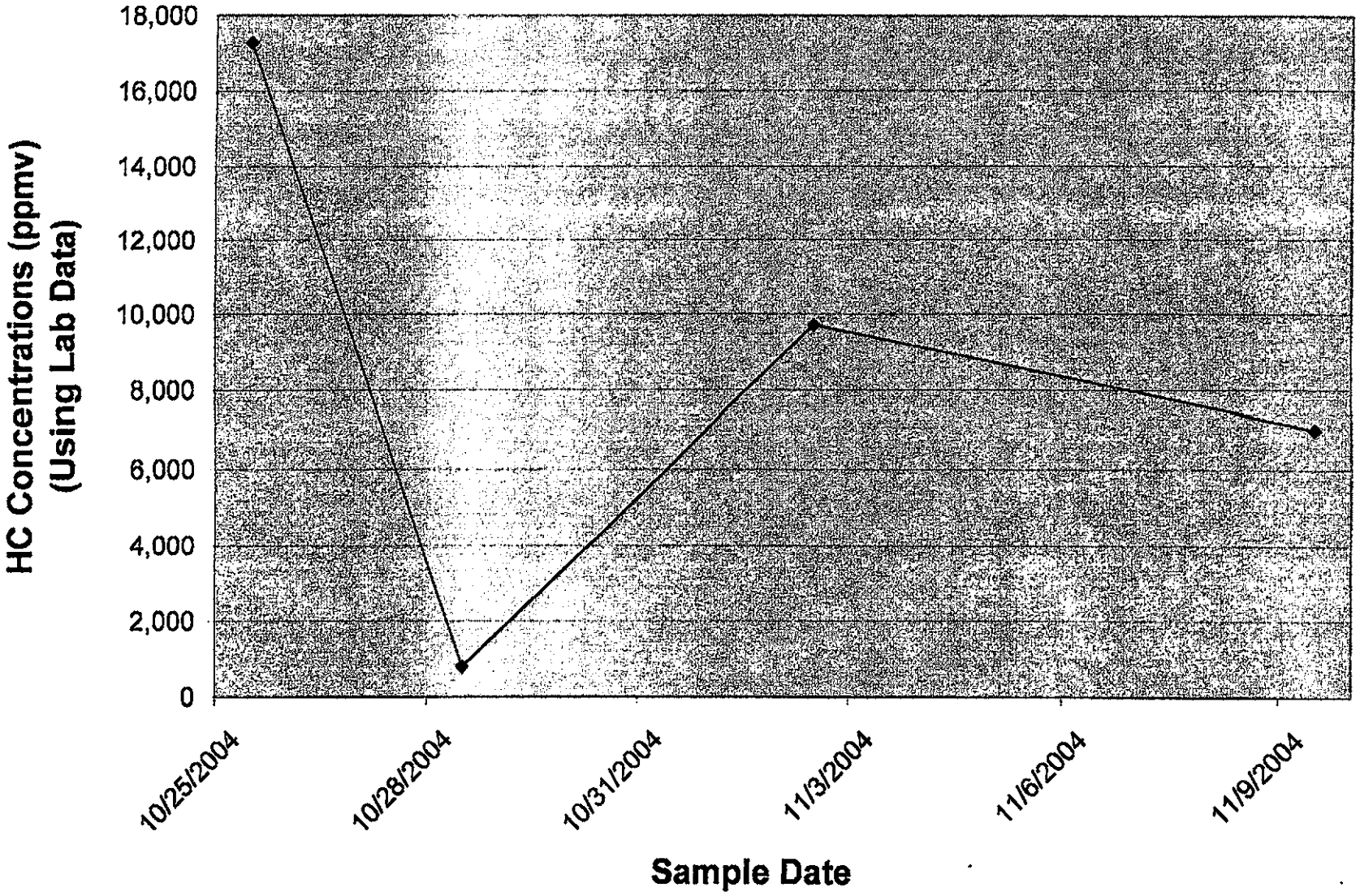
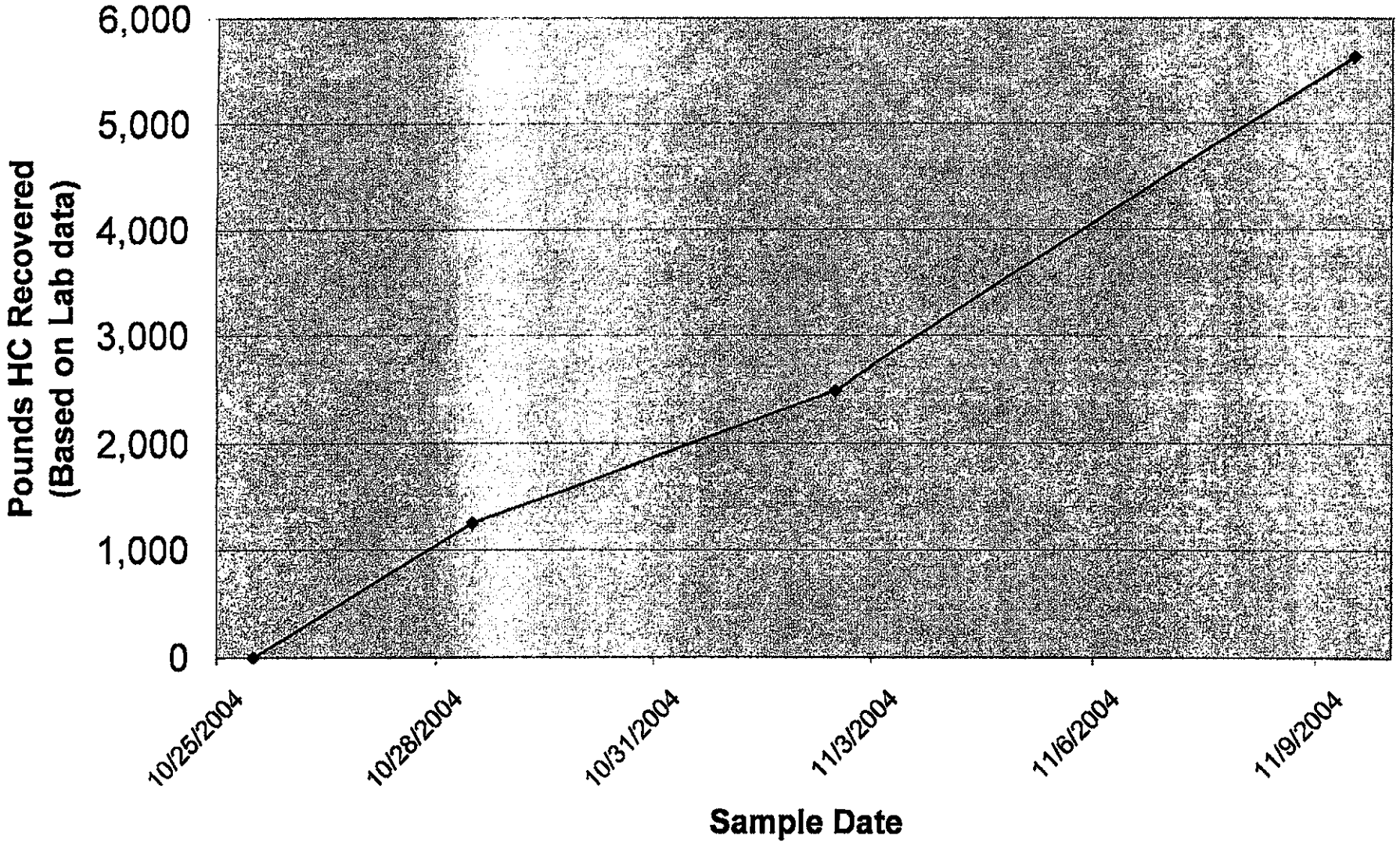


Figure 2
Cumulative HC Recovered Over 15 Days
Lim Property, Oakland, CA - 10/25-11/9/04



HIGH VACUUM DUAL PHASE EXTRACTION DATA SPREADSHEET (Using Field Data)
Lim Property, Oakland, CA

TIME	Extraction Well # MW-3 (Stinger Depth)	Extraction Well # IW-5 (Stinger Depth)	Extraction Well # IW-4 (Stinger Depth)	Extraction Well # (Stinger Depth)	Extraction Well # (Stinger Depth)	SYSTEM PARAMETERS				Hydrocarbon Recovery (using Horiba Data)		
						System Vacuum (in of Hg)	Total System Inlet Flow (scfm)	Influent Concentrations Post-dilution * (ppmv)	Effluent Concentrations (ppmv) *	(lbs)	(gal)	(Cumul. lbs)
10/25/2004 12:00	15.5'	15.5'				22	92	52,870		0.00	0.00	0
10/25/2004 13:00	15.5'	15.5'				22	90	56,350	18	67.66	10.83	67.66
10/25/2004 14:00	15.5'	15.5'				22	85	57,510		67.82	10.86	135.48
10/25/2004 15:00	15.5'	15.5'				22	83	54,750		64.19	10.28	199.67
10/25/2004 16:00	15.5'	15.5'				22	81	51,480		59.30	9.49	258.97
10/25/2004 17:00	15.5'	15.5'				22	79	48,870		54.65	8.75	313.62
10/25/2004 18:00	15.5'	15.5'				22	75	45,610		49.52	7.93	363.15
10/25/2004 19:00	15.5'	15.5'				22	77	43,240		45.97	7.36	409.12
10/25/2004 20:00	15.5'	15.5'				22	74	41,920		43.77	7.01	452.89
10/25/2004 21:00	15.5'	15.5'				22	78	39,880		42.32	6.77	495.21
10/25/2004 22:00	15.5'	15.5'				22	75	37,370		40.23	6.44	535.44
10/25/2004 23:00	15.5'	15.5'				22	77	35,640		37.77	6.05	573.21
10/26/2004 0:00	15.5'	15.5'				22	73	33,760		35.43	5.67	608.64
10/26/2004 1:00	15.5'	15.5'				22	79	31,940		33.99	5.44	642.63
10/26/2004 2:00	15.5'	15.5'				22	76	30,250		32.81	5.25	675.44
10/26/2004 3:00	15.5'	15.5'				22	78	29,400		31.27	5.00	706.71
10/26/2004 4:00	15.5'	15.5'				22	77	28,790		30.70	4.91	737.41
10/26/2004 5:00	15.5'	15.5'				22	70	27,910		28.37	4.54	765.78
10/26/2004 6:00	15.5'	15.5'				22	73	26,580		26.52	4.25	792.30
10/26/2004 7:00	15.5'	15.5'				22	75	25,920		26.45	4.23	818.75
10/26/2004 8:00	15.5'	15.5'				22	76	25,240		26.29	4.21	845.05
10/26/2004 9:00	15.5'	15.5'				22	73	24,880		25.42	4.07	870.46
10/26/2004 10:00	15.5'	15.5'				22	71	24,360		24.13	3.86	894.60
10/26/2004 11:00	15.5'	15.5'				22	74	23,970		23.85	3.82	918.45
10/26/2004 12:00	16'	16'				22	77	23,410		24.35	3.90	942.80
10/26/2004 16:00	16'	16'								94.33	15.10	1,037.14
10/26/2004 20:00	16'	16'								99.92	15.99	1,137.06
10/27/2004 0:00	16'	16'								88.38	14.15	1,225.44
10/27/2004 4:00	16'	16'								73.08	11.70	1,298.52
10/27/2004 8:00	18'	18'								83.75	13.40	1,382.26

HIGH VACUUM DUAL PHASE EXTRACTION DATA SPREADSHEET (Using Field Data)
Lim Property, Oakland, CA

TIME	Extraction Well # MW-3 (Stinger Depth)	Extraction Well # IW-5 (Stinger Depth)	Extraction Well # IW-4 (Stinger Depth)	Extraction Well # (Stinger Depth)	Extraction Well # (Stinger Depth)	SYSTEM PARAMETERS				Hydrocarbon Recovery (using Horiba Data)		
						System Vacuum (in of Hg)	Total System Inlet Flow (scfm)	Influent Concentrations Post-dilution * (ppmv)	Effluent Concentrations (ppmv) *	(lbs)	(gal)	(Cumul. lbs)
10/27/2004 12:00	18'	18'				22	75	24,210		92.96	14.88	1,475.23
10/27/2004 16:00	18'	18'				22	71	23,660		89.45	14.32	1,564.67
10/27/2004 20:00	18'	18'				22	74	22,030		84.79	13.57	1,649.46
10/28/2004 0:00	18'	18'				22	76	21,270		83.12	13.31	1,732.58
10/28/2004 4:00	18'	18'				22	75	20,170		80.08	12.82	1,812.67
10/28/2004 8:00	18'	18'				22	73	18,730		73.68	11.79	1,886.35
10/28/2004 12:00	19'	19'				22	77	17,980		70.47	11.28	1,956.82
10/28/2004 16:00	19'	19'				22	74	17,250		68.08	10.90	2,024.90
10/28/2004 20:00	19'	19'				22	75	16,790		64.91	10.39	2,089.81
10/29/2004 0:00	19'	19'				22	72	17,340		64.21	10.28	2,154.02
10/29/2004 4:00	19'	19'				22	77	16,850		65.20	10.44	2,219.22
10/29/2004 8:00	19'	19'				22	73	15,770		62.62	10.02	2,281.84
10/29/2004 12:00	20'	20'				22	76	17,560		63.56	10.17	2,345.40
10/29/2004 16:00	20'	20'				22	77	18,170		69.96	11.20	2,415.36
10/29/2004 20:00	20'	20'				22	74	18,910		71.66	11.47	2,487.02
10/30/2004 0:00	20'	20'				22	78	18,420		72.62	11.62	2,559.64
10/30/2004 4:00	20'	20'				22	75	17,970		71.26	11.41	2,630.90
10/30/2004 8:00	20'	20'				22	71	17,430		66.15	10.59	2,697.04
10/30/2004 12:00	20'	20'				22	74	17,070		64.02	10.25	2,761.06
10/30/2004 16:00	20'	20'				22	76	17,250		65.88	10.55	2,826.95
10/30/2004 20:00	20'	20'				22	76	16,720		66.08	10.58	2,893.03
10/31/2004 0:00	20'	20'				22	72	16,190		62.34	9.98	2,955.37
10/31/2004 4:00	20'	20'				22	74	15,660		59.51	9.53	3,014.88
10/31/2004 8:00	20'	21'				22	77	14,820		58.90	9.43	3,073.78
10/31/2004 12:00	20'	21'				22	78	14,350		57.86	9.26	3,131.65
10/31/2004 16:00	20'	21'				22	76	13,680		55.24	8.84	3,186.89
10/31/2004 20:00	20'	21'				22	73	12,950		50.78	8.13	3,237.67
11/1/2004 0:00	20'	21'				22	77	12,370		48.61	7.78	3,286.28
11/1/2004 4:00	20'	21'				22	75	11,940		47.29	7.57	3,333.57
11/1/2004 8:00	20'	21'				22	72	11,460		44.02	7.05	3,377.59

HIGH VACUUM DUAL PHASE EXTRACTION DATA SPREADSHEET (Using Field Data)
Lim Property, Oakland, CA

TIME	Extraction Well # MW-3 (Stinger Depth)	Extraction Well # IW-5 (Stinger Depth)	Extraction Well # IW-4 (Stinger Depth)	Extraction Well # (Stinger Depth)	Extraction Well # (Stinger Depth)	SYSTEM PARAMETERS				Hydrocarbon Recovery (using Horiba Data)		
						System Vacuum (in of Hg)	Total System Inlet Flow (scfm)	Influent Concentrations Post-dilution * (ppmv)	Effluent Concentrations (ppmv) *	(lbs)	(gal)	(Cumul. lbs)
11/1/2004 12:00	20'	21'				22	74	11,140		42.23	6.76	3,419.82
11/1/2004 16:00	20'	21'				22	111	24,680		84.81	13.57	3,504.63
11/1/2004 20:00	20'	21'				22	107	24,040		135.93	21.76	3,640.56
11/2/2004 0:00	20'	21'				21	129	23,710		144.22	23.08	3,784.78
11/2/2004 4:00	20'	21'				21	131	22,450		153.60	24.59	3,938.38
11/2/2004 8:00	20'	22'				21	134	21,520		149.12	23.87	4,087.50
11/2/2004 12:00	20'	22'	open IW-4			21	129	22,540		148.30	23.74	4,235.80
11/2/2004 16:00	20'	22'	1'			21	131	23,190		152.17	24.36	4,387.97
11/2/2004 20:00	20'	22'	1'			21	133	22,460		154.24	24.69	4,542.21
11/3/2004 0:00	20'	22'	1'			21	128	22,030		148.61	23.79	4,690.82
11/3/2004 4:00	20'	22'	1'			21	130	21,840		144.85	23.19	4,835.67
11/3/2004 8:00	20'	22'	1'			21	127	21,570		142.78	22.85	4,978.45
11/3/2004 12:00	20'	22'	1'			21	131	19,250		134.78	21.57	5,113.24
11/3/2004 16:00	20'	22'	1'			21	134	18,780		128.98	20.64	5,242.21
11/3/2004 20:00	20'	22'	1'			21	132	18,210		125.92	20.16	5,368.14
11/4/2004 0:00	20'	22'	1'			21	129	17,830		120.38	19.27	5,488.52
11/4/2004 4:00	20'	22'	1'			21	127	17,470		115.65	18.51	5,604.18
11/4/2004 8:00	20'	22'	1'			21	130	16,950		113.21	18.12	5,717.39
11/4/2004 12:00	20'	22'	1'			21	132	17,280		114.78	18.37	5,832.16
11/4/2004 16:00	20'	22'	1'			21	130	16,810		114.31	18.30	5,946.47
11/4/2004 20:00	20'	22'	1'			21	128	16,470		109.89	17.59	6,056.36
11/5/2004 0:00	20'	22'	1'			21	127	16,060		106.16	16.99	6,162.52
11/5/2004 4:00	20'	22'	1'			21	132	16,340		107.40	17.19	6,269.92
11/5/2004 8:00	20'	22'	1'			21	129	16,960		111.23	17.80	6,381.15
11/5/2004 12:00	20'	22'	1'			21	131	15,650		108.51	17.37	6,489.66
11/5/2004 16:00	20'	22'	1'			21	129	14,440		100.12	16.03	6,589.78
11/5/2004 20:00	20'	22'	1'			21	130	14,870		97.15	15.55	6,686.94
11/6/2004 0:00	20'	22'	1'			21	126	14,430		96.00	15.37	6,782.93
11/6/2004 4:00	20'	22'	1'			21	128	14,970		95.57	15.30	6,878.51
11/6/2004 8:00	20'	22'	1'			21	129	14,720		97.65	15.63	6,976.16

HIGH VACUUM DUAL PHASE EXTRACTION DATA SPREADSHEET (Using Field Data)
Lim Property, Oakland, CA

TIME	Extraction Well # MW-3 (Stinger Depth)	Extraction Well # IW-5 (Stinger Depth)	Extraction Well # IW-4 (Stinger Depth)	Extraction Well # (Stinger Depth)	Extraction Well # (Stinger Depth)	SYSTEM PARAMETERS: System Vacuum (in of Hg)	Total System Inlet Flow (scfm)	Influent Concentrations Post-dilution * (ppmv)	Effluent Concentrations (ppmv) *	Hydrocarbon Recovery (using Horiba Data): (lbs)	(gal)	(Cumul. lbs)
11/6/2004 12:00	20'	22'	1'			21	132	14,290		96.90	15.51	7,073.06
11/6/2004 16:00	20'	22'	1'			21	133	14,030		96.05	15.37	7,169.11
11/6/2004 20:00	20'	22'	1'			21	128	13,950		93.46	14.96	7,262.57
11/7/2004 0:00	20'	22'	1'			21	126	13,810		90.24	14.44	7,352.81
11/7/2004 4:00	20'	22'	1'			21	127	13,680		89.01	14.25	7,441.82
11/7/2004 8:00	20'	22'	1'			21	129	13,410		88.76	14.21	7,530.58
11/7/2004 12:00	20'	22'	1'			21	133	13,860		91.44	14.64	7,622.02
11/7/2004 16:00	20'	22'	1'			21	128	14,070		93.29	14.93	7,715.31
11/7/2004 20:00	20'	22'	1'			21	129	14,140		92.79	14.85	7,808.10
11/8/2004 0:00	20'	22'	1'			21	127	14,380		93.44	14.96	7,901.54
11/8/2004 4:00	20'	22'	1'			21	129	14,490		94.59	15.14	7,996.12
11/8/2004 8:00	20'	22'	1'			21	131	14,710		97.16	15.55	8,093.29
11/8/2004 12:00	20'	22'	1'			21	133	14,550		98.86	15.82	8,192.15
11/8/2004 16:00	20'	22'	1'			21	129	14,380		97.01	15.53	8,289.15
11/8/2004 20:00	20'	22'	1'			21	127	14,220		93.70	15.00	8,382.85
11/9/2004 0:00	20'	22'	1'			21	130	13,940		92.62	14.83	8,475.48
11/9/2004 4:00	20'	22'	1'			21	128	13,860		91.79	14.69	8,567.27
11/9/2004 8:00	20'	22'	1'			21	131	13,790		91.65	14.67	8,658.92
11/9/2004 12:00	20'	22'	1'			21	134	13,530		92.66	14.83	8,751.58

Total Hydrocarbons Recovered	**8,751.58**	**1,400.81**
Total Liquid Recovered		**94,470**

Comments: Manual dilution was partially opened at the start of the event to prevent high temperature shutdown.

in of Hg = inches of mercury scfm = standard cubic feet per minute gal = gallons lbs = pounds

* Concentrations based on Horiba MEXA 324-JU field organic vapor analyzer, calibrated as hexane

Figure 3
Total Inlet HC Concentrations vs Time (15 Days)
Lim Property, Oakland, CA - 10/25-11/9/04

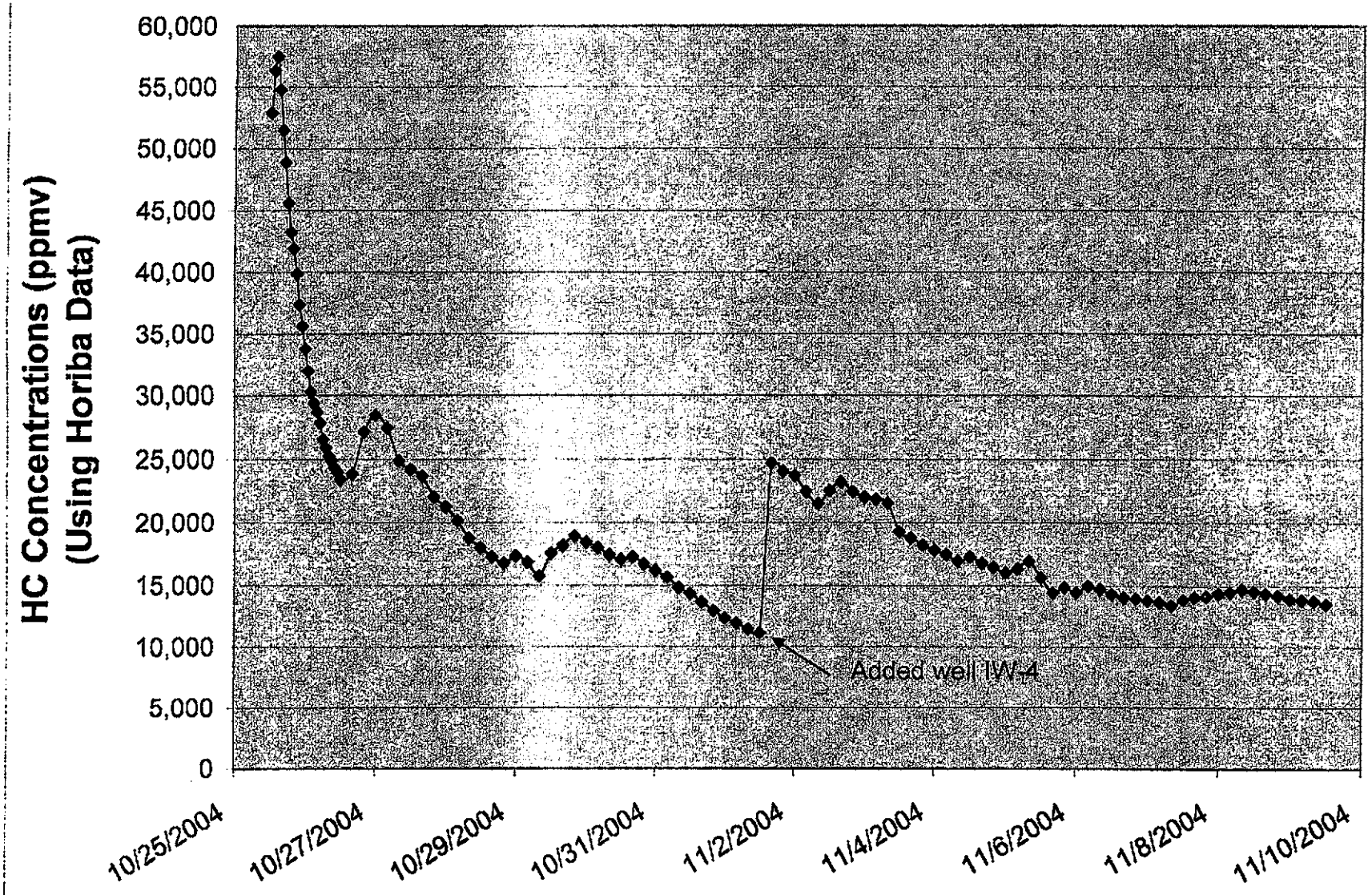
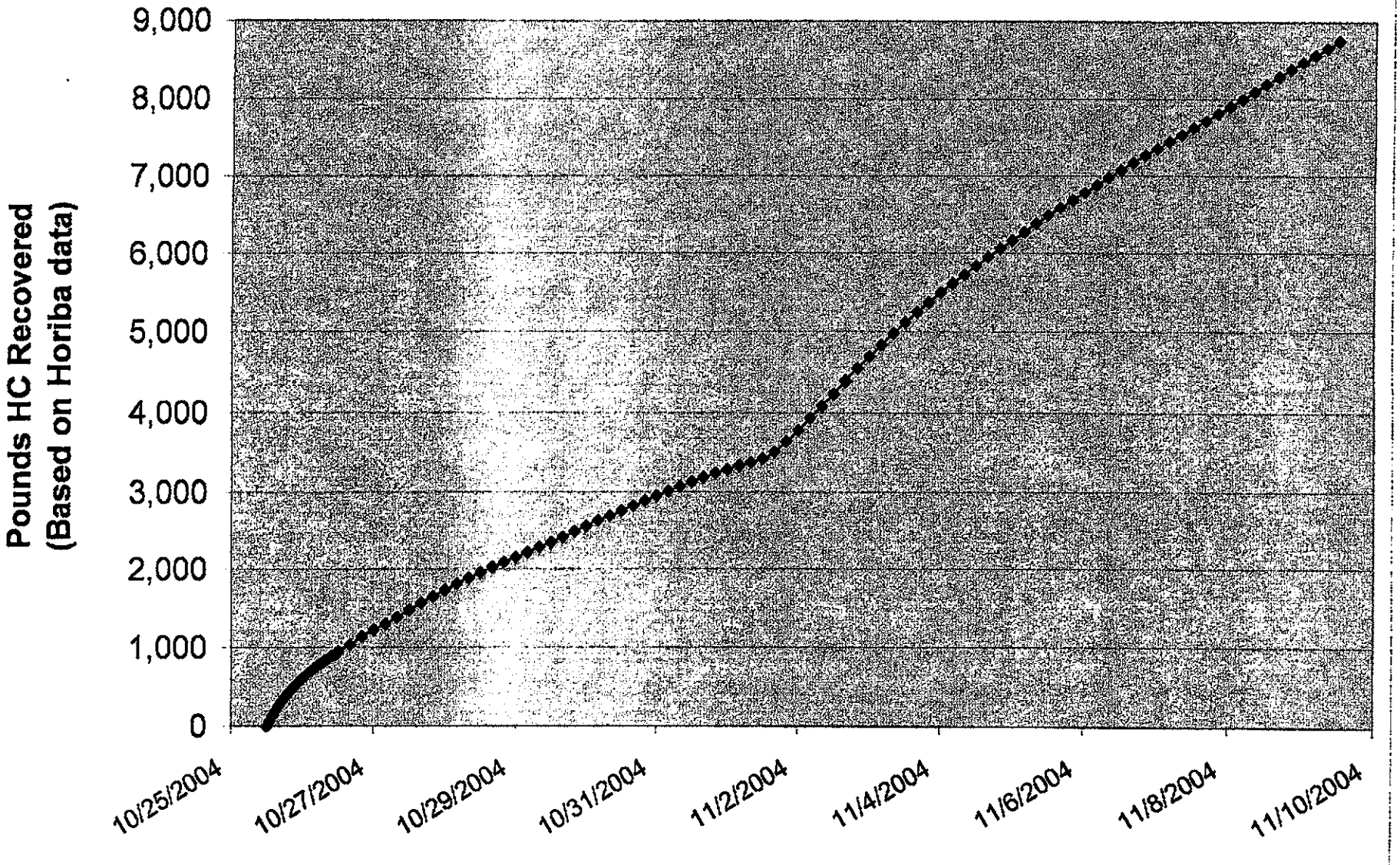


Figure 4
Cumulative HC Recovered Over 15 Days
Lim Property, Oakland, CA - 10/25-11/9/04



ATTACHMENT 1

LABORATORY REPORTS

ATTACHMENT 2

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM
FIELD DATA SHEETS

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALSCAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10/25/2004 Page 1A of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		15.21	
Screen Interval				TOTAL DEPTH	21.50		23.50													
Time 10/25	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)			VAC	D_{TW}	VAC	D_{TW}	VAC	D_{TW}	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
1200	22	92	1425	52870	E	15.5	E	15.5												
1300	22	90	1422	56350					1.15		0.98		0.00		0.00		0.00		0.00	BLOCKED
1400	22	85	1421	57510					1.17	14.89	0.97	14.93	0.00	15.31	0.00	15.11	0.00	16.31	0.00	BLK
1500	22	83	1410	54750					1.18	14.95	0.99	15.07	Ø	15.37	Ø	15.14	Ø	16.27	Ø	BLK
1600	22	81	1402	51480					1.15	15.04	0.98	15.15	Ø	15.40	Ø	15.16	Ø	16.21	Ø	BLK
1700	22	79	1401	48870					1.17	15.10	0.97	15.21	Ø	15.44	Ø	15.19	Ø	16.18	Ø	BLK
1800	22	75	1401	45610					1.19	15.17	0.98	15.29	Ø	15.48	Ø	15.21	Ø	16.20	Ø	BLK
1900	22	77	1402	43240					1.21	15.22	0.99	15.36	Ø	15.51	Ø	15.23	Ø	16.22	Ø	15.27
2000	22	74	1402	41920					1.24	15.30	1.00	15.42	Ø	15.55	Ø	15.25	Ø	16.25	Ø	15.28
2100	22	78	1400	39880					1.28	15.35	1.01	15.37	Ø	15.58	Ø	15.27	Ø	16.27	Ø	15.28
2200	22	75	1401	37370					1.31	15.41	1.01	15.31	Ø	15.62	Ø	15.30	Ø	16.29	Ø	15.29
2300	22	77	1400	35640					1.34	15.37	1.02	15.25	Ø	15.60	Ø	15.31	Ø	16.30	Ø	15.30
2400	22	73	1400	33760					1.37	15.35	1.04	15.20	Ø	15.58	Ø	15.31	Ø	16.32	Ø	15.32
0100	22	79	1400	31940					1.40	15.32	1.10	15.11	Ø	15.57	Ø	15.31	Ø	16.34	Ø	15.35
0200	22	76	1401	30250					1.44	15.31	1.12	15.01	Ø	15.58	Ø	15.31	Ø	16.35	Ø	15.34
0300	22	78	1401	29400					1.47	15.31	1.17	14.89	Ø	15.58	Ø	15.32	Ø	16.37	Ø	15.34
0400	22	77	1400	28790					1.50	15.30	1.24	14.73	Ø	15.57	Ø	15.32	Ø	16.40	Ø	15.35
0500	22	70	1400	27910					1.54	15.29	1.28	14.65	Ø	16.57	Ø	15.32	Ø	16.43	Ø	15.35
0600	22	73	1400	26580					1.58	15.29	1.30	14.60	Ø	15.57	Ø	15.32	Ø	16.46	Ø	15.35
0700	22	75	1400	25920					1.61	15.27	1.32	14.54	Ø	15.56	Ø	15.32	Ø	16.49	Ø	15.35
0800	22	76	1401	25240					1.63	15.27	1.31	14.51	Ø	15.56	Ø	15.31	Ø	16.49	-BL	KD —
0900	22	73	1401	24880					1.64	15.28	1.31	14.53	Ø	15.57	Ø	15.32	Ø	16.50	-BL	KD —
1000	22	71	1401	24360					1.64	15.29	1.32	14.54	Ø	15.58	Ø	15.34	Ø	16.52	-BL	KD —
1100	22	74	1400	23970					1.66	15.31	1.32	14.55	Ø	15.59	Ø	15.35	Ø	16.54	-BL	KD —

Comments: 10/25 - TOOK START AIR VAPOR SAMPLES OF MW-3 @ 1400 AND IW-5 @ 1430

* TAKE INDIVIDUAL AND COMBINED AIR VAPOR SAMPLES EVERY 3 DAYS!! : START WATER METER 352200 :

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CAL ANN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10 /26/ 2004 Page 2A of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		15.21	
Screen Interval					21.50		23.50													
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)			VAC.	D_{TW}	VAC	D_{TW}	VAC	D_{TW}	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
10/26					E	16'	E	16'												
1200	22	77	1401	23410					1.69	15.33	1.34	14.55	Ø	15.61	Ø	15.38	Ø	16.55	— BL	KD —
1600	23	79	1402	23840																
2000	22	74	1401	27190		V		V												
2400	26	50	1401	28500																
10/27																				
0400	26	52	1400	27480																
0800	22	73	1401	24870	E	18'	E	18'									Ø	16.69		
1200	22	75	1401	24210					2.40	15.49	1.50	15.10	Ø	15.77	Ø	15.51				
1600	22	71	1401	23660																
2000	22	74	1401	22030																
2400	22	76	1400	21270																
10/28																				
0400	22	75	1400	20170																
0800	22	73	1400	18730					2.70	15.71	1.71	15.65	Ø	16.02	Ø	15.74	Ø	16.97		
1200	22	77	1402	17980		19'		19'												
1600	22	74	1400	17250																
2000	22	75	1400	16790																
2400	22	72	1401	17340																

Comments:

* V = VAPOR EXTRACTION ONLY

10/26 - PULLED UP STINGERS AND BEGAN EXTRACTING VAPORS @ 2000

10/27 - DROPPED STINGERS AND BEGAN EXTRACTING GROUNDWATER @ 0945

10/28 - TOOK COMBINED VAPOR SAMPLE @ 1500

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CAL CLEAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10 / 25 / 2004 Page 18 of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-B4		Well#2: MW-5		Well #3: MW-6		Well #4: MW-7		Well #5:		Well #6:		Well #7:		Well #8:	
Initial Depth to Groundwater					15.61		15.46		15.74		15.98									
Screen Interval																				
Time 10/25	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)	VAC	Stinger Depth (feet)	VAC	D_{TW}	VAC	D_{TW}	VAC	D_{TW}			Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
1300					0.00		0.00		0.00		0.00									
1400					0.00	15.86	0.00	15.48	0.00	15.95	0.00	16.17								
1500					Ø	15.97	Ø	15.52	Ø	16.09	Ø	16.30								
1600					Ø	BLOCKED	Ø	15.56	Ø	16.21	Ø	16.45								
1700					Ø	BLKD	Ø	15.61	Ø	16.32	Ø	16.57								
1800					Ø	BLKD	Ø	15.64	Ø	16.47	Ø	16.63								
1900					Ø	16.42	Ø	BLK	Ø	16.60	Ø	16.71								
2000					Ø	16.49	Ø	15.73	Ø	16.72	Ø	16.79								
2100					Ø	16.55	Ø	15.79	Ø	16.81	Ø	16.85								
2200					Ø	16.53	Ø	15.81	Ø	16.79	Ø	16.84								
2300					Ø	16.51	Ø	15.80	Ø	16.74	Ø	16.79								
2400					Ø	16.50	Ø	15.77	Ø	16.70	Ø	16.71								
10/26 0100					Ø	16.46	Ø	15.75	Ø	16.65	Ø	16.65								
0200					Ø	16.41	Ø	15.72	Ø	16.60	Ø	16.60								
0300					Ø	16.34	Ø	15.69	Ø	16.51	Ø	16.54								
0400					Ø	16.27	Ø	15.67	Ø	16.45	Ø	16.50								
0500					Ø	16.22	Ø	15.65	Ø	16.40	Ø	16.46								
0600					Ø	16.19	Ø	15.63	Ø	16.36	Ø	14.42								
0700					Ø	16.15	Ø	15.60	Ø	16.30	Ø	16.37								
0800					Ø	16.14	Ø	15.61	Ø	16.30	Ø	16.35								
0900					-BL	KD-	Ø	15.62	Ø	16.32	-BL	KD-								
1000					-BL	KD-	Ø	15.63	Ø	16.31	-BL	KD-								
1100					-BL	KD-	Ø	15.65	Ø	16.36	-BL	KD-								
1200					-BL	KD-	Ø	15.67	Ø	16.38	-BL	KD-								

Comments:

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALSCAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10/26/2004 Page 2B of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: MW-5		Well #3: MW-6		Well #4: MW-7		Well #5:		Well #6:		Well #7:		Well #8:	
Initial Depth to Groundwater					15.61		15.46		15.74		15.98									
Screen Interval																				
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)	VAC	Stinger Depth (feet)	VAC	D_{TW}	VAC	D_{TW}	VAC	D_{TW}			Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
10/26	1200																			
10/27	1200				0	16.35	0	15.74	0	16.40	0	16.43								
10/28	1200				0	16.61	0	16.01	0	16.64	0	16.79								
10/29	1200				0	16.81	0	16.18	0	16.77	-BL	KD →								
10/30	1200				0	16.94	0	16.26	0	16.86	0	16.97								
10/31	1200				0	17.09	0	16.34	0	16.99	-BL	KD →								
11/01	1200				0	17.17	0	16.40	0	17.07	0	17.13								
11/02	1200				0	17.25	0	16.48	0	17.13	0	17.25								
11/03	1200				0	17.33	0	16.55	0	17.21	0	17.32								
11/04	1200				0	17.40	0	16.62	0	17.27	0	17.39								
11/05	1200				0	17.44	0	16.67	0	17.31	0	17.42								
11/06	1200				0	17.49	0	16.74	0	17.35	0	17.47								
11/07	1200				0	17.54	0	16.80	0	17.39	0	17.51								
11/08	1200				0	17.59	0	16.88	0	17.42	0	17.55								
11/09	1200				0	17.65	0	16.96	0	17.46	0	17.62								

Comments:

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALSCAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10/29/2004 Page 3 of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		15.21	
Screen Interval					24.50		23.50													
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)			VAC	D_{TW}	VAC	D_{TW}	VAC	D_{TW}	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
10/29					E	19'	E	19'												
0400	22	77	1401	16860																
0800	22	73	1400	15770																
1200	22	76	1400	17560		20'		20'	2.95	16.09	2.07	15.90	Ø	16.22	Ø	15.94	Ø	17.09	-BL	KD-
1600	22	77	1402	18170																
2000	22	74	1400	18910																
2400	22	78	1400	18420																
10/30																				
0400	22	75	1400	17970																
0800	22	71	1400	17430																
1200	22	74	1401	17070					3.19	16.36	2.29	16.17	Ø	16.38	Ø	16.10	Ø	17.20	0	16.18
1600	22	76	1401	17250																
2000	22	76	1406	16720																
2400	22	72	1400	16190																
10/31																				
0400	22	74	1400	15660																
0800	22	77	1400	14820				21'	3.37	16.63	2.40	16.39	Ø	16.52	Ø	16.21	Ø	17.29	-BL	KD-
1200	22	78	1401	14350																
1600	22	76	1401	13680																
2000	22	73	1400	12950																
2400	22	77	1401	12370																

Comments:

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALEAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 11 / 1 / 2004 Page 4 of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		15.21	
Screen Interval					21.50		23.50													
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)			VAC	D_{TW}	VAC	D_{TW}	VAC	D_{TW}	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
11/1					E	20'	E	21'												
0400	22	75	1400	11940																
0800	22	72	1400	11460																
1200	22	74	1402	11140	5560	PPMV	12150	PPMV	3.45	16.87	2.51	16.52	Ø	16.70	Ø	16.34	Ø	17.40	Ø	16.59
1600	22	111	1400	24680					E	Vapor Extr.										
2000	22	107	1400	24040					29140	PPMV										
2400	21	129	1401	25710																
11/2																				
0400	21	131	1401	22950																
0800	21	134	1401	21520				22'												
1200	21	129	1400	22540							2.64	16.79	Ø	16.84	Ø	16.41	Ø	17.47	Ø	16.71
1600	21	131	1400	23190																
2000	21	133	1400	22460																
2400	21	128	1400	22030																
11/3																				
0400	21	130	1400	21840																
0800	21	127	1400	21570							2.71	17.04	Ø	17.05	Ø	16.52	Ø	17.55	Ø	16.88
1200	21	131	1402	19250																
1600	21	134	1400	18780																
2000	21	132	1400	18210																
2400	21	129	1401	17830																

Comments: 11/1 – Took a Combined Vapor Sample @ 1145 and an Individual Vapor Sample of MW-3 @ 1215 and IW-5 @ 1245. Start Sample of IW-4 @ 1600 PPMV of 29140. A Combined Sample @ 1620. Consultants Came by @ 1700 Took samples of IW-5 & MW-3

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALEAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 11 / 4 / 2004 Page 5 of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		15.21	
Screen Interval				TOTAL DEPTH	21.50		23.50													
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)					VAC	DTW	VAC	DTW	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
11/4					E	20'	E	22'	E	✓										
0400	21	127	1401	17470																
0800	21	130	1400	16950																
1200	21	132	1400	17280							2.68	17.17	0	17.11	0	16.60	0	17.63	0	16.95
1600	21	130	1400	16810																
2000	21	128	1401	16470																
2400	21	127	1400	16060																
11/5																				
0400	21	132	1401	16340																
0800	21	129	1400	16960																
1200	21	131	1400	15650							3.75	17.21	0	17.16	0	16.64	0	17.67	0	16.99
1600	21	129	1401	14440																
2000	21	130	1400	14870																
2400	21	126	1400	14430																
11/6																				
0400	21	128	1400	14970																
0800	21	129	1401	14720																
1200	21	132	1400	14290							4.51	17.26	0	17.20	0	16.67	0	17.70	0	17.04
1600	21	133	1400	14030																
2000	21	128	1406	13950																
2400	21	126	1401	13810																

Comments:

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CALEAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 11/7/2004 Page 6 of 6

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2: IW-5		Well #3: IW-4		Well #4: IW-3		Well #5: IW-2		Well #6: IW-1		Well #7: MW-1		Well #8: MW-2	
Initial Depth to Groundwater					15.80		15.92		14.57		14.73		15.21		15.07		16.35		16.21	
Screen Interval					21.50		23.50													
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)					VAC	D_{TW}	VAC	D_{TW}	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)
11/7					E	20'	E	22'	E	✓										
0400	21	127	1400	13680																
0800	21	129	1402	13410																
1200	21	133	1400	13860							5.08	17.30	Ø	17.25	Ø	16.71	Ø	17.74	Ø	17.08
1600	21	128	1401	14070																
2000	21	129	1401	14140																
2400	21	127	1401	14380																
11/8																				
0400	21	129	1400	14490																
0800	21	131	1400	14710							5.40	17.35	Ø	17.29	Ø	16.75	Ø	17.78	Ø	17.13
1200	21	133	1400	14550																
1600	21	129	1402	14380																
2000	21	127	1401	14220																
2400	21	130	1400	13940																
11/9																				
0400	21	128	1401	13860																
0800	21	131	1400	13790																
1200	21	134	1400	13530							5.80	17.41	Ø	17.34	Ø	16.79	Ø	17.82	Ø	17.18

Comments: 11/9 - TOOK END VAPOR SAMPLES OF MW-3 @ 1000, IW-5 @ 1030, IW-3 @ 1100 AND A COMBINED @ 1130. WATER METER END @ 446670.

HIGH VACUUM DUAL PHASE EXTRACTION SYSTEM FIELD DATA SHEET

CAL CLEAN INC.
(714) 734-9137

Project Location: **250 8TH STREET** City: **OAKLAND** Site #: **LIM PROPERTY** Date: 10 25 / 2004 Page 1 of 1

Client: **AQUA SCIENCE ENGINEERS (925-820-9391)** Operator (s): _____

					Well#1: MW-3		Well#2:		Well #3:		Well #4:		Well #5:		Well #6:		Well #7:		Well #8:	
Initial Depth to Groundwater					START		WATER		METER		=		352200							
Screen Interval																				
Time	Unit Vacuum ("Hg.)	Total Flowrate (scfm)	TOX Temp. (degF)	TOX Inlet Conc. (ppmv)		Stinger Depth (feet)									Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)	Vacuum "H_2O	DTW (ft)[a]
DATE	TIME	WATER	METER	TOTAL	GALS		Date	Time	Water	Meter	Total	Gals								
10/26	0800	355	680	3	480		11/3	0800	403	890	51	690								
	2000	359	180	6	980			2000	407	400	55	200								
10/27	2000	362	730	10	530		11/4	0800	411	010	58	810								
								2000	414	520	62	320								
10/28	0800	365	740	13	540															
	2000	368	850	16	650		11/5	0800	418	110	65	910								
								2000	421	550	69	350								
10/29	0800	371	945	19	745															
	2000	375	065	22	865		11/6	0800	424	110	72	910								
								2000	427	620	75	420								
10/30	0800	378	160	25	960															
	2000	381	280	29	080		11-7	0800	431	220	79	020								
								2000	434	940	82	740								
10/31	0800	384	350	32	150															
	2000	387	090	34	890		11-8	0800	438	620	86	420								
								2000	442	270	90	070								
11/1	0800	390	300	38	100															
		393	570	41	370		11/9	0800	445	570	93	370								
									446	670	94	470								
11/2	0800	396	150	44	550															
	2000	400	140	47	940															

Comments:

PROPANE - NORTHERN ENERGY
408) 293-8912

Dave Allen = CONSULTANT=
CELL - 925) 819-0963
OFFICE - 925) 820-9391

APPENDIX D

Certified Analytical Reports and Chain of Custody Documentation For Influent Air Bag Samples

SEVERN TRENT STL

Submission#: 2004-10-0809

Aqua Science Engineers, Inc.

October 29, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th St., Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 10/26/2004 15:45
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/10/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-10-0809

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
INF-MW3-10.25.04	10/25/2004 12:30	Air	1
INF-IW5-10.25.04	10/25/2004 13:30	Air	2

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**INF-MW3-10.25.04**	Lab ID:	2004-10-0809 - 1
Sampled:	10/25/2004 12:30	Extracted:	10/28/2004 09:31
Matrix:	Air	QC Batch#:	2004/10/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	27000	10000	ug/L	200.00	10/28/2004 09:31	Q1
Benzene	710	100	ug/L	200.00	10/28/2004 09:31	
Toluene	350	100	ug/L	200.00	10/28/2004 09:31	
Ethyl benzene	ND	100	ug/L	200.00	10/28/2004 09:31	
Xylene(s)	140	100	ug/L	200.00	10/28/2004 09:31	
MTBE	ND	1000	ug/L	200.00	10/28/2004 09:31	
Surrogate(s)						
Trifluorotoluene	103.6	58-124	%	200.00	10/28/2004 09:31	
4-Bromofluorobenzene-FID	85.9	50-150	%	200.00	10/28/2004 09:31	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	**INF-IW5-10.25.04**	Lab ID:	2004-10-0809 - 2
Sampled:	10/25/2004 13:30	Extracted:	10/28/2004 11:09
Matrix:	Air	QC Batch#:	2004/10/28-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	94000	10000	ug/L	200.00	10/28/2004 11:09	Q1
Benzene	4100	100	ug/L	200.00	10/28/2004 11:09	
Toluene	5200	100	ug/L	200.00	10/28/2004 11:09	
Ethyl benzene	630	100	ug/L	200.00	10/28/2004 11:09	
Xylene(s)	2100	100	ug/L	200.00	10/28/2004 11:09	
MTBE	ND	1000	ug/L	200.00	10/28/2004 11:09	
Surrogate(s)						
Trifluorotoluene	119.9	58-124	%	200.00	10/28/2004 11:09	
4-Bromofluorobenzene-FID	91.1	50-150	%	200.00	10/28/2004 11:09	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030
5030
Method Blank

Water

Test(s): 8015M
8021B
QC Batch # 2004/10/28-01.05

MB: 2004/10/28-01.05-001

Date Extracted: 10/28/2004 07:42

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/28/2004 07:42	
Benzene	ND	0.5	ug/L	10/28/2004 07:42	
Toluene	ND	0.5	ug/L	10/28/2004 07:42	
Ethyl benzene	ND	0.5	ug/L	10/28/2004 07:42	
Xylene(s)	ND	0.5	ug/L	10/28/2004 07:42	
MTBE	ND	5.0	ug/L	10/28/2004 07:42	
Surrogates(s)					
Trifluorotoluene	105.2	58-124	%	10/28/2004 07:42	
4-Bromofluorobenzene-FID	80.8	50-150	%	10/28/2004 07:42	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/10/28-01.05**

LCS 2004/10/28-01.05-002 Extracted: 10/28/2004 Analyzed: 10/28/2004 08:14
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	55.0		50.0	110.0			77-123	20		
Toluene	54.5		50.0	109.0			78-122	20		
Ethyl benzene	54.7		50.0	109.4			70-130	20		
Xylene(s)	165		150	110.0			75-125	20		
Surrogates(s)										
Trifluorotoluene	538		500	107.6			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2004/10/28-01.05

LCS 2004/10/28-01.05-003
LCSD

Extracted: 10/28/2004

Analyzed: 10/28/2004 08:47

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	259		250	103.6			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	432		500	86.4			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/10/28-01.05**

MS/MSD

Lab ID: 2004-10-0558 - 006

MS: 2004/10/28-01.05-017 Extracted: 10/28/2004 Analyzed: 10/28/2004 16:46

Dilution: 5.00

MSD: 2004/10/28-01.05-018 Extracted: 10/28/2004 Analyzed: 10/28/2004 17:18

Dilution: 5.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	308	344	61.5	250	98.6	113.0	13.6	65-135	20		
Toluene	240	279	2.70	250	94.9	110.5	15.2	65-135	20		
Ethyl benzene	296	343	75.0	250	88.4	107.2	19.2	65-135	20		
Xylene(s)	688	827	7.18	750	90.8	109.3	18.5	65-135	20		
Surrogate(s)											
Trifluorotoluene	418	463		500	83.6	92.6		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/10/28-01.05**

MS/MSD

Lab ID: 2004-10-0558 - 006

MS: 2004/10/28-01.05-019 Extracted: 10/28/2004 Analyzed: 10/28/2004 17:51
Dilution: 5.00

MSD: 2004/10/28-01.05-020 Extracted: 10/28/2004 Analyzed: 10/28/2004 18:23
Dilution: 5.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	3370	3190	2340	1250	82.4	68.0	19.1	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	420	425		500	83.9	85.0		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/26/2004 15:45

Site: 250 8th St., Oakland

Legend and Notes

Result Flag

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

95059

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

Chain of Custody

2004-10-0809

PAGE 1 OF 1

SAMPLER (SIGNATURE)

PROJECT NAME L I M · JOB NO. 2808

ADDRESS 250 8th St., Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)				HOLD
INF-MW3-10.25.04	10/25	1230	Air	1	X																
INF-IW5-10.25.04	10/25	1330	Air	1	X																

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (signature) 0910 (time) (2)	RELINQUISHED BY: (1) (signature) (time)	RECEIVED BY LABORATORY: (signature) 15:45 (time) (4)	COMMENTS:
D. ALLEN (printed name) 10/26/04 (date)	JMefford (printed name) 102604 (date)	DSobrero (printed name) (date)	Tracy Bullock (printed name) 10/26/04 (date)	TURN AROUND TIME: STANDARD 24Hr 48Hr 72Hr
Company-ASE, INC.	Company- STL-SF	Company- ASE	Company- STL-SF	OTHER: Temp. 18°C

(3) RELINQUISHED BY (signature) 102604

SEVERN TRENT STL

Submission#: 2004-10-0929

Aqua Science Engineers, Inc.

November 05, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th Street, Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 10/29/2004 14:50
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/13/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-10-0929

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
VINF-MW3/IW5-10-28-03	10/28/2004 15:05	Air	1

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Prep(s): 5030B
Test(s): 8260B

Sample ID: **VINF-MW3/IW5-10-28-03**
Lab ID: 2004-10-0929 - 1

Sampled: 10/28/2004 15:05
Extracted: 10/30/2004 17:34

Matrix: Air
QC Batch#: 2004/10/30-1G.64

Analysis Flag: . (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	2800	50	ug/L	1.00	10/30/2004 17:34	
Benzene	59	1.0	ug/L	1.00	10/30/2004 17:34	
Toluene	110	1.0	ug/L	1.00	10/30/2004 17:34	
Ethylbenzene	20	1.0	ug/L	1.00	10/30/2004 17:34	
Total xylenes	77	1.0	ug/L	1.00	10/30/2004 17:34	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	10/30/2004 17:34	
Surrogate(s)						
1,2-Dichloroethane-d4	98.6	72-128	%	1.00	10/30/2004 17:34	
Toluene-d8	97.6	80-113	%	1.00	10/30/2004 17:34	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2004/10/30-1G.64-013

Water

Test(s): 8260B
QC Batch # 2004/10/30-1G.64
Date Extracted: 10/30/2004 09:13

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/30/2004 09:13	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	10/30/2004 09:13	
Benzene	ND	0.5	ug/L	10/30/2004 09:13	
Toluene	ND	0.5	ug/L	10/30/2004 09:13	
Ethylbenzene	ND	0.5	ug/L	10/30/2004 09:13	
Total xylenes	ND	1.0	ug/L	10/30/2004 09:13	
Surrogates(s)					
1,2-Dichloroethane-d4	93.4	73-130	%	10/30/2004 09:13	
Toluene-d8	102.0	81-114	%	10/30/2004 09:13	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/10/30-1G.64**

LCS 2004/10/30-1G.64-050 Extracted: 10/30/2004 Analyzed: 10/30/2004 08:50
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	21.4		25	85.6			65-165	20		
Benzene	20.3		25	81.2			69-129	20		
Toluene	21.0		25	84.0			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	469		500	93.8			73-130			
Toluene-d8	502		500	100.4			81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/10/30-1G.64**

MS/MSD

Lab ID: 2004-10-0766 - 001

MS: 2004/10/30-1G.64-044 Extracted: 10/30/2004 Analyzed: 10/30/2004 12:44

Dilution: 1.00

MSD: 2004/10/30-1G.64-006 Extracted: 10/30/2004 Analyzed: 10/30/2004 13:06

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	19.9	19.2	ND	25	79.6	76.8	3.6	69-129	20		
Toluene	20.6	20.0	ND	25	82.4	80.0	3.0	70-130	20		
Methyl tert-butyl ether	108	118	94.2	25	55.2	95.2	53.2	65-165	20	M5	R1
Surrogate(s)											
1,2-Dichloroethane-d4	463	475		500	92.6	95.0		73-130			
Toluene-d8	503	523		500	100.6	104.6		81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Legend and Notes

Analysis Flag

Result Flag

M5

MS/MSD spike recoveries were below acceptance limits. See blank spike (LCS).

R1

Analyte RPD was out of QC limits.

2004-10-0427

45144

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

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE) D. Allen

PROJECT NAME LIM JOB NO. 2808

ADDRESS 250 8th Street, Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)				HOLD
VINF-MW3/IWS-10.28.03	10/28	1505	Air	1	X																

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:
(signature) (time) 0937	(signature) (time) 0937	(signature) (time) 1450	(signature) (time) 1450
D. ALLEN (printed name) 10/29/04 (date)	J Mefford 102904 (printed name) (date)	J Mefford 102904 (printed name) (date)	D Harrington 10/29/04 (printed name) (date)
Company-ASE, INC.	Company- STL-SF	Company- STL-SF	Company- STL-SF

COMMENTS: 18°C

TURN AROUND TIME

STANDARD 24Hr 48Hr 72Hr

OTHER:

SEVERN TRENT STL

Submission#: 2004-11-0092

Aqua Science Engineers, Inc.

November 08, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th Street, Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 11/02/2004 15:20
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/17/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-11-0092

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
VINF-MW3/IW4/IW5-11-02-04	11/02/2004 16:20	Air	1
VINF-MW3-11-02-04	11/02/2004 17:15	Air	2
VINF-IW4-11-02-04	11/02/2004 16:00	Air	3
VINF-IW5-11-02-04	11/02/2004 17:30	Air	4

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **VINF-MW3/IW4/IW5-11-02-04**

Lab ID: 2004-11-0092 - 1

Sampled: 11/02/2004 16:20

Extracted: 11/4/2004 23:06

Matrix: Air

QC Batch#: 2004/11/04-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	34000	2500	ug/L	50.00	11/04/2004 23:06	Q1
Benzene	970	25	ug/L	50.00	11/04/2004 23:06	
Toluene	ND	25	ug/L	50.00	11/04/2004 23:06	
Ethyl benzene	250	25	ug/L	50.00	11/04/2004 23:06	
Xylene(s)	780	25	ug/L	50.00	11/04/2004 23:06	
MTBE	ND	250	ug/L	50.00	11/04/2004 23:06	
Surrogate(s)						
Trifluorotoluene	94.5	58-124	%	50.00	11/04/2004 23:06	
4-Bromofluorobenzene-FID	69.2	50-150	%	50.00	11/04/2004 23:06	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **VINF-MW3-11-02-04**

Lab ID: 2004-11-0092 - 2

Sampled: 11/02/2004 17:15

Extracted: 11/4/2004 23:39

Matrix: Air

QC Batch#: 2004/11/04-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	23000	2500	ug/L	50.00	11/04/2004 23:39	Q1
Benzene	970	25	ug/L	50.00	11/04/2004 23:39	
Toluene	1800	25	ug/L	50.00	11/04/2004 23:39	
Ethyl benzene	400	25	ug/L	50.00	11/04/2004 23:39	
Xylene(s)	1500	25	ug/L	50.00	11/04/2004 23:39	
MTBE	ND	250	ug/L	50.00	11/04/2004 23:39	
Surrogate(s)						
Trifluorotoluene	93.3	58-124	%	50.00	11/04/2004 23:39	
4-Bromofluorobenzene-FID	72.2	50-150	%	50.00	11/04/2004 23:39	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **VINF-IW4-11-02-04**

Lab ID: 2004-11-0092 - 3

Sampled: 11/02/2004 16:00

Extracted: 11/5/2004 00:12

Matrix: Air

QC Batch#: 2004/11/04-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	23000	2500	ug/L	50.00	11/05/2004 00:12	Q1
Benzene	720	25	ug/L	50.00	11/05/2004 00:12	
Toluene	310	25	ug/L	50.00	11/05/2004 00:12	
Ethyl benzene	120	25	ug/L	50.00	11/05/2004 00:12	
Xylene(s)	380	25	ug/L	50.00	11/05/2004 00:12	
MTBE	ND	250	ug/L	50.00	11/05/2004 00:12	
Surrogate(s)						
Trifluorotoluene	74.7	58-124	%	50.00	11/05/2004 00:12	
4-Bromofluorobenzene-FID	51.9	50-150	%	50.00	11/05/2004 00:12	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **VINF-IW5-11-02-04**

Lab ID: 2004-11-0092 - 4

Sampled: 11/02/2004 17:30

Extracted: 11/5/2004 00:45

Matrix: Air

QC Batch#: 2004/11/04-01.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	22000	2500	ug/L	50.00	11/05/2004 00:45	Q1
Benzene	740	25	ug/L	50.00	11/05/2004 00:45	
Toluene	1200	25	ug/L	50.00	11/05/2004 00:45	
Ethyl benzene	320	25	ug/L	50.00	11/05/2004 00:45	
Xylene(s)	1100	25	ug/L	50.00	11/05/2004 00:45	
MTBE	ND	250	ug/L	50.00	11/05/2004 00:45	
Surrogate(s)						
Trifluorotoluene	95.2	58-124	%	50.00	11/05/2004 00:45	
4-Bromofluorobenzene-FID	74.3	50-150	%	50.00	11/05/2004 00:45	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank | **Water** | **QC Batch # 2004/11/04-01.05**

MB: 2004/11/04-01.05-001

Date Extracted: 11/04/2004 16:30

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/04/2004 16:30	
Benzene	ND	0.5	ug/L	11/04/2004 16:30	
Toluene	0.561	0.5	ug/L	11/04/2004 16:30	A1
Ethyl benzene	ND	0.5	ug/L	11/04/2004 16:30	
Xylene(s)	ND	0.5	ug/L	11/04/2004 16:30	
MTBE	ND	5.0	ug/L	11/04/2004 16:30	
Surrogates(s)					
Trifluorotoluene	113.6	58-124	%	11/04/2004 16:30	
4-Bromofluorobenzene-FID	82.2	50-150	%	11/04/2004 16:30	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/04-01.05**

LCS 2004/11/04-01.05-002 Extracted: 11/04/2004 Analyzed: 11/04/2004 17:03
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	49.5		50.0	99.0			77-123	20		
Toluene	51.7		50.0	103.4			78-122	20		
Ethyl benzene	51.4		50.0	102.8			70-130	20		
Xylene(s)	153		150	102.0			75-125	20		
Surrogates(s)										
Trifluorotoluene	542		500	108.4			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/04-01.05**

LCS 2004/11/04-01.05-003 Extracted: 11/04/2004 Analyzed: 11/04/2004 17:36
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	270		250	108.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	391		500	78.2			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/04-01.05**

MS/MSD

Lab ID: 2004-10-0820 - 005

MS: 2004/11/04-01.05-005 Extracted: 11/04/2004 Analyzed: 11/04/2004 18:42

Dilution: 100.00

MSD: 2004/11/04-01.05-006 Extracted: 11/04/2004 Analyzed: 11/04/2004 19:15

Dilution: 100.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	6710	6850	1420	5000	105.8	108.6	2.6	65-135	20		
Toluene	5300	5490	81.7	5000	104.4	108.2	3.6	65-135	20		
Ethyl benzene	5570	5590	242.736	5000	106.5	106.9	0.4	65-135	20		
Xylene(s)	16800	16900	215	15000	110.6	111.2	0.5	65-135	20		
Surrogate(s)											
Trifluorotoluene	514	473		500	102.8	94.6		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/04-01.05**

MS/MSD

Lab ID: 2004-10-0820 - 005

MS: 2004/11/04-01.05-007 Extracted: 11/04/2004 Analyzed: 11/04/2004 19:48

Dilution: 100.00

MSD: 2004/11/04-01.05-008 Extracted: 11/04/2004 Analyzed: 11/04/2004 20:21

Dilution: 100.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	32000	31300	10200	25000	87.2	84.4	3.3	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	387	368		500	77.5	73.5		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/02/2004 15:20

Site: 250 8th Street, Oakland

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

A1

Analyte was found in the method blank at a concentration greater than the reporting limit.

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

2004-11-0092

95342

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

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE)

PROJECT NAME LIM JOB NO. 2408

ADDRESS 250 8th St, Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)				HOLD
VINF-MW3/IW4/IW5-11-02-04	11/02	1620	Air	1	X																
VINF-MW3-11-02-04	11/02	1715	Air	1	X																
VINF-IW4-11-02-04	11/02	1600	Air	1	X																
VINF-IW5-11-02-04	11/02	1730	Air	1	X																

RUSH

RELINQUISHED BY: (signature)	(time)	RECEIVED BY: (signature)	(time)	RELINQUISHED BY: (signature)	(time)	RECEIVED BY LABORATORY: (signature)	(time)
1520						Denise Harrington	
D. ALLEN (printed name)	11/03/04 (date)	(printed name)	(date)	(printed name)	(date)	D Harrington (printed name)	1520 (date)
Company-ASE, INC.		Company-		Company-		Company- STL-SF	11/03/04

COMMENTS: 18°c

TURN AROUND TIME

STANDARD 24Hr (48Hr) 72Hr

OTHER:

SEVERN TRENT STL

Submission#: 2004-11-0325

Aqua Science Engineers, Inc.

November 18, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th St., Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 11/10/2004 17:25
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/25/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu.

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-11-0325

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
VINF-MW3-11-09-04	11/09/2004 08:30	Air	1
VINF-IW4-11-09-04	11/09/2004 09:00	Air	2
VINF-IW5-11-09-04	11/09/2004 09:30	Air	3
VINF-MW3/IW4/IW5-11-09-04	11/09/2004 10:00	Air	4

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Prep(s): 5030B
Test(s): 8260B
Sample ID: **VINF-MW3-11-09-04**
Lab ID: 2004-11-0325 - 1
Sampled: 11/09/2004 08:30
Extracted: 11/11/2004 15:36
Matrix: Air
QC Batch#: 2004/11/11-01.68
Analysis Flag: . (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	43000	250	ug/L	5.00	11/11/2004 15:36	
Benzene	890	5.0	ug/L	5.00	11/11/2004 15:36	
Toluene	1200	5.0	ug/L	5.00	11/11/2004 15:36	
Ethylbenzene	250	5.0	ug/L	5.00	11/11/2004 15:36	
Total xylenes	720	5.0	ug/L	5.00	11/11/2004 15:36	
Methyl tert-butyl ether (MTBE)	ND	2.5	ug/L	5.00	11/11/2004 15:36	
Surrogate(s)						
1,2-Dichloroethane-d4	104.0	72-128	%	5.00	11/11/2004 15:36	
Toluene-d8	101.3	80-113	%	5.00	11/11/2004 15:36	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Prep(s): 5030B
Sample ID: **VINF-IW4-11-09-04**
Sampled: 11/09/2004 09:00
Matrix: Air

Test(s): 8260B
Lab ID: 2004-11-0325 - 2
Extracted: 11/11/2004 15:54
QC Batch#: 2004/11/11-01.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	19000	250	ug/L	5.00	11/11/2004 15:54	
Benzene	460	5.0	ug/L	5.00	11/11/2004 15:54	
Toluene	570	5.0	ug/L	5.00	11/11/2004 15:54	
Ethylbenzene	130	5.0	ug/L	5.00	11/11/2004 15:54	
Total xylenes	420	5.0	ug/L	5.00	11/11/2004 15:54	
Methyl tert-butyl ether (MTBE)	ND	2.5	ug/L	5.00	11/11/2004 15:54	
Surrogate(s)						
1,2-Dichloroethane-d4	106.8	72-128	%	5.00	11/11/2004 15:54	
Toluene-d8	100.2	80-113	%	5.00	11/11/2004 15:54	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**VINF-IW5-11-09-04**	Lab ID:	2004-11-0325 - 3
Sampled:	11/09/2004 09:30	Extracted:	11/11/2004 19:22
Matrix:	Air	QC Batch#:	2004/11/11-02.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	18000	250	ug/L	5.00	11/11/2004 19:22	
Benzene	490	5.0	ug/L	5.00	11/11/2004 19:22	
Toluene	840	5.0	ug/L	5.00	11/11/2004 19:22	
Ethylbenzene	180	5.0	ug/L	5.00	11/11/2004 19:22	
Total xylenes	750	5.0	ug/L	5.00	11/11/2004 19:22	
Methyl tert-butyl ether (MTBE)	ND	2.5	ug/L	5.00	11/11/2004 19:22	
Surrogate(s)						
1,2-Dichloroethane-d4	102.6	72-128	%	5.00	11/11/2004 19:22	
Toluene-d8	101.4	80-113	%	5.00	11/11/2004 19:22	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Prep(s): 5030B
Test(s): 8260B
Sample ID: **VINF-MW3/IW4/IW5-11-09-04**
Lab ID: 2004-11-0325 - 4
Sampled: 11/09/2004 10:00
Extracted: 11/11/2004 19:41
Matrix: Air
QC Batch#: 2004/11/11-02.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	25000	100	ug/L	2.00	11/11/2004 19:41	
Benzene	490	2.0	ug/L	2.00	11/11/2004 19:41	
Toluene	640	2.0	ug/L	2.00	11/11/2004 19:41	
Ethylbenzene	140	2.0	ug/L	2.00	11/11/2004 19:41	
Total xylenes	490	2.0	ug/L	2.00	11/11/2004 19:41	
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	2.00	11/11/2004 19:41	
Surrogate(s)						
1,2-Dichloroethane-d4	108.8	72-128	%	2.00	11/11/2004 19:41	
Toluene-d8	92.3	80-113	%	2.00	11/11/2004 19:41	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2004/11/11-01.68-022

Water

Test(s): 8260B
QC Batch # 2004/11/11-01.68
Date Extracted: 11/11/2004 08:22

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/11/2004 08:22	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	11/11/2004 08:22	
Benzene	ND	0.5	ug/L	11/11/2004 08:22	
Toluene	ND	0.5	ug/L	11/11/2004 08:22	
Ethylbenzene	ND	0.5	ug/L	11/11/2004 08:22	
Total xylenes	ND	1.0	ug/L	11/11/2004 08:22	
Surrogates(s)					
1,2-Dichloroethane-d4	99.4	73-130	%	11/11/2004 08:22	
Toluene-d8	104.0	81-114	%	11/11/2004 08:22	

SEVERN TRENT STL

Submission: 2004-11-0325

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2004/11/11-02.68-005

Water

Test(s): 8260B
QC Batch # 2004/11/11-02.68
Date Extracted: 11/11/2004 18:05

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/11/2004 18:05	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	11/11/2004 18:05	
Benzene	ND	0.5	ug/L	11/11/2004 18:05	
Toluene	ND	0.5	ug/L	11/11/2004 18:05	
Ethylbenzene	ND	0.5	ug/L	11/11/2004 18:05	
Total xylenes	ND	1.0	ug/L	11/11/2004 18:05	
Surrogates(s)					
1,2-Dichloroethane-d4	98.0	73-130	%	11/11/2004 18:05	
Toluene-d8	99.2	81-114	%	11/11/2004 18:05	

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/11/11-01.68**

LCS 2004/11/11-01.68-003 Extracted: 11/11/2004 Analyzed: 11/11/2004 08:03

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	18.5		25.0	74.0			65-165	20		
Benzene	20.9		25.0	83.6			69-129	20		
Toluene	20.9		25.0	83.6			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	464		500	92.8			73-130			
Toluene-d8	540		500	108.0			81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/11/11-02.68**

LCS 2004/11/11-02.68-047 Extracted: 11/11/2004 Analyzed: 11/11/2004 17:47
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	21.2		25.0	84.8			65-165	20		
Benzene	27.8		25.0	111.2			69-129	20		
Toluene	24.8		25.0	99.2			70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	448		500	89.6			73-130			
Toluene-d8	545		500	109.0			81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/11-01.68**

MS/MSD

Lab ID: 2004-11-0283 - 003

MS: 2004/11/11-01.68-050 Extracted: 11/11/2004 Analyzed: 11/11/2004 12:50

Dilution: 1.00

MSD: 2004/11/11-01.68-009 Extracted: 11/11/2004 Analyzed: 11/11/2004 13:09

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	32.9	27.7	3.75	25.0	116.6	95.8	19.6	65-165	20		
Benzene	27.5	26.5	ND	25.0	110.0	106.0	3.7	69-129	20		
Toluene	25.8	22.5	ND	25.0	103.2	90.0	13.7	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	559	511		500	111.7	102.2		73-130			
Toluene-d8	536	522		500	107.3	104.4		81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/11-02.68**

MS/MSD

Lab ID: 2004-11-0121 - 008

MS: 2004/11/11-02.68-031 Extracted: 11/11/2004 Analyzed: 11/11/2004 21:31
Dilution: 1.00

MSD: 2004/11/11-02.68-049 Extracted: 11/11/2004 Analyzed: 11/11/2004 21:49
Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Methyl tert-butyl ether	30.6	23.5	ND	25.0	122.4	94.0	26.2	65-165	20		R1
Benzene	29.4	25.8	ND	25.0	117.6	103.2	13.0	69-129	20		
Toluene	25.7	23.1	ND	25.0	102.8	92.4	10.7	70-130	20		
Surrogate(s)											
1,2-Dichloroethane-d4	520	505		500	104.0	101.0		73-130			
Toluene-d8	504	506		500	100.8	101.2		81-114			

Gas/BTEXFuel Oxygenates by 8260B

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/10/2004 17:25

Site: 250 8th St., Oakland

Legend and Notes

Analysis Flag

Result Flag

R1

Analyte RPD was out of QC limits.

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

Chain of Custody

95573

2004-11-0325

PAGE 1 OF 1

SAMPLER (SIGNATURE) C. Allen

PROJECT NAME LIM JOB NO. 2808

ADDRESS 250 8th St., Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)				HOLD
VINF-MW3-11.09.04	11/09	0830	Air	1	X																
VINF-IW4-11.09.04	"	0900	"	"	X																
VINF-IW5-11.09.04	"	0930	"	4	X																
VINF-MW3/IW4/IW5-11.09.04	"	1000	"	"	X																

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
(signature) C. Allen (time) 1100	(signature) (time) 1100	(signature) (time) 1725	(signature) (time) 17:25	Temp 19°C
D. ALLEN (printed name) 11/10/04 (date)	(printed name) (date) 11/10/04	(printed name) (date) 11/10/04	T. Bullock (printed name) 11/10/04 (date)	TURN AROUND TIME: (STANDARD) 24Hr 48Hr 72Hr
Company-ASE, INC.	Company-	Company- STL-SF	Company- STL-SF	OTHER:

APPENDIX E

Certified Analytical Reports and Chain of Custody Documentation For Influent Water Samples

SEVERN TRENT STL

Submission#: 2004-10-0946

Aqua Science Engineers, Inc.

November 08, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th Street, Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 10/29/2004 14:50
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/13/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-10-0946

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Samples Reported

Sample Name 5	Date Sampled	Matrix	Lab #
WINF-MW3/IW5-10-28-04	10/28/2004 13:00	Water	1

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **WINF-MW3/IW5-10-28-04**

Lab ID: 2004-10-0946 - 1

Sampled: 10/28/2004 13:00

Extracted: 11/6/2004 15:17

Matrix: Water

QC Batch#: 2004/11/05-02.05

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	20000	5000	ug/L	100.00	11/06/2004 15:17	
Benzene	690	50	ug/L	100.00	11/06/2004 15:17	
Toluene	2200	50	ug/L	100.00	11/06/2004 15:17	
Ethyl benzene	720	50	ug/L	100.00	11/06/2004 15:17	
Xylene(s)	3700	50	ug/L	100.00	11/06/2004 15:17	
MTBE	ND	500	ug/L	100.00	11/06/2004 15:17	
Surrogate(s)						
Trifluorotoluene	81.9	58-124	%	100.00	11/06/2004 15:17	
4-Bromofluorobenzene-FID	63.5	50-150	%	100.00	11/06/2004 15:17	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank **Water** **QC Batch # 2004/11/05-02.05**

MB: 2004/11/05-02.05-044

Date Extracted: 11/06/2004 10:55

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/06/2004 10:55	
Benzene	ND	0.5	ug/L	11/06/2004 10:55	
Toluene	ND	0.5	ug/L	11/06/2004 10:55	
Ethyl benzene	ND	0.5	ug/L	11/06/2004 10:55	
Xylene(s)	ND	0.5	ug/L	11/06/2004 10:55	
MTBE	ND	5.0	ug/L	11/06/2004 10:55	
Surrogates(s)					
Trifluorotoluene	94.6	58-124	%	11/06/2004 10:55	
4-Bromofluorobenzene-FID	70.6	50-150	%	11/06/2004 10:55	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/05-02.05**

LCS 2004/11/05-02.05-045 Extracted: 11/06/2004 Analyzed: 11/06/2004 11:28
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	48.7		50.0	97.4			77-123	20		
Toluene	50.6		50.0	101.2			78-122	20		
Ethyl benzene	48.9		50	97.8			70-130	20		
Xylene(s)	145		150	96.7			75-125	20		
Surrogates(s)										
Trifluorotoluene	490		500	98.0			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/05-02.05**

LCS 2004/11/05-02.05-046 Extracted: 11/06/2004 Analyzed: 11/06/2004 12:01
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	270		250	108.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	364		500	72.8			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/05-02.05**

MS/MSD

Lab ID: 2004-10-0884 - 001

MS: 2004/11/05-02.05-048 Extracted: 11/06/2004

Analyzed: 11/06/2004 13:07

Dilution: 20.00

MSD: 2004/11/05-02.05-049 Extracted: 11/06/2004

Analyzed: 11/06/2004 13:40

Dilution: 20.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	1060	1060	13.3	1000	104.7	104.7	0.0	65-135	20		
Toluene	1080	1080	3.21	1000	107.7	107.7	0.0	65-135	20		
Ethyl benzene	1690	1700	662.48	1000	102.8	103.8	1.0	65-135	20		
Xylene(s)	4020	4090	905.25	3000	103.8	106.2	2.3	65-135	20		
Surrogate(s)											
Trifluorotoluene	523	509		500	104.7	101.8		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/05-02.05**

MS/MSD

Lab ID: 2004-10-0884 - 001

MS: 2004/11/05-02.05-050 Extracted: 11/06/2004 Analyzed: 11/06/2004 14:13

Dilution: 20.00

MSD: 2004/11/05-02.05-051 Extracted: 11/06/2004 Analyzed: 11/06/2004 14:45

Dilution: 20.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	10700	11000	7120	5000	71.6	77.6	8.0	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	390	385		500	78.0	77.0		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

SEVERN TRENT STL

Submission: 2004-10-0946

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
WINF-MW3/IW3-10-28-04	10/28/2004 13:00	Water	1

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Prep(s): 3510/8015M
Sample ID: **WINF-MW3/IW5-10-28-04**
Sampled: 10/28/2004 13:00
Matrix: Water

Test(s): 8015M
Lab ID: 2004-10-0946 - 1
Extracted: 11/5/2004 04:59
QC Batch#: 2004/11/05-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	5700	50	ug/L	1.00	11/06/2004 10:47	edr
Surrogate(s)						
o-Terphenyl	61.7	60-130	%	1.00	11/06/2004 10:47	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2004/11/05-01.10-001

Water

Test(s): 8015M
QC Batch # 2004/11/05-01.10
Date Extracted: 11/05/2004 04:59

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	11/05/2004 14:09	
Surrogates(s)					
o-Terphenyl	73.9	60-130	%	11/05/2004 14:09	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/05-01.10**

LCS 2004/11/05-01.10-002 Extracted: 11/05/2004 Analyzed: 11/05/2004 14:36
LCSD 2004/11/05-01.10-003 Extracted: 11/05/2004 Analyzed: 11/05/2004 15:03

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	766	704	1000	76.6	70.4	8.4	60-130	25		
Surrogates(s)										
o-Terphenyl	18.0	16.4	20.0	90.1	82.2		60-130	0		

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 10/29/2004 14:50

Site: 250 8th Street, Oakland

Legend and Notes

Result Flag

edr

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

2004-10-0946 45200

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

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE)

PROJECT NAME LIM JOB NO. 2808

ADDRESS 250 8th St., Oakland

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)				HOLD
WINF-MW3/IWS-10.28.04	10/28	1300	H2O	4	X	X															

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
(signature) (time) 0937	(signature) (time) 0937	(signature) (time) 1950	(signature) (time)	WATER PRIOR TO TREATMENT WITH GAC
D. ALLEN (printed name) 10/29/04 (date)	J Mefford 102904 (printed name) (date)	J Mefford 102904 (printed name) (date)	D. Harrington (printed name) 1450 (date)	TURN AROUND TIME: STANDARD 24Hr 48Hr 72Hr
Company-ASE, INC.	Company- STL-SF	Company- STL-SF	Company- STL-SF 10/29/04	OTHER: 2°C

SEVERN TRENT STL

Submission#: 2004-11-0259

Aqua Science Engineers, Inc.

November 18, 2004

208 West El Pintado Road
Danville, CA 94526

Attn.: Dave Allen

Project#: 2808
Project: LIM
Site: 250 8th St., Oakland

Dear Mr. Allen,

Attached is our report for your samples received on 11/08/2004 12:20
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/23/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission: 2004-11-0259

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
WINF-MW3/IW4/IW5-11.05.04	11/05/2004 12:15	Water	1

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Prep(s): 5030
5030

Test(s): 8015M
8021B

Sample ID: **WINF-MW3/IW4/IW5-11.05.04**

Lab ID: 2004-11-0259 - 1

Sampled: 11/05/2004 12:15

Extracted: 11/15/2004 15:45

Matrix: Water

QC Batch#: 2004/11/15-01.01

Analysis Flag: L2 (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	7800	1000	ug/L	20.00	11/15/2004 15:45	Q1
Benzene	870	10	ug/L	20.00	11/15/2004 15:45	
Toluene	1400	10	ug/L	20.00	11/15/2004 15:45	
Ethyl benzene	320	10	ug/L	20.00	11/15/2004 15:45	
Xylene(s)	1700	10	ug/L	20.00	11/15/2004 15:45	
MTBE	ND	100	ug/L	20.00	11/15/2004 15:45	
Surrogate(s)						
Trifluorotoluene	106.4	58-124	%	20.00	11/15/2004 15:45	
4-Bromofluorobenzene-FID	98.8	50-150	%	20.00	11/15/2004 15:45	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030
5030

Test(s): 8015M
8021B

Method Blank **Water** **QC Batch # 2004/11/15-01.01**

MB: 2004/11/15-01.01-003

Date Extracted: 11/15/2004 08:46

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	11/15/2004 08:46	
Benzene	ND	0.5	ug/L	11/15/2004 08:46	
Toluene	ND	0.5	ug/L	11/15/2004 08:46	
Ethyl benzene	ND	0.5	ug/L	11/15/2004 08:46	
Xylene(s)	ND	0.5	ug/L	11/15/2004 08:46	
MTBE	ND	5.0	ug/L	11/15/2004 08:46	
Surrogates(s)					
Trifluorotoluene	106.0	58-124	%	11/15/2004 08:46	
4-Bromofluorobenzene-FID	105.1	50-150	%	11/15/2004 08:46	

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike **Water** **QC Batch # 2004/11/15-01.01**

LCS 2004/11/15-01.01-004 Extracted: 11/15/2004 Analyzed: 11/15/2004 09:17
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	46.9		50.0	93.8			77-123	20		
Toluene	48.9		50.0	97.8			78-122	20		
Ethyl benzene	46.8		50	93.6			70-130	20		
Xylene(s)	139		150	92.7			75-125	20		
Surrogates(s)										
Trifluorotoluene	535		500	107.0			58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/15-01.01**

LCS 2004/11/15-01.01-005 Extracted: 11/15/2004 Analyzed: 11/15/2004 09:49
LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	295		250	118.0			75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	509		500	101.8			50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030 Test(s): 8021B

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/15-01.01**

MS/MSD Lab ID: 2004-11-0178 - 001

MS: 2004/11/15-01.01-007 Extracted: 11/15/2004 Analyzed: 11/15/2004 12:04
Dilution: 100.00

MSD: 2004/11/15-01.01-008 Extracted: 11/15/2004 Analyzed: 11/15/2004 12:35
Dilution: 100.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	4730	5180	12.6	5000	94.3	103.3	9.1	65-135	20		
Toluene	4900	5410	ND	5000	98.0	108.2	9.9	65-135	20		
Ethyl benzene	7790	8340	3383.780	5000	88.1	99.1	11.8	65-135	20		
Xylene(s)	15500	16800	1580	15000	92.8	101.5	9.0	65-135	20		
Surrogate(s)											
Trifluorotoluene	523	551		500	104.6	110.2		58-124			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 5030 Test(s): 8015M

Matrix Spike (MS / MSD) **Water** **QC Batch # 2004/11/15-01.01**

MS/MSD Lab ID: 2004-11-0178 - 001

MS: 2004/11/15-01.01-009 Extracted: 11/15/2004 Analyzed: 11/15/2004 13:07
Dilution: 100.00

MSD: 2004/11/15-01.01-010 Extracted: 11/15/2004 Analyzed: 11/15/2004 13:39
Dilution: 100.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	44400	45900	18200	25000	104.8	110.8	5.6	65-135	20		
Surrogate(s)											
4-Bromofluorobenzene-FID	516	519		500	103.2	103.8		50-150			

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Legend and Notes

Analysis Flag

L2

Reporting limits were raised due to high level of analyte present in the sample.

Result Flag

Q1

Quantit. of unknown hydrocarbon(s) in sample based on gasoline.

SEVERN TRENT STL

Submission: 2004-11-0259

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
WINF-MW3/IW4/IW5-11.05.04	11/05/2004 12:15	Water	1

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	**WINF-MW3/IW4/IW5-11.05.04**	Lab ID:	2004-11-0259 - 1
Sampled:	11/05/2004 12:15	Extracted:	11/12/2004 05:14
Matrix:	Water	QC Batch#:	2004/11/12-01.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	2400	50	ug/L	1.00	11/12/2004 15:31	Q2
Surrogate(s)						
o-Terphenyl	93.4	60-130	%	1.00	11/12/2004 15:31	

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2004/11/12-01.10-001

Water

Test(s): 8015M
QC Batch # 2004/11/12-01.10
Date Extracted: 11/12/2004 05:14

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	11/12/2004 15:03	
Surrogates(s)					
o-Terphenyl	90.3	60-130	%	11/12/2004 15:03	

Diesel

Aqua Science Engineers, Inc.

Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/11/12-01.10**

LCS 2004/11/12-01.10-002 Extracted: 11/12/2004 Analyzed: 11/12/2004 15:31
LCSD 2004/11/12-01.10-003 Extracted: 11/12/2004 Analyzed: 11/12/2004 15:59

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	972	982	1000	97.2	98.2	1.0	60-130	25		
Surrogates(s)										
o-Terphenyl	20.0	19.9	20.0	99.8	99.3		60-130	0		

Diesel

Aqua Science Engineers, Inc.
Attn.: Dave Allen

208 West El Pintado Road
Danville, CA 94526
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 2808
LIM

Received: 11/08/2004 12:20

Site: 250 8th St., Oakland

Legend and Notes

Result Flag

Q2

Quantit. of unknown hydrocarbon(s) in sample based on diesel.

95492

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

Chain of Custody

2004-11-0259

PAGE 1 OF 1

SAMPLER (SIGNATURE)

PROJECT NAME L I M JOB NO. 2808

ADDRESS ~~1808~~ 250 8TH ST., OAKLAND

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	PURGEABLE HALOCARBONS (EPA 601/8010)				HOLD
WINF-MW3/IW4/IWS-11-05-04	11/05	1215	H_2O	4	X	X															

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:
(signature) (time) 0830	(signature) (time) 0830	(signature) (time) 1220	D. Harrington (signature) (time) 1220
D. ALLEN (printed name) 11/8/04 (date)	JMefford (printed name) 11-8-04 (date)	JMefford (printed name) 11/8/04 (date)	D. Harrington (printed name) 11/8/04 (date)
Company-ASE, INC.	Company- STL-SF	Company- STL-SF	Company- STL-SF

COMMENTS:

TURN AROUND TIME

STANDARD 24Hr 48Hr 72Hr

OTHER: