



Alameda County

RW-084

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Environmental Health  
ALLWEST ENVIRONMENTAL

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TRANSMITTAL

TO: Ms. Eva Chu  
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Care Services  
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DATE: October 31, 2002

PROJECT NO. 22002.28

WE ARE TRANSMITTING:

Herewith  
 Under Separate Cover

THE FOLLOWING: Two (2) bound copies of the 3<sup>rd</sup> Quarter 2002, Groundwater Monitoring Report, 900 Central Avenue, Alameda, California

REMARKS: At the request of Ms. Kathellen Friend of Ryan, Andrada & Lifter. AllWest is forwarding 2 copies of our 3<sup>rd</sup> Quarter 2002, Groundwater Monitoring Report, 900 Central Avenue, Alameda, California.

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For Approval  
 For Your Use  
 As Requested  
 For Review & Comment

SIGNED BY: Michael L. Siembieda E \_\_\_ M \_\_\_ F  P \_\_\_ T  A

Prepared by: Eliza Yu



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**QUARTERLY GROUNDWATER MONITORING REPORT**  
**Third Quarter, 2002**

**900 Central Avenue**  
**Alameda, California**

**PREPARED FOR:**

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*c/o Kathleen Friend, Esq.*  
*Ryan, Andrada & Lifter*  
*300 Lakeside Drive, Suite 1045*  
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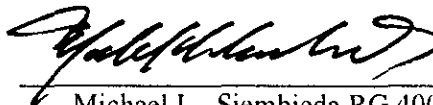
**AllWest Project No. 22002.28**  
**October 25, 2002**

**PREPARED BY:**



James S. Koniuto  
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## QUARTERLY GROUNDWATER MONITORING

Third Quarter, 2002

900 Central Avenue  
Alameda, California

### I. EXECUTIVE SUMMARY

AllWest collected groundwater samples from three monitoring wells at the subject site on March 29, 2002. That event reinitiated a one-year quarterly groundwater monitoring program. A previous one-year sampling program ended in October 1999. Quarterly monitoring activities included the sampling of three onsite monitoring wells, chemical analyses of the collected groundwater samples, and the preparation of this summary report. The purpose of the work was to comply with the request of Alameda County Environmental Health Services (ACEHS) to shallow groundwater quality in the vicinity of underground storage tanks (USTs) formerly located at the site.

Three onsite groundwater monitoring wells (MW-1, MW-2 and MW-3) were monitored on October 3, 2002, according to AllWest's *Groundwater Monitoring and Risk Assessment Work Plan, 900 Central Avenue, Alameda, California*, dated March 8, 2002. Groundwater samples were collected from two of three wells. Groundwater samples were not collected from the third well (MW-2) because the well was dry. Groundwater samples were forwarded to a state certified laboratory for chemical analyses of total petroleum hydrocarbons in the gasoline, diesel, and motor oil range (TPH-G, TPH-D, TPH-mo), four fuel related volatile compounds: benzene, toluene, ethylbenzene, and xylene (BTEX), and the fuel oxygenate methyl-ter-butyl-ether (MTBE). Sampling and analysis by EPA Method 8260B of the ether oxygenates tert-Butyl alcohol (TBA), Di-isopropyl Ether (DIPE), Ethyl tert-butyl ether (ETBE), and tert-Amyl methyl ether (TAME) was discontinued after recommendation by AllWest and approval by the ACEHS on July 2, 2002.

The results of groundwater monitoring for the third quarter of 2002 indicates that target analytes were detected in the groundwater samples collected from MW-1. Concentrations of TPH-G, TPH-D and BTEX increased from non-detectable levels measured in March 2002 to historic highs (42,000 ppb TPH-G, 8,400 ppb TPH-D, 2,600 ppb benzene, 3,300 ppb toluene, 1,800 ppb ethylbenzene, and 10,000 ppb xylene). No groundwater samples were collected from MW-2 because the well was dry. TPH-G, TPH-D and BTEX were not detected in the samples collected from MW-3 which is in agreement with historical sampling data. TPH-mo and MTBE have not been detected in any of the wells during the six rounds of groundwater sampling of the wells performed at the site.

Groundwater gradient and flow direction for this monitoring event was not calculated due to the lack of groundwater in well MW-2. Groundwater gradient and flow direction during the previous monitoring event was calculated to be at 0.009 ft/ft and to the southwest. Groundwater gradient and flow direction has been consistent throughout this investigation. Groundwater elevations are currently at their lowest levels measured.

A review of the monitoring data indicate that wells MW-1 and MW-3 are located downgradient of the probable locations of the former USTs, conveyance lines and pump island, and therefore are well suited to monitor groundwater conditions. Currently, evidence of groundwater impacts, due to historic use of petroleum hydrocarbons are being detected in MW-1 on a periodic frequency. Elevated concentrations of TPH-G, TPH-D and BTEX during September 1999, July 2002 and October 2002 coincide with groundwater surface elevation measurements in the range of 13 feet MSL or less. Non-detectable levels coincided with groundwater elevation measurements in the 17 to 18 feet MSL range. Continued groundwater quality monitoring is necessary to confirm this trend.

AllWest recommends that the groundwater monitoring continue in accordance with AllWest's March 8, 2002 Work Plan. In accordance with a February 20, 2002 e-mail from Eva Chu of the ACEHS, the following modifications have been made: 1) discontinue the analysis for ether oxygenates from the sampling program, including MTBE monitoring, and 2) delay the requirement of a Risk Based Corrective Analysis (RBCA) assessment.

AllWest also recommends that a copy of this report should be submitted to the Alameda County Environmental Health Services ( ACEHS ) to fulfill the agency reporting requirements. In accordance with the March 2002 Work Plan and verbal concurrence with the ACEHS, AllWest will complete a Conceptual Site Model (CSM) and compare groundwater monitoring results to risk-based screening levels in January 2003, after the results of the fourth quarter 2002 sampling event are known. The fourth quarter sampling event is scheduled for January 2003.

## **II. INTRODUCTION**

This report presents the results of the re-instituted quarterly groundwater monitoring program conducted in the vicinity of gasoline USTs formerly located at 900 Central Avenue, Alameda, California. The monitoring event was for the third quarter of 2002. Included in this report is an abbreviated site investigation history, a description of field activities, a summary of analytical results, our interpretation of the data, and a recommended course of action. Supporting information such as site figures, sampling logs, and laboratory reports are also included.

### **A. Site Background**

The subject property is located in the central-southern portion of the city of Alameda in a predominantly residential area. Specifically, the property is at the southeast corner of Central Avenue and Ninth Street. Site improvements consist of a two-story wood-frame duplex apartment

with surrounding landscaped areas. A site location map and a generalized site plan are presented on Figures 1 and 2 in the FIGURES section of this report.

According to a 1994 Lowney Associates report, the subject property was a gas station between 1931 and 1975 that included the use of underground fuel storage tanks. Lowney Associates also conducted a soil and groundwater sampling program at the site in 1994 to evaluate the potential of subsurface impact due to historical site use. The sampling program included the advancement of three borings, collection of soil and grab groundwater samples, and chemical analyses of selected samples. Lowney Associates reported that soil and groundwater samples from boring EB-1, located near the northwest corner of the subject property, contained elevated levels of gasoline (TPH-G) and fuel volatile compounds (BTEX).

In 1997, AllWest was retained to review and verify Lowney's 1994 findings. AllWest's 1997 investigation included the review of historical documents related to past site usage, the advancement of eight soil borings via the Geoprobe method to collect soil and groundwater samples, the chemical analyses of selected samples for TPH-G and BTEX, and a preliminary risk assessment using the American Society for Testing and Materials (ASTM) Risk Based Corrective Action (RBCA) process. The 1997 investigation results indicated that no current source areas are located at the subject site, the majority of impacted groundwater beneath the site is limited to the northwest corner and the former tank site is likely located in the public right-of-way, along the sidewalk of Central Avenue. The preliminary risk assessment indicated that petroleum hydrocarbons detected in groundwater beneath the subject property is unlikely to cause increased cancer risk to site occupants.

The results of the 1997 AllWest investigation were submitted to Alameda County Environmental Health Services (ACEHS), the lead regulatory agency for leaking underground storage tank sites in the City of Alameda. In March 1998, the County issued a letter requesting quarterly groundwater monitoring for a minimum of one year at the subject site. In June 1998, AllWest prepared a workplan for the well installation and groundwater monitoring program. Groundwater samples were proposed to be analyzed for the presence of TPH-G, BTEX, and MTBE. The workplan was submitted to and approved by ACEHS in August 1998. In addition to TPH-G, BTEX, and MTBE, ACEHS required the groundwater samples to be also analyzed for total petroleum hydrocarbons in the diesel and motor oil ranges (TPH-D and TPH-mo).

In November 1998, AllWest installed, developed, and sampled three groundwater monitoring wells at the subject site. TPH-G and BTEX were detected in well MW-1, located at the northwest corner of the subject property and near the suspected former UST site. In March 1999, AllWest sampled the three wells in accordance with the established quarterly monitoring program. Analytical results indicated no detectable levels of target contaminants in any of the groundwater samples collected during the March quarterly sampling event. In June 1999, AllWest collected groundwater samples from all the wells for the second quarter of 1999. The analysis of the samples collected indicated petroleum hydrocarbons in the groundwater sample collected from MW-1. No concentrations of petroleum hydrocarbons were recorded in the samples taken from wells MW-2 or MW-3. In the

September 1999 event, the last of the initial quarterly sampling events, historic highs of TPH-G, TPH-D and BTEX were detected in the sample collected from MW-1. No chemicals were detected in the samples collected from MW-2 and MW-3 except for trace concentrations of xylene detected in MW-2. When the wells were last sampled in March 2002, all analytes were measured to be at non-detectable levels.

## **B. Purpose and Scope of Work**

The purpose of this quarterly groundwater monitoring was to comply with the requirements of ACEHS for the reinstatement of groundwater monitoring in the vicinity of the USTs formerly located at site.

The scope of work for groundwater monitoring, was described in the March 8, 2002 Work Plan prepared by AllWest, which was subsequently approved by the ACEHS, and included the following tasks:

1. Measure the depth of groundwater table in each onsite groundwater monitoring well; Calculate the groundwater surface elevation, and determine the groundwater flow direction and gradient;
2. Collect a representative groundwater sample from each onsite monitoring well after proper purging process. Contain the purge water in appropriate storage devices onsite;
3. Submit the collected groundwater samples to a state certified laboratory for chemical analyses to detect the presence of total petroleum hydrocarbons in the gasoline, diesel, and motor oil range (TPH-G, TPH-D, TPH-mo), fuel related volatile organic compounds benzene, toluene, ethylbenzene, and xylene (BTEX) by modified EPA method 8015M and the fuel oxygenate methyl tert-butyl ether (MTBE) by EPA method 8260B
4. Prepare a written report to describe the field activities, summarize the analytical results and field measurements, and provide recommendations as appropriate.

## **III. FIELD ACTIVITIES**

Representative groundwater samples were collected by AllWest from groundwater monitoring wells MW-1 and MW-3 on October 3, 2002. Groundwater samples were not collected from MW-2 due to absence of water in the well. Prior to well purging, an electric water level sounder was lowered into the well casings to measure the depth to the water to the nearest 0.01 feet. A new clear poly disposable bailer was then lowered into the well casings and partially submerged. Upon retrieval of the clear bailer, the surface of the water column retained in the bailer was examined for any floating product or product sheen. No floating product or odors were observed on the surface of water

retained in the bailer from well MW-3, however, a thin sheen of floating product and strong fuel odors were observed in the bailer from well MW-1.

After initial measurements were completed and recorded, two of the wells were purged by a disposal bailer. Approximately 3 well volumes of groundwater were purged from each well. During the purging process, the groundwater physical property indicators (temperature, pH, and conductivity) were monitored periodically. Purging was considered complete when indicators were stabilized (consecutive readings within 10% of each other) and the purged water was relatively free of visible sediments.

Groundwater sampling was conducted after the water level recovered to at least 80% of the initial measurement, recorded prior to purging. The groundwater sample was collected by using a disposable bailer that was discarded after each well sampling event to avoid cross-contamination. Upon retrieval of the disposable bailer, the retained water was carefully transferred to appropriate pre-cleaned glassware furnished by the analytical laboratory. A special adapter fitted to the bottom end of the bailer was used to minimize the loss of volatile organics during transfer. All sample containers were fitted with a Teflon lined septum/cap and filled such that no headspace was present. After the water samples were properly transferred to the appropriate container, the containers were labeled and immediately placed on ice to preserve its chemical characteristics. A well sampling log was maintained during the sampling event and copies of the logs are included in Appendix B.

Samples were field stored and transported in an insulated cooler filled with crushed ice and transported to the analytical laboratory. All samples were transported to the laboratory under proper chain of custody documentation from the time of collection to the time of arrival at the laboratory.

To avoid cross-contamination, all groundwater sampling equipment that came in contact with the groundwater was thoroughly cleansed by washing it in Alconox (a non-phosphor detergent) solution and rinsed with distilled water prior to each well sampling event. All purged water was temporarily stored on-site in a labeled DOT-approved 55-gallon steel drum awaiting test results to determine the proper disposal method.

## **IV. MONITORING RESULTS**

### **A. Groundwater Conditions**

Groundwater gradient and flow direction for this monitoring event was not calculated due to the lack of groundwater in well MW-2; it is necessary to have three groundwater elevation points to calculate groundwater gradient and flow. Groundwater gradient and flow direction during the previous monitoring event was calculated to be at 0.009 ft/ft and to the southwest. Groundwater surface elevations were at their lowest levels measured during this investigation. Specifically, groundwater surface elevation measurements were 1.5 feet lower in wells MW-1 and MW-3 during



this quarter than last measured in July 2002. A cumulative summary of groundwater surface elevation measurements is presented on Table 1 in the TABLES section of this report.

## **B. Laboratory Analyses**

The groundwater samples were forwarded to Severn Trent Laboratory (STL) of Pleasanton, California, a state certified analytical laboratory, for chemical analyses. Analyses performed on the groundwater samples included total petroleum hydrocarbons in the gasoline, diesel, and motor oil ranges (TPH-G, TPH-D, TPH-mo), fuel related volatile organic compounds: benzene, toluene, ethylbenzene, and xylenes (BTEX) by gas chromatography (EPA method 8015M), and the fuel oxygenate methyl tert-butyl ether (MTBE) by EPA method 8260B.

The results of groundwater monitoring for the third quarter of 2002 indicates that target analytes were detected in the groundwater samples collected from MW-1. Concentrations of TPH-G, TPH-D and BTEX increased from non-detectable levels measured in March 2002 to historic highs (42,000 ppb TPH-G, 8,400 ppb TPH-D, 2,600 ppb benzene, 3,300 ppb toluene, 1,800 ppb ethylbenzene, and 10,000 ppb xylene). No groundwater samples were collected from MW-2 because the well was dry. TPH-G, TPH-D and BTEX were not detected in the samples collected from MW-3 which is in agreement with historical sampling data. TPH-mo and MTBE have not been detected in any of the wells during the six rounds of groundwater sampling of the wells performed at the site.

A review of laboratory internal quality assurance/quality control (QA/QC) report indicates the method blank and sample spike data are within the laboratory recovery limits. The laboratory QA/QC report indicated that the groundwater samples were analyzed within the acceptable EPA holding time.

Based on the laboratory QA/QC report, the analysis data from STL are considered to be of good quality, however, an analysis and result flag was noted for analysis of TPH-D for sample MW-1. There was a result flag because the hydrocarbon reported did not match the pattern of the lab's diesel standard, and the surrogate recovery was not reportable due to required sample dilution. This result flag is typical for the analysis conducted. A copy of the laboratory analytical reports and chain-of-custody records are presented in the LABORATORY RESULTS section of this report. A cumulative summary of the analytical results is presented on Table 2.

## **V. CONCLUSIONS AND RECOMMENDATIONS**

A review of the monitoring data indicate that wells MW-1 and MW-3 are located downgradient of the probable locations of the former USTs, conveyance lines and pump island and therefore are well suited to monitor groundwater conditions. Currently, evidence of groundwater impacts, due to historic use of petroleum hydrocarbons are being detected in MW-1 on a periodic frequency. Elevated concentrations of TPH-G, TPH-D and BTEX during September 1999, July 2002 and

October 2002 coincide with groundwater surface elevation measurements in the range of 13 feet MSL or less. Non-detectable concentrations (March 1999 and March 2002) coincided with groundwater elevation measurements in the 17 to 18 feet MSL range. Continued groundwater quality monitoring is necessary to confirm this trend.

AllWest recommends that the groundwater monitoring continue in accordance with AllWest's March 8, 2002 Work Plan. In accordance with a February 20, 2002 e-mail from Eva Chu of the ACEHS, the following modifications have been made: 1) discontinue the analysis for ether oxygenates from the sampling program, including MTBE monitoring, and 2) delay the requirement of a Risk Based Corrective Analysis (RBCA) assessment.

AllWest also recommends that a copy of this report should be submitted to the Alameda County Environmental Health Services ( ACEHS ) to fulfill the agency reporting requirements. In accordance with the March 2002 Work Plan and verbal concurrence with the ACEHS, AllWest will complete a Conceptual Site Model (CSM) and compare groundwater monitoring results to risk-based screening levels in January 2003, after the results of the fourth quarter 2002 sampling event are known. The fourth quarter sampling event is scheduled for January 2003

## **VI. REPORT LIMITATIONS**

The work described in this report is performed in accordance with the Environmental Consulting Agreement between Mr. David Thompson and AllWest Environmental, dated January 11, 2002. AllWest has prepared this report for the exclusive use of Mr. David Thompson for this particular project and in accordance with generally accepted practices at the time of the work. No other warranties, certifications or representation, either expressed or implied are made as to the professional advice offered. The services provided for Mr. David Thompson were limited to their specific requirements; the limited scope allows for AllWest to form no more than an opinion of the actual site conditions. No matter how much research and sampling may be performed the only way to know about the actual composition and condition of the subsurface of a site is through excavation.

The conclusions and recommendations contained in this report are made based on observed conditions existing at the site, laboratory test results of the submitted samples, and interpretation of a limited data set. It must be recognized that changes can occur in subsurface conditions due to site use or other reasons. Furthermore, the distribution of chemical concentrations in the subsurface can vary spatially and over time. The results of chemical analysis are valid as of the date and at the sampling location only. AllWest cannot be held accountable for the accuracy of the test data from an independent laboratories nor for any analyte quantities falling below the recognized standard detection limits for the method utilized by the independent laboratories

# TABLES

Table 1

SUMMARY OF GROUNDWATER ELEVATION MEASUREMENTS

900 Central Avenue, Alameda, California

Well Number	Well Casing Elevation <sup>2</sup>	Date of Measurement	Depth to Groundwater <sup>3</sup>	Groundwater Surface Elevation <sup>2</sup>
MW-1	+ 25.17'	11/27/1998	11.77'	+ 13.40'
		03/12/1999	6.59'	+ 18.58'
		06/01/1999	8.71'	+ 16.46'
		09/03/1999	11.79'	+ 13.38'
		03/29/2002	8.32'	+ 16.85'
		07/15/2002	11.39'	+ 13.78'
		10/03/2002	12.88'	+ 12.29'
MW-2	+ 25.12'	11/27/1998	11.76'	+ 13.45'
		03/12/1999	6.53'	+ 18.59'
		06/01/1999	8.56'	+ 16.56'
		09/03/1999	11.60'	+ 13.52'
		03/29/2002	8.10'	+ 17.02'
		07/15/2002	10.92'	+ 14.17'
		10/03/2002	>12.12'	Dry
MW-3	+ 24.58'	11/27/1998	11.41'	+ 13.17'
		03/12/1999	6.01'	+ 18.57'
		06/01/1999	8.16'	+ 16.42'
		09/03/1999	11.27'	+ 13.31'
		03/29/2002	7.78'	+ 16.80'
		07/15/2002	10.82'	+ 13.76'
		10/03/2002	12.28'	+ 12.30'

Notes:

1. Wells MW-1, MW-2 and MW-3 were installed on November 16, 1998
2. Feet above mean sea level (MSL)
3. Below the top of well casing
4. "Dry" indicates that no water was in the well at the time of measurement; 12.12' is the depth to the bottom of the well

Table 2

SUMMARY OF ANALYTICAL RESULTS

900 Central Avenue, Alameda, California

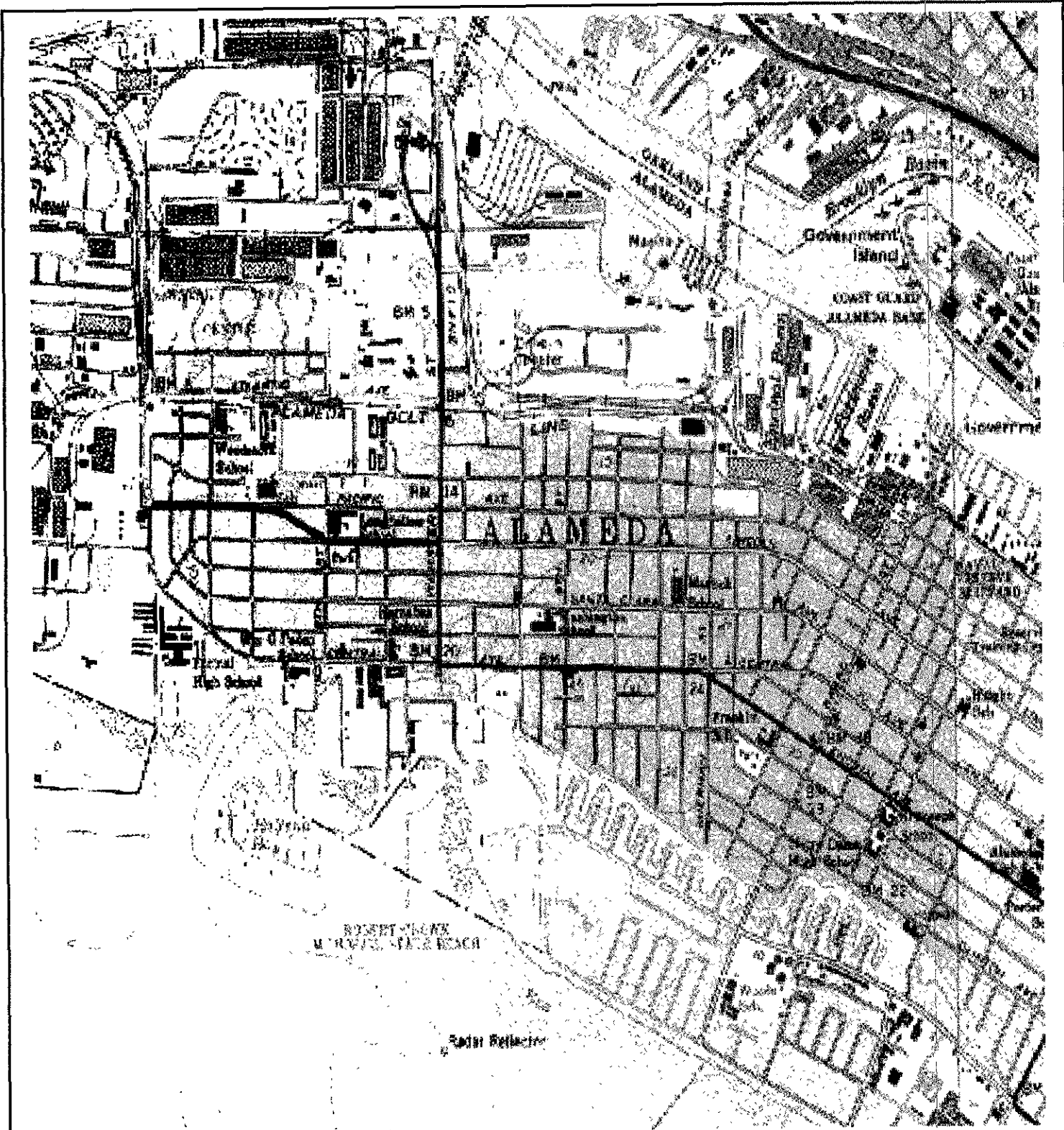
Well Number	Sampling Date	TPH-g	Benzene	Toluene	Ethyl-benzene	Xylene	MTBE	TPH-d	TPH-mo
MW-1	11/27/1998	360	5.8	5.5	9.2	40	< 5	< 50	< 500
	03/12/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	06/01/1999	930	< 0.5	19	52	230	< 5	540	< 500
	09/03/1999	14,000	300	1,900	890	5,600	< 5	2,100	< 500
	03/29/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	61	< 610
	07/15/2002	39,000	1,700	2,900	1,800	7,800	< 10	4,200	< 5000
	10/03/2002	42,000	2,600	3,300	1,800	10,000	< 500	8,400	< 2500
MW-2	11/27/1998	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	03/12/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	06/01/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	09/03/1999	< 50	< 0.5	< 0.5	< 0.5	1.8	< 5	< 50	< 500
	03/29/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 50	< 500
	07/15/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 50	< 500
	10/03/2002	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	11/27/1998	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	03/12/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	06/01/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	09/03/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
	03/29/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 50	< 500
	07/15/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	110	< 500
	10/03/2002	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 50	< 500
MCLs		n/a	1(5)	150 (1000)	700 (700)	1750 (10000)	n/a	n/a	n/a

Notes:


1. TPH-g, TPH-d, and TPH-m stands for total petroleum hydrocarbons in the gasoline, diesel, and motor oil range, respectively.
2. All concentrations are in units of  $\mu\text{g/L}$ , equivalent to parts per billion (ppb)
3. <x stands for non-detected at or above the method reporting limit of x
4. Analytical results were reported by Chromalab. Analytical methods are U.S. EPA methods 8015-mod and 8020
5. MCLs stands for maximum contaminant levels in ppb. First MCL listed is California Department of Health Services primary MCL and the MCL listed in parenthesis is U.S. EPA primary MCL. MCL values are in ppb. n/a stands for no MCL available.
6. NS stands for not sampled, due to a dry well at the time of sampling.



# FIGURES



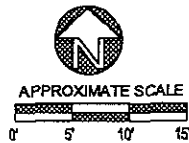
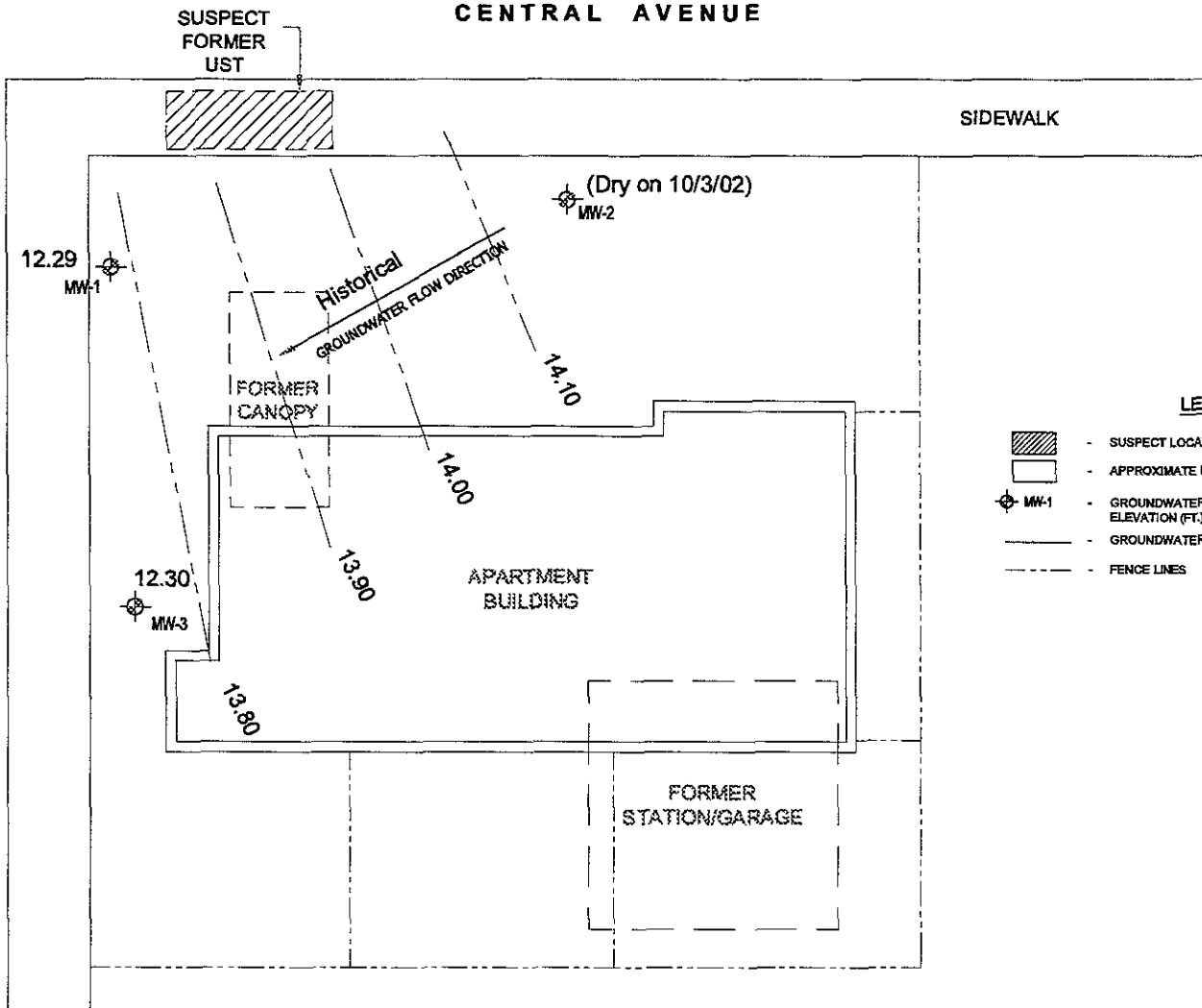
PLEASE DON'T COPY. © 1996 WORLDVIEW PRODUCTIONS. WWW.WORLDVIEW.COM

	SITE LOCATION MAP
	FIGURE 1
	900 CENTRAL AVENUE
	ALAMEDA, CALIFORNIA
	SOURCE: ALLWEST
PROJECT NO.	PREPARED BY: ELIZA YU
22002.28	DATE: 10/10/2002









NINTH STREET

CENTRAL AVENUE



**LEGEND**

-  - SUSPECT LOCATION OF FORMER UNDERGROUND TANKS
-  - APPROXIMATE LOCATION OF FORMER STRUCTURES
-  MW-1 - GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION (FT.)
-  - GROUNDWATER CONTOUR LINE (FT. MSL)
-  - FENCE LINES

	WELL LOCATIONS AND GW ELEVATIONS	
	FIGURE 2	
AllWest	900 CENTRAL AVENUE	
	ALAMEDA, CALIFORNIA	
	SOURCE: ALLWEST	
PROJECT NO. 22002.28	PREPARED BY: I.R.R. (10/3/02)	

# LABORATORY RESULTS

Submission#: 2002-10-0113

October 10, 2002

SEVERN

TRENT

LABORATORY

**Allwest Environmental**  
530 Howard Street, Suite #300  
San Francisco, CA 94105  
Attn.: James Koniuto  
Project#: 22002.28  
Project: Central Monitor

STL San Francisco  
1220 Quarry Ln  
Pleasanton CA 94566

Tel.: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

CA DHS ELAP#:2496

Attached is our report for your samples received on 10/03/2002 16:02  
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  
11/17/2002 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: [vvancil@chromalab.com](mailto:vvancil@chromalab.com)

Sincerely,



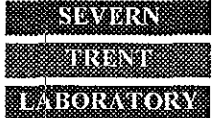
Vincent Vancil  
Project Manager

Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

Allwest Environmental  
Attn.: James Koniuto  
530 Howard Street, Suite #300  
San Francisco, CA 94105  
Phone: (415) 391-2510 Fax: (415) 391-2008  
Project: 22002.28  
Central Monitor

Received: 10/03/2002 16:02



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Pleasanton, CA 94566

Tel: (925) 484-1919  
Fax: (925) 484-1096  
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www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	10/03/2002 11:00	Water	1
MW-3	10/03/2002 10:35	Water	2

Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

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www.chromalab.com

CA DHS ELAP# 2496

Prep(s): 3510/8015M Test(s): 8015M  
Sample ID: MW-1 Lab ID: 2002-10-0113-1  
Sampled: 10/03/2002 11:00 Extracted: 10/4/2002 17:19  
Matrix: \*Water QC Batch#: 2002/10/04-07-10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	8400	250	ug/L	5.00	10/07/2002 13:48	ndp
Motor Oil	ND	2500	ug/L	5.00	10/07/2002 13:48	
<i>Surrogates(s)</i>						
o-Terphenyl	NA	60-130	%	5.00	10/07/2002 13:48	sd

Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

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530 Howard Street, Suite #300  
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Project: 22002.28  
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CA DHS ELAP# 2496

Prep(s): 3510/8015M Test(s): 8015M  
Sample ID: MW-3 Lab ID: 2002-10-0113 - 2  
Sampled: 10/03/2002 10:35 Extracted: 10/4/2002 17:19  
Matrix: Water QC Batch#: 2002/10/04-07.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/07/2002 08:31	
Motor Oil	ND	500	ug/L	1.00	10/07/2002 08:31	
<i>Surrogates(s)</i>						
o-Terphenyl	74.8	60-130	%	1.00	10/07/2002 08:31	

Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

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www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Method: Blank

Water

QC Batch # 2002/10/04-07.10

MB: 2002/10/04-07.10-001

Date Extracted: 10/04/2002 17:19

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	10/07/2002 07:15	
Motor Oil	ND	500	ug/L	10/07/2002 07:15	
<b>Surrogates(s)</b> o-Terphenyl	87.7	60-130	%	10/07/2002 07:15	

Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

Allwest Environmental  
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530 Howard Street, Suite #300  
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Phone: (415) 391-2510 Fax: (415) 391-2008  
Project: 22002.28  
Central Monitor

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www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/10/04-07.10

LCS: 2002/10/04-07.10-002

Extracted: 10/04/2002

Analyzed: 10/07/2002 05:58

LCSD: 2002/10/04-07.10-003

Extracted: 10/04/2002

Analyzed: 10/07/2002 06:36

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Diesel	1000	1080	1250	80.0	86.4	7.7	60-130	25		
Surrogates(s) o-Terphenyl	18.6	19.2	20.0	92.8	96.0		60-130	0		

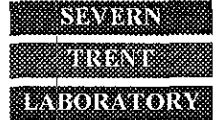


Submission #: 2002-10-0113

Total Extractable Petroleum Hydrocarbons (TEPH)

Allwest Environmental  
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530 Howard Street, Suite #300  
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Project: 22002.28  
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CA DHS ELAP# 2496

---

Legend and Notes

---

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

sd

Surrogate recovery not reportable due to required dilution.

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

Allwest Environmental

Attn.: James Koniuto

530 Howard Street, Suite #300

San Francisco, CA 94105

Phone: (415) 391-2510 Fax: (415) 391-2008

Project: 22002.28

Central Monitor

Received: 10/03/2002 16:02

SEVERN

TRENT

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CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	10/03/2002 11:00	Water	1
MW-3	10/03/2002 10:35	Water	2

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

Allwest Environmental  
Attn.: James Koniuto  
530 Howard Street, Suite #300  
San Francisco, CA 94105  
Phone: (415) 391-2510 Fax: (415) 391-2008

Project: 22002.28  
Central Monitor

Received: 10/03/2002 16:02

SEVERN  
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Tel: (925) 484-1919  
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CA DHS ELAP# 2496

Prep(s): 5030 Test(s): 8015M  
5030 8021B  
Sample ID: MW-1 Lab ID: 2002-10-0113-1  
Sampled: 10/03/2002 11:00 Extracted: 10/9/2002 13:52  
Matrix: Water QC Batch#: 2002/10/09-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	42000	5000	ug/L	100.00	10/09/2002 13:52	
Benzene	2600	50	ug/L	100.00	10/09/2002 13:52	
Toluene	3300	50	ug/L	100.00	10/09/2002 13:52	
Ethyl benzene	1800	50	ug/L	100.00	10/09/2002 13:52	
Xylene(s)	10000	50	ug/L	100.00	10/09/2002 13:52	
MTBE	ND	500	ug/L	100.00	10/09/2002 13:52	
<b>Surrogates(s)</b>						
Trifluorotoluene	106.6	58-124	%	1.00	10/09/2002 13:52	
4-Bromofluorobenzene-FID	98.9	50-150	%	1.00	10/09/2002 13:52	

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

Allwest Environmental  
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530 Howard Street, Suite #300  
San Francisco, CA 94105  
Phone: (415) 391-2510 Fax: (415) 391-2008  
Project: 22002.28  
Central Monitor

Received: 10/03/2002 16:02

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www.stl-inc.com  
www.chromalab.com  
CA DHS ELAP# 2496

Prep(s): 5030  
5030  
Sample ID: MW-3  
Sampled: 10/03/2002 10:35  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-10-0113 - 2  
Extracted: 10/9/2002 14:26  
QC Batch#: 2002/10/09-01:02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/09/2002 14:26	
Benzene	ND	0.50	ug/L	1.00	10/09/2002 14:26	
Toluene	ND	0.50	ug/L	1.00	10/09/2002 14:26	
Ethyl benzene	ND	0.50	ug/L	1.00	10/09/2002 14:26	
Xylene(s)	ND	0.50	ug/L	1.00	10/09/2002 14:26	
MTBE	ND	5.0	ug/L	1.00	10/09/2002 14:26	
<b>Surrogates(s)</b>						
Trifluorotoluene	94.2	58-124	%	1.00	10/09/2002 14:26	
4-Bromofluorobenzene-FID	94.9	50-150	%	1.00	10/09/2002 14:26	

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

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Project: 22002.28  
Central Monitor

Received: 10/03/2002 16:02

**SEVERN**  
**TRENT**  
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Fax: (925) 484-1096  
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www.chromalab.com

CA DHS ELAP# 2496

**Batch QC Report**

Prep(s): 5030

Method Blank

MB: 2002/10/09-01.02-003

Water

Test(s): 8015M

QC Batch # 2002/10/09-01.02

Date Extracted: 10/09/2002 08:14

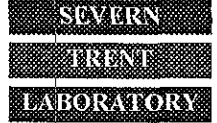
Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/09/2002 08:14	
Benzene	ND	0.5	ug/L	10/09/2002 08:14	
Toluene	ND	0.5	ug/L	10/09/2002 08:14	
Ethyl benzene	ND	0.5	ug/L	10/09/2002 08:14	
Xylene(s)	ND	0.5	ug/L	10/09/2002 08:14	
MTBE	ND	5.0	ug/L	10/09/2002 08:14	
<b>Surrogates(s)</b>					
Trifluorotoluene	98.1	58-124	%	10/09/2002 08:14	
4-Bromofluorobenzene-FID	100.2	50-150	%	10/09/2002 08:14	

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

Allwest Environmental  
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Project: 22002.28  
Central Monitor

Received: 10/03/2002 16:02



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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike

Water

QC Batch # 2002/10/09-01.02

LCS 2002/10/09-01.02-004

Extracted: 10/09/2002

Analyzed: 10/09/2002 08:48

LCSD 2002/10/09-01.02-005

Extracted: 10/09/2002

Analyzed: 10/09/2002 09:22

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	100	97.3	100.0	100.0	97.3	2.7	77-123	20		
Toluene	105	103	100.0	105.0	103.0	1.9	78-122	20		
Ethyl benzene	101	98.8	100.0	101.0	98.8	2.2	70-130	20		
Xylene(s)	315	309	300	105.0	103.0	1.9	75-125	20		
<b>Surrogates(s)</b>										
Trifluorotoluene	484	490	500	96.8	98.0		58-124			

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

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Project: 22002.28

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/10/09-01.02

LCS 2002/10/09-01.02-006

Extracted: 10/09/2002

Analyzed: 10/09/2002 09:56

LCSD 2002/10/09-01.02-007

Extracted: 10/09/2002

Analyzed: 10/09/2002 10:30

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	505	484	500	101.0	96.8	4.2	75-125	20		
<b>Surrogates(s)</b>										
4-Bromofluorobenzene-FID	540	518	500	108.0	103.6		50-150			

Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Matrix Spike (MS / MSD)

Water

QC Batch # 2002/10/09-01.02

MW-3 >> MS

Lab ID: 2002-10-0113 - 002

MS: 2002/10/09-01.02-023

Extracted: 10/09/2002

Analyzed: 10/09/2002 20:21

Dilution: 1.00

MSD: 2002/10/09-01.02-024

Extracted: 10/09/2002

Analyzed: 10/09/2002 20:56

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	70.3	80.1	ND	100.0	70.3	80.1	13.0	65-135	20		
Toluene	71.6	81.1	ND	100.0	71.6	81.1	12.4	65-135	20		
Ethyl benzene	66.1	74.5	ND	100.0	66.1	74.5	11.9	65-135	20		
Xylene(s)	204	225	ND	300	68.0	75.0	9.8	65-135	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	359	403		500	71.8	80.6		58-124			



Submission #: 2002-10-0113

Gas/BTEX Compounds by 8015M/8021

Allwest Environmental

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San Francisco, CA 94105

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Matrix Spike (MS / MSD)

Water

QC Batch # 2002/10/09-01-02

MW-3 >> MS

Lab ID: 2002-10-0113 - 002

MS: 2002/10/09-01-02-025

Extracted: 10/09/2002

Analyzed: 10/09/2002 21:30

Dilution: 1.00

MSD: 2002/10/09-01-02-026

Extracted: 10/09/2002

Analyzed: 10/09/2002 22:04

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level ug/L	Recovery			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	383	415	ND	500	76.6	83.0	8.0	65-135	20		
Surrogate(s) 4-Bromofluorobenzene-FID	489	502		500	97.8	100.4		50-150			

# CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

1220 Quarry Lane • Pleasanton, California 94566-4756  
(925) 484-1919 • Fax (925) 484-1096

Reference #

## Chain of Custody

DATE 10/2/02 PAGE 1 OF 1

### ANALYSIS REPORT

PILOJ MGR JAMES KONIUTO  
 COMPANY ALLWEST ENVIRONMENTAL  
 ADDRESS 550 HOWARD ST., STE. 300  
SAN FRANCISCO, CA 94105  
 SAMPLE NO. (SIGNAL) 415-391-2510 (PHONE NO.)  
415-391-2008 (FAX NO.)

SAMPLE ID	DATE	TIME	MATRIX	PRESERV.	TPH-IEPA 8015, 8020 <input checked="" type="checkbox"/> Gas w/ <input checked="" type="checkbox"/> BTEX <input checked="" type="checkbox"/> MTBE	PURGEABLE AROMATICS BTEX (EPA 8020)	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) <input checked="" type="checkbox"/> Diesel <input checked="" type="checkbox"/> Other	PURGEABLE HALOCARBONS (HVOCs) (EPA 8010)	VOLATILE ORGANICS (VOCs) (EPA 8260)	SEMIVOLATILES (EPA 8270)	TOTAL OIL AND GREASE (SM 5520 B - F, E + F)	PESTICIDES (EPA 8080) PCB's (EPA 8080)	PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	Spec. Cond. <input type="checkbox"/> TSS <input type="checkbox"/> TDS	LUFT METALS: Cd, Cr, Pb, Ni, Zn	CAM 17 METALS (EPA 6010/7470/7471)	TOTAL LEAD	W.E.T. (STLC) <input type="checkbox"/> TCLP	Hexavalent Chromium <input type="checkbox"/> pH (24 hr hold time for H2O)	NUMBER OF CONTAINERS	
MW-1	10/2/02	1100	Water	4°C	X			X													4	
<del>MW-2</del>					<del>X</del>			<del>X</del>														0
MW-3		1035			X			X														4
																						8

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJECT NAME: <u>Central Monitor</u>	TOTAL NO OF CONTAINERS <u>8</u>	HEAD SPACE	TEMPERATURE
PROJECT NUMBER <u>22002.28</u>	CONFORMS TO RECORD		
P.O. # <u>22002.28</u>			
TAT	STANDARD 5-DAY	24	48
		72	OTHER

SPECIAL INSTRUCTIONS/COMMENTS.  
 Report:  Routine  Level 2  Level 3  Level 4  Electronic Report

RELINQUISHED BY 1 <u>Ambrin</u> 1:46pm (SIGNATURE) (TIME) <u>Elizav</u> Oct 3 (PRINTED NAME) (DATE) <u>all west</u> (COMPANY)	RELINQUISHED BY 2 <u>ERDene</u> (SIGNATURE) (TIME) <u>Go Couriers</u> (PRINTED NAME) (DATE) (COMPANY)	RELINQUISHED BY 3
RECEIVED BY 1 <u>ERDene</u> (SIGNATURE) (TIME) <u>Go Couriers</u> (PRINTED NAME) (DATE) (COMPANY)	RECEIVED BY 2	RECEIVED BY (LABORATORY) 3

# Appendix A

# Groundwater Monitoring Well Sampling Field Log

Project No.: 22002.28

Project Name: Central Monitor

Well No.: MW-1

Well Location: 900 Central Ave. Alameda

Well Depth: 18.23 (ft.)

Casing Diameter: 2 (in.)

Depth to Water: 12.88 (ft.)

Date: 10/3/02 Time: 1045

Water Column in Well: 5.35 (ft.)  $\times 17$  Well Volume: 0.91 (gal.)  $\times 3 = 27$

Odor? Yes Free Product? <sup>No</sup> Sludat sheet Thickness: N/A

Purging Method: Hand Pump  Submersible Pump  Bailer  Other

Time	pH	Conduc. (μS)	Temp. (°C/F)	Water Level	Volume Removed	Remark
1045	6.59	698	65.9	NM	0.25	clear
1050	6.61	686	66.8		1.0	silty brown
1055	6.62	682	67.0		2.0	light brown
1100	6.60	675	66.9	↓	2.7	"

Purging Start Time: 1045 Purging Stop Time: 1100

Total Volume Purged: 2.7 (gal.) Well Dewater? No

Water Level Prior to Sampling:      (ft.) Time:     

Sampling Method: Teflon Bailer  Disposable Bailer  Sampling Pump

Sample Collected: TPH-g/B/CX, TPH-d no Sample No.: MW-1

Remark:     

Sampler: JSK

Date/Time: 10/3/02 1100

# Groundwater Monitoring Well Sampling Field Log

Project No.: 22002.28

Project Name: Centrak Monitor

Well No.: MW-2

Well Location: 900 Central Ave. Alameda

Well Depth: 12.12 (ft.)

Casing Diameter: 2 (in.)

Depth to Water: DRY (ft.)

Date: 10/3/02 Time: 0955

Water Column in Well: NM (ft.)

Well Volume: NM (gal.)

Odor? No

Free Product? —

Thickness: —

Purging Method: Hand Pump — Submersible Pump — Bailer  Other —

Time	pH	Conduc. (µS)	Temp. (°C)	Water Level	Volume Removed	Remark
<u>DRY</u>	<u>WELL</u>					

Purging Start Time: NA

Purging Stop Time: NA

Total Volume Purged: \_\_\_\_\_ (gal.)

Well Dewater? \_\_\_\_\_

Water Level Prior to Sampling: \_\_\_\_\_ (ft.) Time: \_\_\_\_\_

Sampling Method: Teflon Bailer \_\_\_\_\_ Disposable Bailer \_\_\_\_\_ Sampling Pump \_\_\_\_\_

Sample Collected: None

Sample No.: \_\_\_\_\_

Remark: Dry well

Sampler: JSA

Date/Time: 10/3/02

# Groundwater Monitoring Well Sampling Field Log

Project No.: 22002.28

Project Name: Central Monitor

Well No.: MW-3

Well Location: 900 Central Ave. Alameda

Well Depth: 18.08 (ft.)

Casing Diameter: 2 (in.)

Depth to Water: 12.28 (ft.)

Date: 10/3/02 Time: 1015

Water Column in Well: 5.80 (ft.) x 17 Well Volume: 0.99 (gal.) x 3 = 3.0

Odor? No Free Product? No Thickness: NA

Purging Method: Hand Pump  Submersible Pump  Bailer  Other

Time	pH	Conduc. (µS)	Temp. (°C/F)	Water Level	Volume Removed	Remark
1020	7.15	375	67.2	NM	0.25	clean
1025	6.82	306	68.0	/	1.0	light brown
1030	6.59	364	68.0		2.0	"
1035	6.54	358	66.7		3.0	"

Purging Start Time: 1015

Purging Stop Time: 1035

Total Volume Purged: 3.0 (gal.)

Well Dewater? No

Water Level Prior to Sampling:    (ft.) Time:   

Sampling Method: Teflon Bailer  Disposable Bailer  Sampling Pump

Sample Collected: TPH-g/BTEX, TPH-d, MO

Sample No.: MW-3

Remark:   

Sampler: JSK

Date/Time: 10/3/02 1035