



**W. A. Craig, Inc.**

Construction & Engineering

***QUARTERLY MONITORING REPORT***  
***Third Quarter 2004***

**PROJECT SITE:**  
**Express Gas & Mart**  
**2951 High Street**  
**Oakland, California 94619**

**PREPARED FOR:**  
**Mr. Aziz Kandahari**  
**Himalaya Trading Company**  
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**SUBMITTED TO:**  
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**Project No. 3936**

**September 10, 2004**

*Alameda County*  
*SEP 16 2004*  
*Environmental Health*

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# PROFESSIONAL CERTIFICATION

## QUARTERLY MONITORING REPORT

*Third Quarter 2004*


**Express Gas & Mart  
2951 High Street  
Oakland, California 94619**

**By: W.A. Craig, Inc.  
Project No. 3936  
September 10, 2004**

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Brian Milton, P.E.  
Principal Engineer

## INTRODUCTION

This report presents the results of the corrective action and third quarter 2004 groundwater monitoring at Express Gas & Mart, located at 2951 High Street in Oakland, California (the "Site"). The sampling described herein is part of an ongoing characterization of subsurface contamination that was caused by accidental releases from an underground storage tank (UST) system that was replaced in 2001. The contaminant investigation and corrective action are being conducted by W.A. Craig, Inc. (WAC) on behalf of Mr. Aziz Kandahari. The lead regulatory agency overseeing the investigation is the Alameda County Health Care Services, Environmental Health Services, Environmental Protection (Alameda County). Groundwater monitoring this quarter was conducted on July 8, 2004. Installation of an ozone sparging (OS) system began on March 24, 2004, and initial startup of the system occurred on April 14, 2004. Four of the onsite monitoring wells were sampled bi-weekly after the OS system started operating. Treatment system inspection and maintenance are conducted bi-weekly to ensure it is operating properly and to make any necessary repairs or adjustments.

## PHYSICAL SETTING

### *Site Location*

The Site is a self-service gasoline station and convenience store located on the corner of High Street and Penniman Avenue, in southeastern Oakland, California. The Site location is shown on **Figure 1** and Site features are shown on **Figure 2**. The surrounding area is densely developed. Neighboring land uses include commercial and residential developments.

### *Topography and Drainage*

The Site is located about 3½ miles east of the San Francisco Bay. The Site location is near the base of the Oakland Hills, at a surface elevation of approximately 132 feet above mean sea level (amsl). Hilly topography occurs directly southeast of the Site, a short distance beyond High Street. The ground surface at the Site slopes gently toward High Street, but the regional topographic slope is southwesterly away from the Oakland Hills. The nearest surface water body is Peralta Creek located approximately ½ mile north northeast of the Site.

### *Geology and Soils*

The Site area is located on an alluvial apron that extends northwest and southeast between the San Francisco Bay on the west and the northern Diablo Range on the east. The active Hayward Fault forms a structural boundary between the alluvial apron and the Diablo Range. Surficial sediments at the Site have been classified as Holocene-age alluvial fan and fluvial deposits (Helley, E.J. and Graymer, R.W., 1997). These sediments are described as gravelly sand and

sandy gravel that grade into sand and silty clay. The nearby hilly areas directly southeast of the Site are underlain by similar, though older, deposits of Pleistocene age.

WAC drilled and sampled soil borings at the Site to install monitoring wells. Soils encountered in the 25-foot deep borings were predominantly gravelly to sandy silts with some interbedded silt and silty fine sand. Groundwater was positively identified in two of the four borings, at depths of 16 feet below grade (fbg) and 4 fbg. The latter boring was drilled offsite, within the High Street right-of-way.

### *Groundwater*

The Site is within the San Francisco Bay regional watershed. The Quaternary alluvial deposits of the region host beneficial use aquifers. Slightly less than half the region's water supply is derived from groundwater. The balance is obtained from imported surface water. Confined groundwater occurs at a depth of approximately 21 fbg at the Site. The aquifer formation is primarily gravelly sandy silt. Static water levels in the onsite monitoring wells have generally ranged from about 5 to 9 fbg, depending upon the season. Water level data indicate the direction of groundwater flow is southerly. Field measurements of specific conductance (SC) among the monitoring wells have ranged from approximately 400 to 2,000 microsiemens, suggesting that the mineralogical quality of the groundwater is variable.

## **PROJECT BACKGROUND**

The history of subsurface contamination investigations at the Site predates WAC's involvement, which began in 2001. Groundwater monitoring has been conducted periodically at the Site since early 1995. Groundwater quality is impacted by petroleum hydrocarbons such as benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tert-butyl ether (MtBE). A report by Aqua Science Engineers, Inc. (ASE), dated November 14, 2000, indicates that 2,550 pounds of an oxygen releasing compound (ORC®) slurry was injected into borings along the northern and eastern side of the former USTs in June 1997. The ORC® apparently increased the dissolved oxygen (DO) concentrations in the five nearby monitoring wells for approximately one year. Contaminant concentrations decreased slightly in well MW-5 during that period. ORC® socks were installed in wells MW-4 and MW-5 in August 1998 after the DO concentrations declined. The ORC® socks were removed in September 2000 after proving ineffective at reducing petroleum hydrocarbon concentrations in the groundwater.

A Tier 2 Risk-Based Corrective Action (RBCA) analysis was performed for the Site by Mr. Christopher Palmer in August 1997. The RBCA was conducted to develop site-specific threshold levels (SSTLs are listed in **Table 3**) for petroleum hydrocarbon contaminants in soil and groundwater. The RBCA was reviewed and commented on by Alameda County. Alameda County approved the RBCA in a letter dated October 21, 1997.

On February 28, 2001, WAC collected soil samples from along the product line leading to the gas pumps adjacent to High Street. All of the soil samples yielded detectable concentration of petroleum hydrocarbons. Total petroleum hydrocarbons as gasoline (TPH-g) was detected at concentrations ranging from 71 milligrams per kilogram (mg/kg) to 3,600 mg/kg. WAC subsequently prepared a *Site Investigation Workplan* dated March 26, 2001 to conduct a soil and groundwater investigation around the gas pumps. Alameda County approved the workplan and requested that the USTs and contaminated soils be removed and properly disposed.

Six soil borings were drilled and sampled by WAC in late April 2001. Sampling results from the borings yielded TPH-g concentrations in soil up to 4,000 mg/kg and in groundwater up to 78,000 micrograms per liter ( $\mu\text{g/L}$ ), confirming that petroleum hydrocarbons had impacted soil and groundwater. The dispenser pumps, product lines, and four steel gasoline USTs were excavated and removed from the Site by WAC in May 2001. The USTs were inspected and appeared to be in good condition. However, soil samples from the base and the sides of the UST excavation yielded TPH-g concentrations up to 1,700 mg/kg on the west sidewall of the excavation at 8 fbg. WAC excavated additional contaminated soil from the Site in a number of separate phases between May 9 and September 27, 2001. Approximately 3,700 tons of petroleum hydrocarbon contaminated soil was removed and disposed at B&J Class II landfill in Vacaville, California. The over-excavation area is shown on **Figure 2**.

Following Site restoration and re-opening of the Express Gas & Mart, little additional activity occurred until March 2003, when WAC installed four new monitoring wells to obtain further data on the extent of the MtBE contamination in groundwater. Monitoring well construction information is summarized in **Table 1**. WAC also resumed quarterly groundwater monitoring in April 2003, for the first time since the September 2000 sampling reported by ASE. The April 2003 analytical data indicated that MtBE was above the SSTL of 8,400  $\mu\text{g/L}$  in wells MW-5 and MW-7.

Based on the April 2003 groundwater sampling results, WAC recommended corrective action to remediate the subsurface contamination at the Site to below the SSTLs. WAC prepared a *Feasibility Study/Corrective Action Plan* dated July 28, 2003 and an *Addendum to Corrective Action Plan* dated September 10, 2003. Alameda County approved the installation of an OS system in a letter dated February 18, 2004.

An OS system consisting of ten ozone-spargers and a control panel was installed at the Site. Initial startup of the system occurred on April 14, 2004. Prior to the start up, four monitoring wells (MW-5, MW-7, MW-8, and MW-9) were purged and sampled to determine baseline concentrations in groundwater prior to operating the OS system. The system has operated at the Site since April 14, 2004. On July 8, 2004 quarterly groundwater sampling of eight monitoring wells was conducted.

## SCOPE OF WORK

The scope of work performed during this quarter included the following tasks:

- Maintained GeoTracker database;
- Properly disposed of approximately 600 gallons of monitoring well purge water stored on site;
- Purged and sampled wells MW-5, MW-7, MW-8 and MW-9 twice per month in April and May 2004 and once in June 2004;
- Performed bi-weekly inspections and routine maintenance on the ozone sparge system;
- Measured static water levels in eight monitoring wells;
- Purged and sampled groundwater from eight monitoring wells;
- Installed barbed wire and slatted fencing on the treatment system compound;
- Collected field measurements from eight monitoring wells, including water level, DO concentrations, temperature, pH, and SC;
- Analyzed groundwater samples for the following compounds: TPH-g, MtBE, BTEX, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, and 1,2-DCA (see *Laboratory Analyses* section of this report for chemical names and analytical methods used), and;
- Prepared this *Corrective Action and Quarterly Groundwater Monitoring Report*.

## OZONE-SPARGE SYSTEM DESCRIPTION

### *Introduction*

The proposed design and layout of the OS remediation system were initially described in WAC's *Feasibility Study/Corrective Action Plan* dated July 28, 2003 and *Addendum to Corrective Action Plan* dated September 10, 2003. Alameda County approved the work in a letter dated February 18, 2004. A C-Sparger™ OS system was subsequently purchased from Kerfoot Technology, Inc. The C-Sparger™ system is designed to operate up to 10 sparge points. Well permits were obtained from Alameda County prior to installing the OS wells. Installation of the system began on March 24, 2004 and initial startup of the system occurred on April 14, 2004.



### *Ozone-sparge System Description*

The above ground components of the OS remediation system are mounted inside a locked, metal cabinet (the control panel). The equipment housed in the control panel includes an ozone generator, small air compressor, ozone leak detector, programmable timer, electrical wiring/circuits, pressure gauge, run-time clock, cooling fans, and manifold with electromagnetically-actuated solenoids for distributing the pressurized air/ozone mixture to individual sparge points. The ozone generator creates ozone by ionizing oxygen in either ambient air or with the aid of an optional oxygen concentrator. An oxygen concentrator was installed on this system to boost the amount of ozone delivered.

The operating schedule is controlled by an electronic timer. The OS points are operated one at a time for a programmed number of minutes. The timer cycles through all ten sparge points and then has a "rest" period to allow the compressor to cool. After the rest period, a new cycle starts. This process is repeated several times each day. The OS system can deliver ozone at a flow rate of approximately 3 cubic feet per minute (cfm) and a pressure of 50 pounds per square inch (psi). This delivery pressure is usually sufficient to overcome the hydraulic head and other resistive forces at the sparge point. With the oxygen concentrator installed, approximately 5 grams of ozone per hour can be injected into the subsurface.

The control panel was installed near the north corner of the Express Gas & Mart mini-mart as shown on **Figure 2**. The control panel was mounted on a plywood backboard mounted on two pieces of uni-strut bolted to the concrete with wedge anchors. An electrical power supply outlet and circuit breaker box for the system were installed on the plywood backboard alongside the control panel. The incoming electrical power line from the main electrical panel is enclosed within a galvanized steel conduit.

The working portion of an OS point is a 30-inch length of 2-inch diameter, porous PVC casing (diffuser) placed at the bottom of each sparge well. The sparge point section is analogous to a well screen, but has much finer openings (pores). A 3/4-inch diameter PVC riser extends from the sparge point up to within 12 inches of ground surface. Fine-grained sand was placed in the annular space of the borehole around each of the sparge points. The tiny pores of the sparge point and the fine-grained filter pack combine to help create microbubbles during sparging. A bentonite plug was placed at the bottom of the borehole and hydrated to fill the space below the desired sparge point depth. Graded sand (#60) was placed in the annular space between the sparge point and the borehole wall from the top of the bentonite plug to approximately 2 feet above the top of the sparge point. A 2-foot thick bentonite seal was placed above the sand filter pack and hydrated prior to grouting the remainder of the annulus with Portland type I/II neat cement. A traffic-rated vault set slightly above grade protects the top of each riser pipe at the surface. Teflon™ and PVC fittings are used within the well vaults to connect the riser pipe of

each OS point to its supply line. An in-line check-valve within each vault prevents back flow out of the sparge point.

The existing concrete and asphalt pavement were sawcut and broken up with jackhammers in order to lay the sparge lines. Supply lines extend separately from the ozone generator panel to each sparge point within common trenches. The location of the trenches is shown on **Figure 2**. The supply lines consist of 3/8-inch inside diameter (ID), flexible polyethylene tubing enclosed within a secondary protective conduit of 7/8-inch ID high-density polyethylene (HDPE) tubing. The lines were installed in 24-inch deep by 16-inch wide trenches. Approximately 120 feet of trench was sawcut in the existing concrete and asphalt at the Site. The asphalt and concrete were demolished, removed, loaded, and hauled to Davis Street Transfer Station in San Leandro, California for recycling. Controlled density fill was placed in the trench to approximately four inches below grade. The top four inches of the trench was filled with asphaltic concrete to match the existing surface grade.

WAC recommended installing barbed wire and slats on the fence of the OS system equipment compound to prevent tampering or vandalism. The recommendations were approved by Alameda County and the barbed wire and slats were installed August of 2004.

#### ***Sparge Point Construction***

OS wells SP-1 through SP-10 were installed on March 24, 25, and 26, 2004. The well locations are shown on **Figure 2**. Resonant Sonic International (RSI, C-57 License No. 802334) installed the wells. The well borings were advanced by a sonic drill rig to a maximum of 37 fbg using 7-inch diameter casing. Well SP-3 was advanced using hollow stem augers. A California Professional Engineer supervised the drilling.

#### ***Ozone-sparge System Start-up and Operation***

The OS system started initial operation on April 14, 2004. WAC staff visited the Site bi-weekly to ensure that the OS system was running normally and to monitor the operating pressures. On April 15, a leak was detected in the hose supplying SP-5 with ozone. SP-5 was shut off on April 15. On April 29, the hose to SP-5 was replaced and SP-5 was turned on and operated normally since then. The operating time was adjusted on April 29, 2004. A table of the operating pressures of each sparge point is included as **Appendix A**.

#### ***Ozone-sparge Well Surveying***

The 10 new ozone-sparge wells were surveyed on April 22, 2004 by Virgil Chavez Land Surveying (PLS number 6323). The benchmark for the survey was a cut square in the southeasterly return of the southern corner of the intersection of High Street and MacArthur Boulevard. The horizontal control data are based on the California State Coordinate System,

Zone III (NAD83). The vertical control data are based on the benchmark elevation of 177.397 feet (NGVD 29).

## **FIELD PROCEDURES**

### ***Groundwater Level Measurements***

WAC staff measured the static water level in all eight of the monitoring wells on July 8, 2004. The water levels in the monitoring wells were obtained using an electronic water level indicator and recorded on monitoring well sampling logs included in **Appendix B**. Prior to the measurements, the wells were uncapped and water levels were allowed to equilibrate with atmospheric pressure for at least 30 minutes. Water level measurements were referenced to the surveyed top of the well casings. The depth-to-water measurements were used to calculate the standing well volume and the amount of water to be purged prior to collecting groundwater samples. The depth to water and surveyed wellhead elevations are also used to determine the static groundwater elevation and flow direction.

### ***Monitoring Well Purging and Sampling***

WAC purged and samples wells MW-5, MW-7, MW-8, and MW-9 immediately prior to starting the ozone system on April 14, 2004 and bi-weekly on four occasions between April 29 and June 10, 2004. WAC staff purged and sampled all monitoring wells on July 8, 2004. At least three well casing volumes of water were purged from each well before collecting groundwater samples. Wells were purged using a clean disposable polyethylene bailer. The DO concentration, pH, temperature, and SC of the groundwater were intermittently monitored with portable instrumentation during purging. The DO concentration was measured in-situ immediately after uncapping the well, after purging one well casing volume, and after sampling the well. Field measurements were recorded on the monitoring well sampling logs.

The water level indicator and the instrument probes were decontaminated after each use by washing in an Alconox® detergent solution followed by a tap water rinse. Well purge water was placed into 55-gallon drums for temporary onsite storage. The drums are emptied as needed and the purge water is disposed of at a licensed disposal facility.

Upon completion of purging activities, groundwater samples were collected from each monitoring well using a disposable polyethylene bailer. The groundwater samples were decanted from the bailer into laboratory-supplied, 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid (HCl). Care was taken to ensure that the vials were completely filled, leaving no headspace. Each sample container was labeled with the well ID, project number, and date collected. Labeled samples were stored in an ice chest cooled with ice until delivery to the laboratory under chain-of-custody control.

### *Laboratory Analyses*

The groundwater samples were submitted under chain-of-custody control to a California Department of Health Services (DHS) certified analytical laboratory. The samples were analyzed for TPH-g using EPA Method 8015C (modified), for BTEX and MtBE using EPA Method 8021B, and for MtBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (EtBE), tert-amyl methyl ether (tAME), tert-butanol (tBA), methanol, ethanol, ethylene dibromide (EDB), and 1,2-dichloroethane (DCA) using EPA Method 8260B. Discussions in this report will cite MtBE concentrations determined by EPA Method 8260B, which is considered a more accurate analysis than Method 8021B.

## DATA EVALUATION

### *Groundwater Levels and Gradient*

Water level data for the monitoring wells are summarized in **Table 2**. The surveyed top of casing (TOC) elevations and the depth to static water measurements in monitoring wells were used to calculate groundwater elevations at the Site. The depth to water on July 8, 2004 ranged from 7.45 feet below the TOC in MW-8 to 13.92 feet below the TOC in MW-7. Except for monitoring well MW-7, the groundwater elevations decreased in all monitoring wells since the last site visit, on June 10, 2004. Groundwater elevations in the monitoring wells on July 8, 2004 varied from 117.01 feet amsl in well MW-7 to 124.57 feet amsl in MW-6.

Groundwater elevations on July 8, 2004 are shown on **Figure 3**. Groundwater elevations indicate that the direction of groundwater flow is southerly. The groundwater gradient was calculated using static water elevations in wells MW-3, MW-8, and MW-9. On July 8, 2004 the groundwater flow direction was S23°W with a gradient of 0.0319 ft/ft. On April 29, 2004 the groundwater flow direction was S2°W with a gradient of 0.046 ft/ft. The groundwater flow and gradient this quarter are within the range of past monitoring events with the exception of well MW-7. Two weeks after starting up the ozone-sparge system, the groundwater elevation in well MW-7 decreased approximately 13.5 feet. Well MW-7 is located approximately four feet north of sparge well SP-1. Water levels in well MW-7 increased approximately 5.5 feet between June 10 and July 8, 2004. Water elevations in this well were consistently 7 to 10 feet lower than measurements recorded prior to the installation of the Ozone sparge system. The reason for the decrease is not clear. Graphs of groundwater elevations in the shallow aquifer at the Site since April 4, 2003 are presented on **Figure 4**.

### *Quarterly Groundwater Monitoring Results*

MtBE was detected in all the monitoring wells this quarter except for MW-6. This was the first quarterly monitoring event in which all wells did not yield any hydrocarbons at concentrations above the SSTLs. Detected MtBE concentrations ranged from 7.3 µg/L in well MW-9 to

1,650 µg/L in well MW-10. These concentrations and their respective locations are illustrated on **Figure 5**. Graphs of MtBE concentrations in wells MW-5 and MW-7 are shown on **Figure 6**. Concentrations decreased drastically in wells MW-3, MW5, and MW-7 since the last regular quarterly event. For example, the MtBE concentration in well MW-5 decreased from 20,000 µg/L on April 14, 2004 to 9.6 µg/L on July 8, 2004. Graphs of MtBE concentrations in the less impacted wells (MW-1, MW-3, MW-8, MW-9, and MW-10) are shown on **Figure 7**. Wells MW-3, MW-5, MW-7, MW-8, and MW-9 all recorded record low levels of MTBE either on July 8, or during the treatment system startup monitoring performed in May and June. Except for wells MW-8 and MW-10, MtBE concentrations in all wells were lower than those measured during the July 2003 monitoring event.

Historically low BTEX concentrations were observed in wells MW-5 and MW-7 this quarter. BTEX constituents were not detected in any other wells. Well MW-5 yielded a benzene concentration of 1.5 µg/L. In comparison, benzene was detected at a concentration of 2,700 µg/L in this well on April 14, 2004. All other BTEX constituents in well MW-5 were below laboratory detection limits. A graph of the benzene concentrations versus time in wells MW-5 and MW-7 is shown on **Figure 8**.

The groundwater sample collected from monitoring well MW-7 did not contain detectable benzene or toluene. However, ethyl benzene and xylenes were detected in this well at 1.3 µg/L and 10 µg/L, respectively. In comparison, all four BTEX constituents in this well were above the SSTLs for the site on April 14, 2004. Groundwater analytical results are summarized in **Table 3**. The laboratory analytical reports are included in **Appendix C**.

The DO concentration increased noticeably in wells MW-1, MW-3, MW-5 MW-7 and MW-9 since the ozone-sparge system began operation. On July 8, 2004 the DO concentrations in the Site monitoring wells ranged from 0.19 milligrams per liter (mg/L) in well MW-10 to 11.46 mg/L in well MW-5. The average DO concentration was 3.52 mg/L. The highest DO concentration observed in any of the wells prior to the installation of the ozone sparge system was 2.75 mg/L in well MW-10 on April 23, 2003. DO concentrations in the monitoring wells are summarized on **Table 4**.

### ***GeoTracker Requirements***

All chemical analysis data are submitted electronically to the California State Water Resources Control Board Geographical Environmental Information Management System (GeoTracker) database as required by AB2886 (Water Code Sections 13195-13198). Electronic analytical reports (EDF files) are prepared and formatted by the laboratory and submitted by WAC. Along with chemical analyses, well latitudes, longitudes (GEO\_XY files) and elevations (GEO\_Z files) are submitted to the database. Submittal of a well status and usage report (GEO\_WELL file) is required for each monitoring event. Current maps (GEO\_MAP files) are also submitted when site features are added or changed.

## CONCLUSIONS

The OS system began operation on April 14, 2004, and with the exception of a few repairs, has run continuously.

On July 8, 2004 the direction of groundwater flow was southerly with a gradient of 0.0319 ft/ft. This is consistent with past measurements. The groundwater elevation in well MW-7 was apparently affected (lowered) by the OS system. The reason for the decrease is unclear.

DO concentrations have increased substantially in wells MW-3, MW-5 MW-7 and MW-9 since the OS system began operating. The increased DO concentrations are an indication that these wells are within the zone of influence of the ozone treatment system. Increased DO concentrations will stimulate biodegradation of hydrocarbons by soil microorganisms.

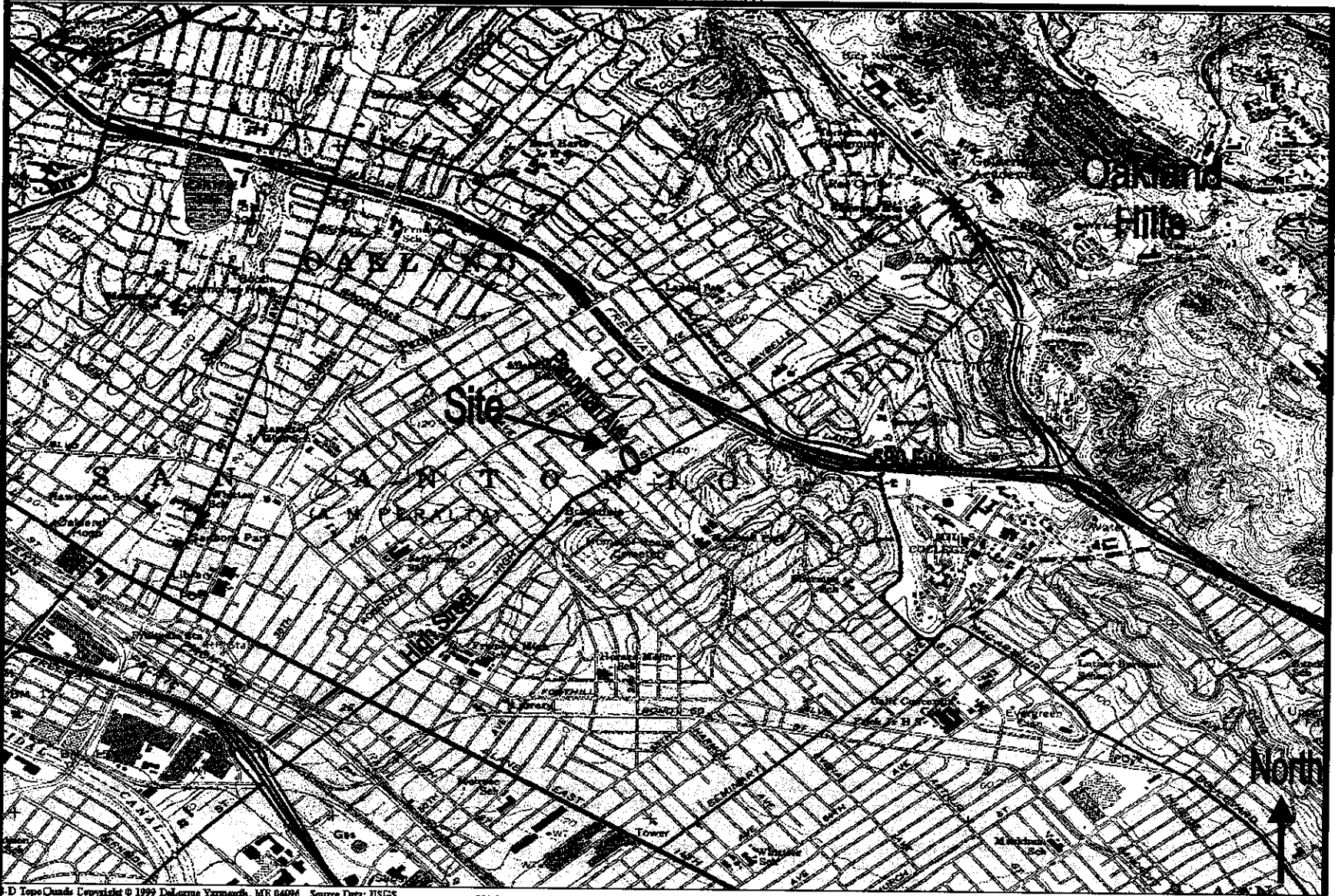
MtBE and benzene are the principal constituents of concern in shallow groundwater at the Site. The MtBE and benzene concentrations in well MW-5 this quarter were the lowest on record for that well.

BTEX constituents were detected above their respective SSTLs in well MW-7 on April 14, 2004, but concentrations decreased significantly by April 29. The benzene and MtBE concentrations in well MW-7 are the lowest since MW-7 was installed in April 2003. Historically low MtBE concentrations were also reported this quarter in wells MW-3, MW-5, MW-8, and MW-9.

Hydrocarbons in all Site wells have been below the SSTLs for the Site for at least three consecutive sampling events, including those conducted after the treatment system startup.

## RECOMMENDATIONS

We recommend continued operation of the ozone-sparge system until the next scheduled quarterly monitoring event in October 2004. If the hydrocarbon concentrations in all wells are still below the SSTLs established for the Site, we recommend shutting off the sparge system for one month. After one month, WAC will sample wells MW-5, MW-7, MW-8, and MW-9. If hydrocarbon concentrations in these wells remain at or below the SSTLs we recommend petitioning Alameda County for Site Closure.



D TopoQuads Copyright © 1999 Daloune Yarmouth, ME 04096 Source Data: USGS

756 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

Base map is the Oakland East 7.5-minute quad (USGS, 1980).








**W. A. CRAIG, INC.**  
Environmental Contracting and Consulting

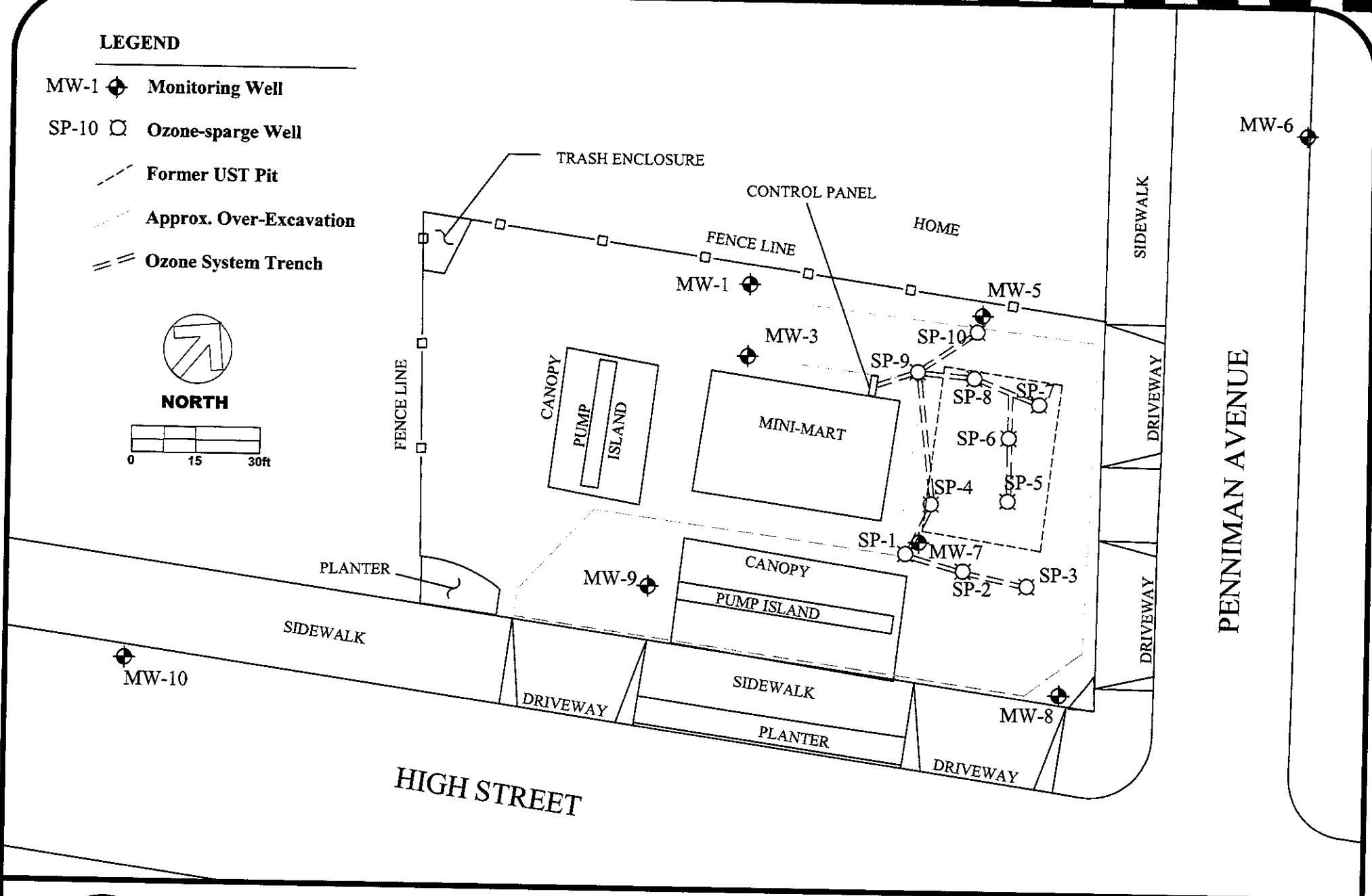
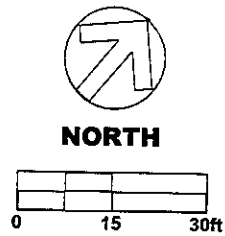
6940 Tremont Road  
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**Site Location Map**  
Express Gas & Mart  
2951 High Street, Oakland, California

**Figure**  
**1**  
Job No. 3936

**LEGEND**

- MW-1  Monitoring Well
- SP-10  Ozone-spargue Well
-  Former UST Pit
-  Approx. Over-Excavation
-  Ozone System Trench



**W.A. Craig, Inc.**

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**Site Features**

Express Gas & Mart  
 2951 High Street  
 Oakland, California

Project #: 3936	Figure:
Date: 7/8/04	2
Scale: 1"=30'	

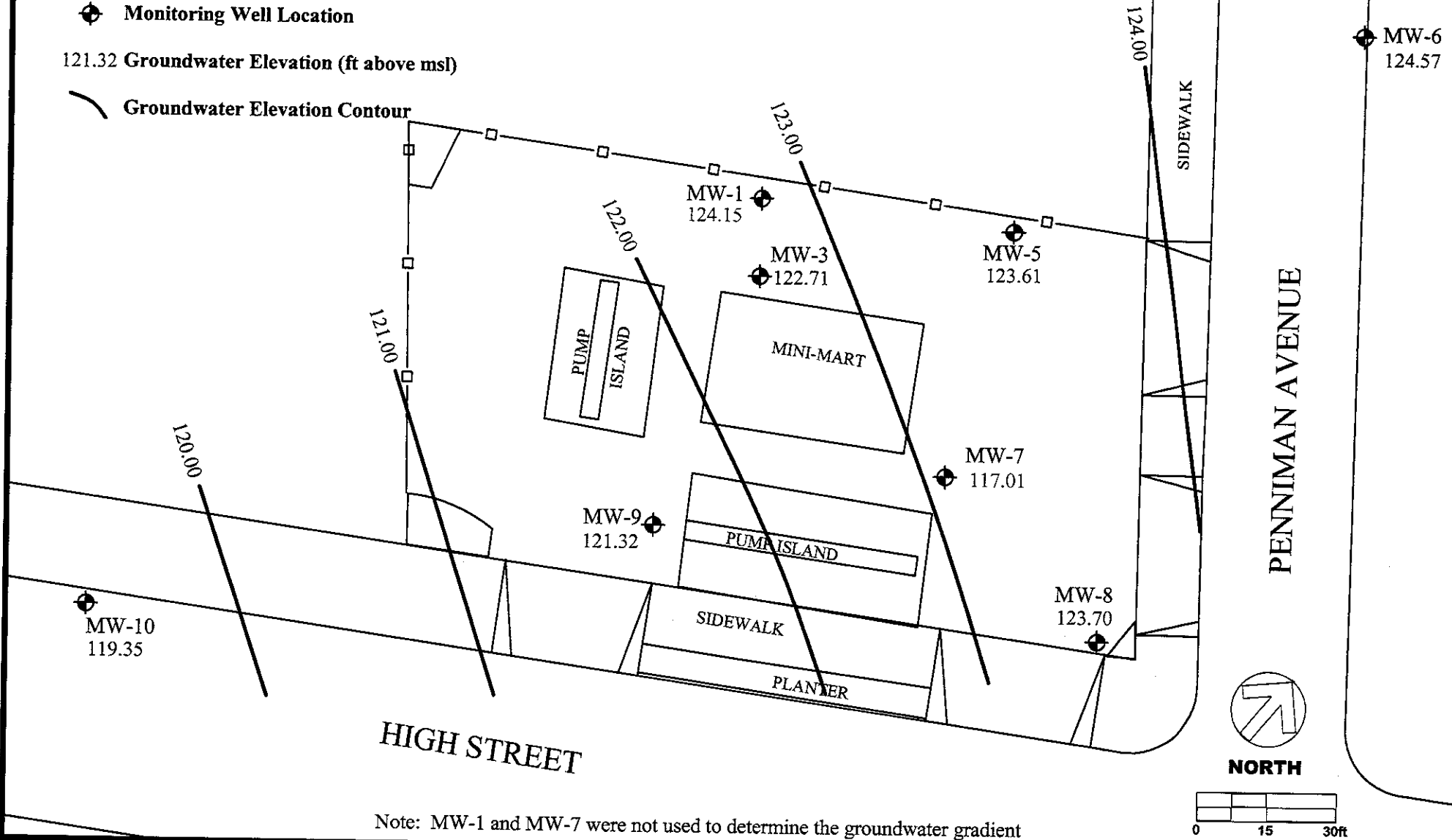


**LEGEND**

◆ Monitoring Well Location

121.32 Groundwater Elevation (ft above msl)

— Groundwater Elevation Contour



Note: MW-1 and MW-7 were not used to determine the groundwater gradient



**W.A. Craig, Inc.**

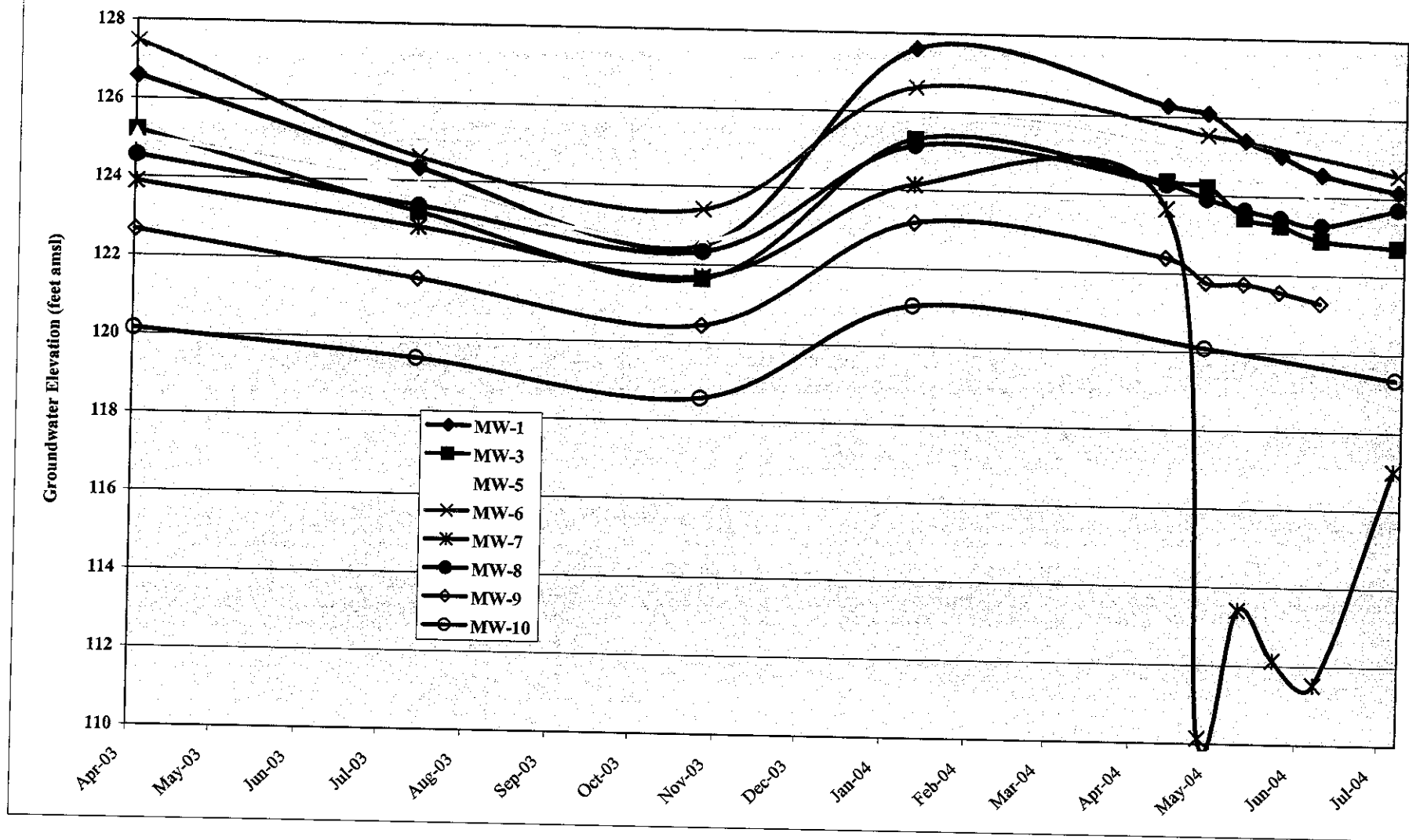
6940 Tremont Road LIC# 455752  
 Dixon, California 95620-9603  
 PH# (707) 693-2929 Fax# (707) 693-2922

**Groundwater Elevations on  
 July 8, 2004**

Express Gas & Mart  
 2951 High Street  
 Oakland, California

Project #: 3936	Figure:
Date: 7/8/04	<b>3</b>
Scale: 1"=30'	

**Figure 4**  
**Monitoring Well Hydrographs**  
**2951 High Street, Oakland, California**

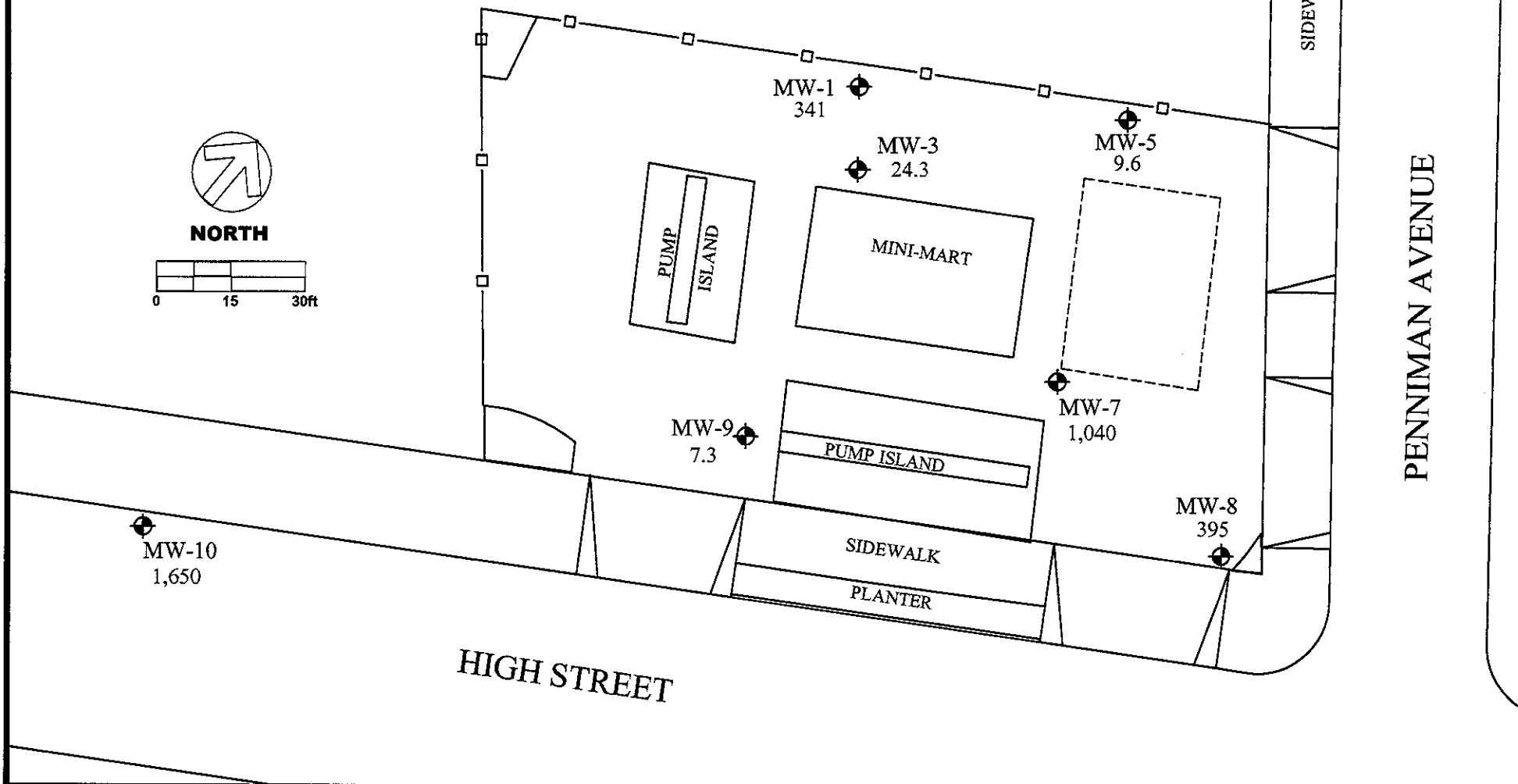
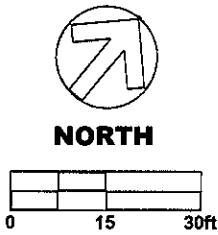


**LEGEND**

⊕ Monitoring Well Location

--- Former UST Pit

24.3 MtBE Concentration (ug/L)



**W.A. Craig, Inc.**

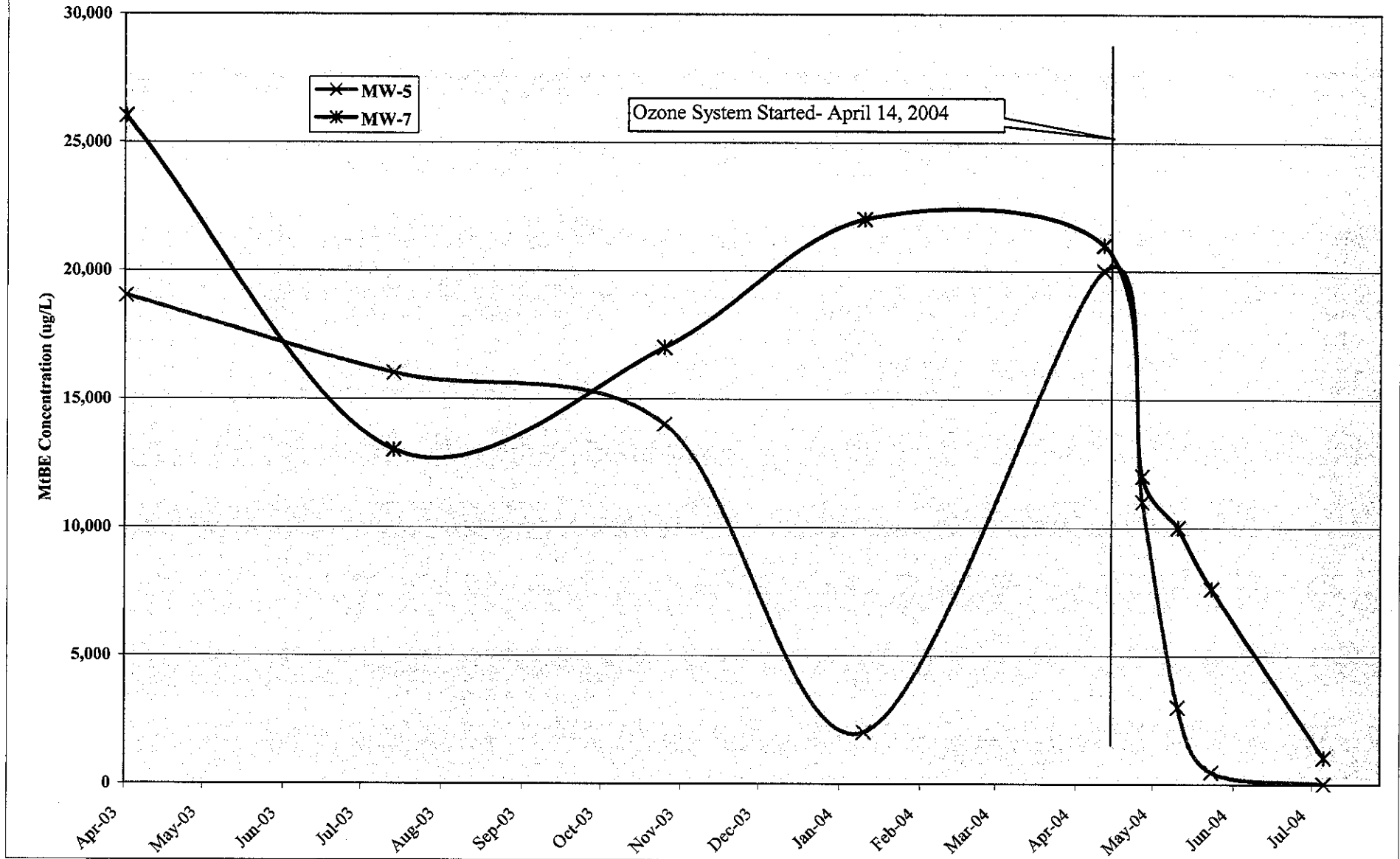
6940 Tremont Road LIC# 455752  
 Dixon, California 95620-9603  
 PH# (707) 693-2929 Fax# (707) 693-2922

**MtBE Concentrations in Groundwater  
 on July 8, 2004**

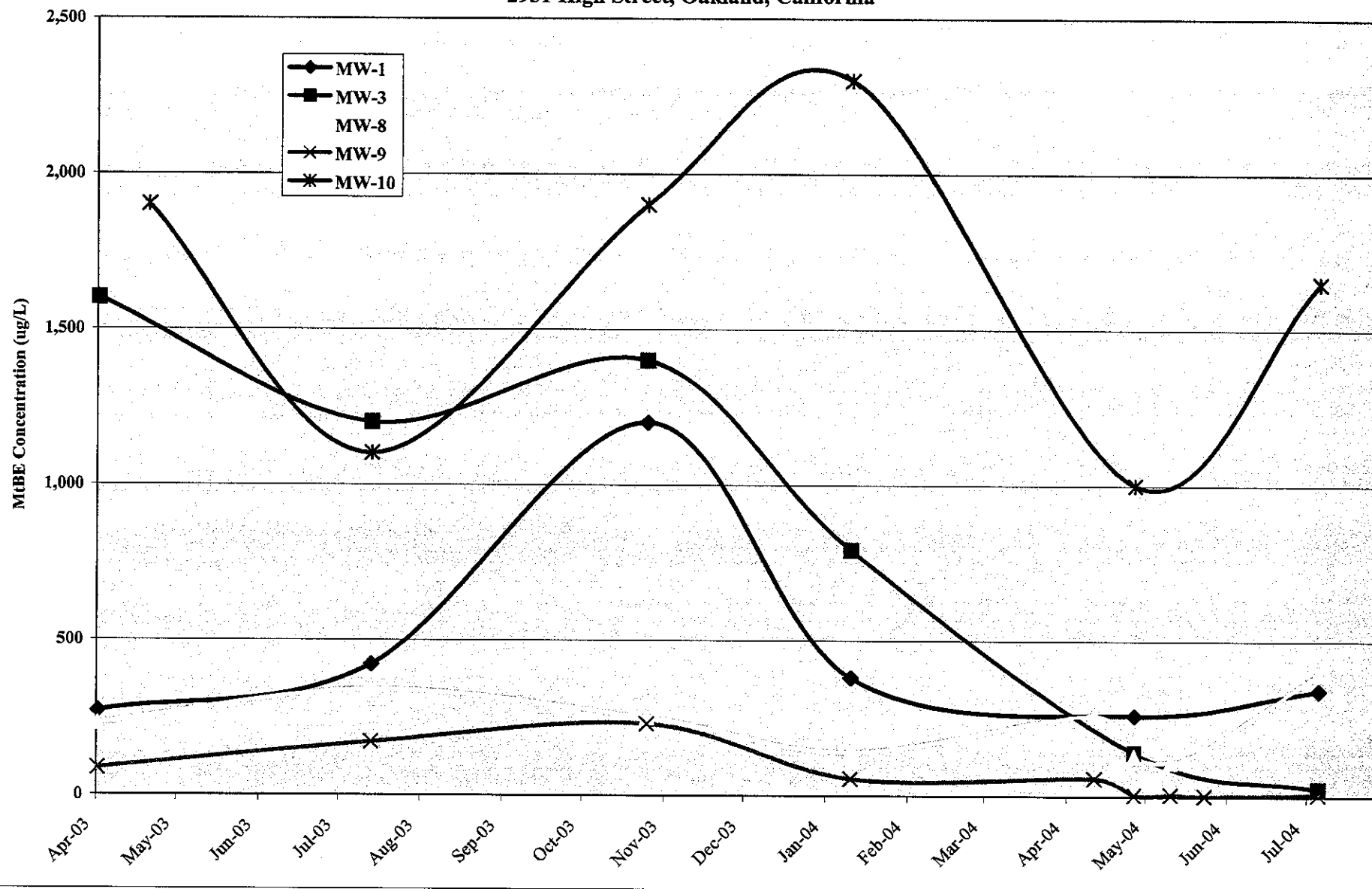
Express Gas & Mart  
 2951 High Street  
 Oakland, California

Project #: 3936	<b>5</b>
Date: 7/8/04	
Scale: 1"=30'	

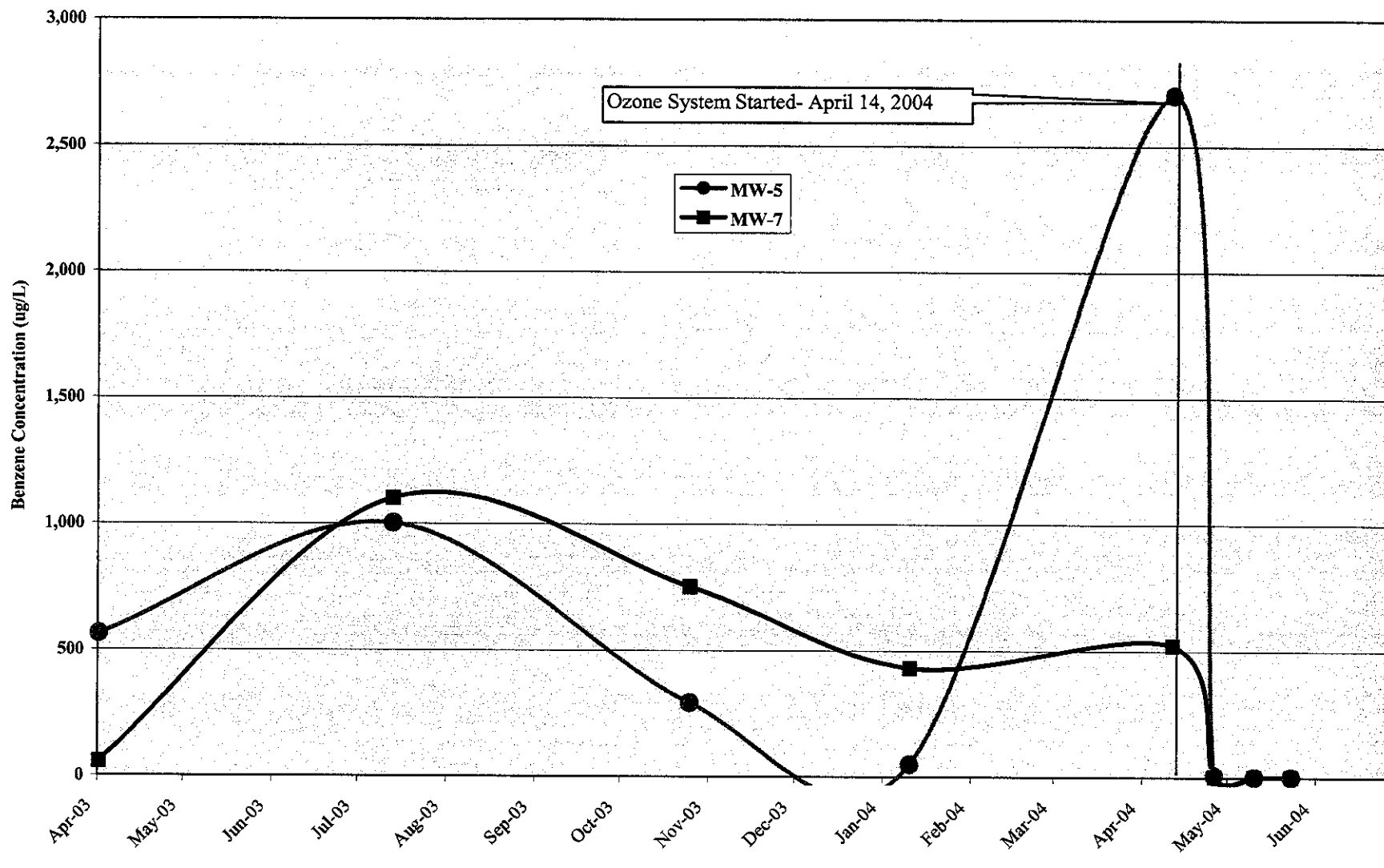
**Figure 6**  
**MtBE Concentrations in Wells MW-5 and MW-7**  
**2951 High Street, Oakland, California**



**Figure 7**  
**MtBE Concentrations in Wells MW-1, MW-3, MW-8, MW-9, and MW-10**  
**2951 High Street, Oakland, California**



**Figure 8**  
**Benzene Concentrations in Wells MW-5 and MW-7**  
**2951 High Street, Oakland, California**



**Table 1**  
**Monitoring and Ozone-sparge Well Construction Information**  
 2951 High Street  
 Oakland, California

Well ID	Date Installed	Casing Diameter (inches)	Total Depth (fbg)	Screened Interval (fbg)	Water-Bearing Unit	Top of Casing Elevation (feet amsl)	Northing (feet)	Easting (feet)
MW-1	2/95	2	25	N/A	N/A	131.64	2,112,552.39	6,070,038.16
MW-3	2/95	2	25	N/A	N/A	131.05	2,112,539.60	6,070,048.55
MW-5	12/9/96	2	30	5-30	N/A	131.99	2,112,582.04	6,070,083.59
MW-6	1/7/97	2	30	5-30	N/A	132.58	2,112,662.53	6,070,113.49
MW-7	3/24/03	2	25	15-25	gravelly sandy silt	130.93	2,112,533.18	6,070,106.31
MW-8	3/24/03	2	25	15-25	gravelly sandy silt	131.15	2,112,527.86	6,070,153.72
MW-9	3/25/03	2	25	15-25	silty gravelly sand	130.00	2,112,484.75	6,070,065.55
MW-10	4/4/03	2	25	15-25	sandy silt	127.19	2,112,393.29	6,069,984.72
SP-1	3/25/04	3/4	37	30.5-33	clayey sand	130.39	2,112,529.17	6,070,105.65
SP-2	3/25/04	3/4	31	26.5-29	sandy clay	130.07	2,112,534.87	6,070,118.37
SP-3	3/24/04	3/4	32	28.5-31	gravelly sandy clay	130.66	2,112,541.87	6,070,131.76
SP-4	3/25/04	3/4	33	14.5-17	gravelly sandy clay	130.51	2,112,541.66	6,070,102.66
SP-5	3/26/04	3/4	30	20-22.5	clayey gravelly sand	130.55	2,112,553.75	6,070,115.66
SP-6	3/26/04	3/4	30	21.5-24	clayey sandy gravel	130.88	2,112,564.81	6,070,106.43
SP-7	3/26/04	3/4	30	25.5-28	gravelly sand	131.20	2,112,575.20	6,070,106.74
SP-8	3/26/04	3/4	31	28.5-31	gravelly sandy clay	130.98	2,112,569.95	6,070,091.53
SP-9	3/25/04	3/4	33	25-27.5	clayey sand	130.85	2,112,562.57	6,070,080.59
SP-10	3/26/04	3/4	30	21.5-24	gravelly clay	131.23	2,112,578.47	6,070,085.11

**Notes:**

fbg = feet below grade; amsl = above mean sea level; N/A = data not available.

Monitoring wells surveyed by Virgil Chavez Land Surveying on April 15, 2003.

Ozone-sparge wells surveyed by Virgil Chavez Land Surveying on April 22, 2004.

MW-1, MW-3, MW-5, and MW-6 were installed by Aqua Science Engineers, Inc.

MW-7, MW-8, MW-9, MW-10, and SP-1 through SP-10 were installed by W.A. Craig, Inc.

**Table 2**  
**Groundwater Levels in Monitoring Wells**  
**2951 High Street**  
**Oakland, California**

Well ID	Date	TOC Elevation	DTW	Groundwater Elevation	
MW-1	04/04/03	131.64	5.07	126.57	
	07/16/03		7.32	124.32	
	10/28/03		9.16	122.48	
	01/13/04		4.03	127.61	
	04/14/04		5.37	126.27	
	04/29/04		5.55	126.09	
	05/13/04		6.24	125.40	
	05/26/04		6.61	125.03	
	06/10/04		7.08	124.56	
	07/08/04		7.49	124.15	
MW-3	04/04/03	131.05	5.86	125.19	
	07/16/03		7.86	123.19	
	10/28/03		9.43	121.62	
	01/13/04		5.76	125.29	
	04/14/04		6.72	124.33	
	04/29/04		6.81	124.24	
	05/13/04		7.62	123.43	
	05/26/04		7.80	123.25	
	06/10/04		8.17	122.88	
	07/08/04		8.34	122.71	
MW-5	04/04/03	131.99	6.94	125.05	
	07/16/03		8.17	123.82	
	10/28/03		9.43	122.56	
	01/13/04		6.27	125.72	
	04/14/04		6.79	125.20	
	04/29/04		7.35	124.64	
	05/13/04		7.71	124.28	
	05/26/04		7.66	124.33	
	06/10/04		8.11	123.88	
	07/08/04		8.38	123.61	
MW-6	04/04/03	132.58	5.13	127.45	
	07/16/03		7.99	124.59	
	10/28/03		9.18	123.40	
	01/13/04		5.97	126.61	
	04/29/04		7.05	125.53	
	07/08/04		8.01	124.57	
MW-7	04/04/03	130.93	7.06	123.87	
	07/16/03		8.11	122.82	
	10/28/03		9.25	121.68	
	01/13/04		6.80	124.13	
	04/14/04		7.30	123.63	
	04/29/04		*	20.80	110.13
	05/13/04		*	17.51	113.42
	05/26/04		*	18.79	112.14
	06/10/04		*	19.41	111.52
	07/08/04		*	13.92	117.01



**Table 2**  
**Groundwater Levels in Monitoring Wells**  
**2951 High Street**  
**Oakland, California**

Well ID	Date	TOC Elevation	DTW	Groundwater Elevation
MW-8	04/04/03	131.15	6.60	124.55
	07/16/03		7.79	123.36
	10/28/03		8.83	122.32
	01/13/04		6.02	125.13
	04/14/04		6.90	124.25
	04/29/04		7.25	123.90
	05/13/04		7.52	123.63
	05/26/04		7.71	123.44
	06/10/04		7.89	123.26
	07/08/04		7.45	123.70
MW-9	04/04/03	130.00	7.35	122.65
	07/16/03		8.50	121.50
	10/28/03		9.56	120.44
	01/13/04		6.83	123.17
	04/14/04		7.61	122.39
	04/29/04		8.23	121.77
	05/13/04		8.25	121.75
	05/26/04		8.44	121.56
	06/10/04		8.71	121.29
	07/08/04		8.68	121.32
MW-10	04/23/03	127.19	7.06	120.13
	07/16/03		7.72	119.47
	10/28/03		8.61	118.58
	01/13/04		6.15	121.04
	04/29/04		7.09	120.10
	07/08/04		7.84	119.35

**Notes:**

Elevations are in feet above mean sea level.

TOC, Top of casing. DTW, Depth to water in feet below TOC.

\* Water level in MW-7 is apparently affected by ozone sparging.



**Table 3**  
**Analytical Results for Groundwater Samples**  
**2951 High Street**  
**Oakland, California**

Well ID	Date	TPH-g	benzene	toluene	ethyl-benzene	xylenes	MtBE	DIPE	EtBE	tAME	tBA	methanol	ethanol	EDB	DCA
MW-5 (cont.)	4/4/03	1,800	560	<5.0	<5.0	30	19,000	<330	<330	<330	<3,300	<330,000	<33,000	<330	<330
	7/16/03	2,800	1,000	<5	10	80	16,000	<200	<200	<200	<2,000	<200,000	<20,000	<200	<200
	10/28/03	740	290	<5.0	<5.0	7.2	14,000	<170	<170	<170	<1,700	<170,000	<17,000	<170	<170
	1/13/04	<500	48	<5	<5	<5	2,000	<5	<5	<5	<50	<500	<50	<5	<5
	4/14/04	6,600	2,700	<50	<50	260	20,000	<500	<500	<500	<5,000	<500,000	<50,000	<500	<500
	4/29/04	<500	6.3	<5	<5	7.8	11,000	<250	<250	<250	<2,500	<250,000	<25,000	<250	<250
	5/13/04	<50	<0.5	<0.5	<0.5	<0.5	3,000	<50	<50	<50	<500	<50,000	<5,000	<50	<50
	5/26/04	<50	<0.5	<0.5	<0.5	<0.5	460	<10	<10	<10	<100	<10,000	<1,000	<10	<10
	6/10/04	<50	<0.5	<0.5	<0.5	<0.5	38	<0.5	<0.5	<0.5	<5.0	<50	<5.0	<0.5	<0.5
7/8/04	<50	1.5	<0.5	<0.5	<1.0	9.6	<0.5	<1	<1	<10	NT	<100	<1.0	<0.5	
MW-6	1/13/97	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	3/27/97	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	6/27/97	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	9/22/97	<50	<0.5	<0.5	<0.5	<0.5	24	NT	NT	NT	NT	NT	NT	NT	NT
	12/6/97	94	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	3/23/98	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	6/10/98	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	7/23/98	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	9/16/98	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	3/5/99	55	<0.5	0.92	0.5	1.3	<5	NT	NT	NT	NT	NT	NT	NT	NT
	6/17/99	<50	<0.5	<0.5	<0.5	<0.5	8.0	NT	NT	NT	NT	NT	NT	NT	NT
	9/15/99	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	12/9/99	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	3/6/00	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	6/7/00	<50	<0.5	<0.5	<0.5	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT
	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<500	<50	<0.5	<0.5
	7/16/03	<50	<0.5	<0.5	<0.5	<0.5	0.54	<0.5	<0.5	<0.5	<5	<500	<50	<0.5	<0.5
10/28/03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<500	<50	<0.5	<0.5	
1/13/04	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<50	<5	<0.5	<0.5	
4/29/04	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<500	<50	<0.5	<0.5	
7/8/04	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<1	<1	<10	NT	<100	<1.0	<0.5

**Table 3**  
**Analytical Results for Groundwater Samples**  
**2951 High Street**  
**Oakland, California**

Well ID	Date	TPH-g	benzene	toluene	ethyl-benzene	xylenes	MtBE	DIPE	EtBE	tAME	tBA	methanol	ethanol	EDB	DCA
MW-7	4/4/03	1,400	54	27	15	180	26,000	<500	<500	<500	<5,000	<500,000	<50,000	<500	<500
	7/16/03	18,000	1,100	630	1,100	2,000	13,000	<200	<200	<200	<2,000	<200,000	<20,000	<200	<200
	10/28/03	10,000	750	370	750	1,000	17,000	<500	<500	<500	<5,000	<500,000	<50,000	<500	<500
	1/13/04	7,200	430	150	560	550	22,000	<50	<50	<50	<500	<5000	<500	<50	<50
	4/14/04	8,900	520	360	640	1,100	21,000	<500	<500	<500	<5,000	<500,000	<50,000	<500	<500
	4/29/04	<500	<5	<5	<5	12	12,000	<250	<250	<250	<2,500	<250,000	<25,000	<250	<250
	5/13/04	660	<5.0	28	25	120	10,000	<170	<170	<170	<1,700	<170,000	<17,000	<170	<170
	5/26/04	380	<2.5	15	15	79	7,600	<200	<200	<200	<2,000	<200,000	<20,000	<200	<200
	6/10/04	<1,000	<10	<10	<10	<10	4,900	<10	<10	<10	300	<10,000	<100	<10	<10
7/8/04	67	<0.5	<0.5	1.3	10	1,040	<0.5	<1	<1	<10	NT	<100	<1.0	<0.5	
MW-8	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	230	<5	<5	<5	<50	<5,000	<500	<5	<5
	7/16/03	<50	<0.5	<0.5	<0.5	<0.5	340	<5	<5	<5	<50	<5,000	<500	<5	<5
	10/28/03	<50	<0.5	<0.5	<0.5	<0.5	250	<5.0	<5.0	<5.0	<50	<5,000	<500	<5	<5.0
	1/13/04	<50	<0.5	<0.5	<0.5	<0.5	140	<0.5	<0.5	<0.5	<5.0	<50	<5	<0.5	<0.5
	4/14/04	<50	<0.5	<0.5	<0.5	<0.5	260	<5	<5	<5	<50	<5,000	<500	<5	<5
	4/29/04	<50	<0.5	<0.5	<0.5	<0.5	130	<5	<5	<5	<50	<5,000	<500	<5	<5
	5/13/04	<50	<0.5	<0.5	<0.5	<0.5	110	<2.5	<2.5	<2.5	<25	<2,500	<250	<2.5	<2.5
	5/26/04	<50	<0.5	<0.5	<0.5	<0.5	150	<2.5	<2.5	<2.5	<25	<2,500	<250	<2.5	<2.5
	6/10/04	<50	<0.5	<0.5	<0.5	<0.5	290	<0.5	<0.5	<0.5	<5.0	<50	<5.0	<0.5	<0.5
7/8/04	<50	<0.5	<0.5	<0.5	<1.0	395	<0.5	<1	<1	<10	NT	<100	<1.0	<0.5	
MW-9	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	85	<1.5	<1.5	<1.5	<12	<1,200	<120	<1.5	2
	7/16/03	<50	<0.5	<0.5	<0.5	<0.5	170	<2.5	<2.5	3	27	<2,500	<250	<2.5	<2.5
	10/28/03	<50	<0.5	<0.5	<0.5	<0.5	230	<5.0	<5.0	<5.0	57	<5,000	<500	<5.0	<5.0
	1/13/04	<50	<0.5	<0.5	<0.5	<0.5	55	<0.5	<0.5	0.72	5.8	<50	<5	<0.5	1
	4/14/04	<50	<0.5	<0.5	<0.5	<0.5	58	<1	<1	<1	<10	<1,000	<100	<1	<1
	4/29/04	<50	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5	<5	<500	<50	<0.5	0.63
	5/13/04	<50	<0.5	<0.5	<0.5	<0.5	5.9	<0.5	<0.5	<0.5	<5.0	<50	<5.0	<0.5	0.66
	5/26/04	<50	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<5.0	<500	<50	<0.5	0.53
	6/10/04	<50	<0.5	<0.5	<0.5	<0.5	14	<0.5	<0.5	<0.5	<5.0	<50	<5.0	<0.5	0.60
7/8/04	<50	<0.5	<0.5	<0.5	<1.0	7.3	<0.5	<1	<1	<10	NT	<100	<1.0	<0.5	

**Table 3**  
**Analytical Results for Groundwater Samples**  
**2951 High Street**  
**Oakland, California**

Well ID	Date	TPH-g	benzene	toluene	ethyl-benzene	xylenes	MtBE	DIPE	EtBE	tAME	tBA	methanol	ethanol	EDB	DCA
MW-10	4/23/03	79	<0.5	<0.5	<0.5	<0.5	1,900	<25	<25	58	<250	<25,000	<2,500	<25	<25
	7/16/03	73	20	<0.5	<0.5	<0.5	1,100	<20	<20	39	<200	<20,000	<2,000	<20	<20
	10/28/03	76	<0.5	<0.5	<0.5	<0.5	1,900	<50	<50	<50	<500	<50,000	<5,000	<50	<50
	1/13/04	<500	<5	<5	<5	<5	2,300	<5	<5	72	<50	<500	<50	<5	<5
	4/29/04	54	<0.5	<0.5	<0.5	<0.5	1,000	<17	<17	24	<170	<17,000	<1,700	<17	<17
	7/8/04	76	<0.5	<0.5	<0.5	<1.0	1,650	<0.5	<1	37	211	NT	<100	<1.0	<0.5
<b>SSTL</b>		<b>NE</b>	<b>34</b>	<b>270</b>	<b>180</b>	<b>470</b>	<b>8,400</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>

**Notes:**

SSTLs are site-specific target levels developed for the site by Aqua Science Engineers, Inc. in 1997. **Bold** concentrations exceed the SSTL.

Concentrations are micrograms per liter (ug/L). NE, SSTL not established for this compound. NT, analyte not tested.

Data prior to April 2003 are from *Groundwater Monitoring Report for September 2000 Sampling* by Aqua Science Engineers, Inc. dated 11/14/2000.

\* Oxygen Release Compound (ORC) was injected into borings on the south side of MW-5 in late June 1997.

\*\* ORC socks were placed in MW-5 in August 1998 and removed in September 2000.

TPH-g Total Petroleum Hydrocarbons as gasoline

EtBE Ethyl tert-Butyl Ether

EDB Ethylene Dibromide

MtBE Methyl tert-Butyl Ether

tAME tert-Amyl Methyl Ether

DCA 1,2-Dichloroethane

DIPE Di-isopropyl Ether

tBA tert-Butanol

**APPENDIX A**  
**OZONE SPARGE POINT OPERATING**  
**PRESSURES**

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Sparge Point	Date	Pressure	Average
SP-1	04/15/04	44	35.9
	04/29/04	30	
	04/29/04	30	
	05/04/04	28	
	05/13/04	39	
	05/17/04	37	
	05/26/04	37	
	06/10/04	39	
	07/08/04	37.5	
	07/16/04	37	
	07/30/04	36	
SP-2	04/15/04	44	37.7
	04/29/04	24	
	04/29/04	37	
	05/04/04	36	
	05/13/04	40	
	05/17/04	40	
	05/26/04	39	
	06/10/04	38	
	07/08/04	40.5	
	07/16/04	38	
	07/30/04	38	
SP-3	04/15/04	38	33.0
	04/29/04	23	
	04/29/04	38	
	05/04/04	34	
	05/13/04	29	
	05/17/04	29	
	05/26/04	28	
	06/10/04	31.5	
	07/08/04	46	
	07/16/04	34	
	07/30/04	33	
SP-4	04/15/04	28	25.8
	04/29/04	17	
	04/29/04	24	
	05/04/04	27	
	05/13/04	25	
	05/17/04	25	
	05/26/04	26.5	
	06/10/04	26	
	07/08/04	33	
	07/16/04	26.5	
	07/30/04	26	

Sparge Point	Date	Pressure	Average
SP-5	04/15/04	n/a	45.8
	04/29/04	n/a	
	04/29/04	47	
	05/04/04	54	
	05/13/04	49	
	05/17/04	49	
	05/26/04	49	
	06/10/04	40	
	07/08/04	48	
	07/16/04	38	
	07/30/04	38	
SP-6	04/15/04	30	23.9
	04/29/04	17	
	04/29/04	22	
	05/04/04	24	
	05/13/04	24	
	05/17/04	24	
	05/26/04	24	
	06/10/04	22	
	07/08/04	26	
	07/16/04	23	
	07/30/04	27	
SP-7	04/15/04	34	35.3
	04/29/04	26	
	04/29/04	41	
	05/04/04	40	
	05/13/04	33	
	05/17/04	33	
	05/26/04	38	
	06/10/04	36	
	07/08/04	36	
	07/16/04	36	
	07/30/04	n/a	
SP-8	04/15/04	50	40.7
	04/29/04	26	
	04/29/04	42	
	05/04/04	43	
	05/13/04	40	
	05/17/04	41	
	05/26/04	39	
	06/10/04	39	
	07/08/04	46	
	07/16/04	41	
	07/30/04	n/a	



Sparge Point	Date	Pressure	Average
SP-9	04/15/04	40	40.2
	04/29/04	26	
	04/29/04	36	
	05/04/04	40	
	05/13/04	40	
	05/17/04	42.5	
	05/26/04	46	
	06/10/04	40	
	07/08/04	47	
	07/16/04	44.5	
	07/30/04	n/a	
SP-10	04/15/04	46	36.4
	04/29/04	23	
	04/29/04	38	
	05/04/04	37	
	05/13/04	36	
	05/17/04	37	
	05/26/04	35.5	
	06/10/04	31	
	07/08/04	44	
	07/16/04	36	
	07/30/04	n/a	

**APPENDIX B**  
**MONITORING WELL SAMPLING LOGS**

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# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St.

JOB #: 3936

DATE: 5/26/04

SAMPLER'S INITIALS: CM

WELL ID: MW-9 WELL DIAMETER (in): 2

WELL DEPTH (ft): 25 DEPTH TO WATER (ft): 3.44 WATER COLUMN Ht (ft): 16.56

STANDING WATER VOLUME (gal): 2.75 3 VOLUMES (gal): 8.25

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Pump or ~~Bailer~~ SAMPLING METHOD: Disposable Bailer  
circle method used

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	Turbidity (NTU)	DO (mg/L)	Comments
	2	21.5	6.99	615			6.16/19.9
	4	21.5	6.99	618			
	6	21.2	7.00	630			
	8	21.2	7.04	641			
	9	21.2	7.01	644			
							8.25/20.0

WELL ID: MW-8 WELL DIAMETER (in): 2

WELL DEPTH (ft): 25 DEPTH TO WATER (ft): 7.71 WATER COLUMN Ht (ft): 17.29

STANDING WATER VOLUME (gal): 2.9 3 VOLUMES (gal): 8.6

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Pump or ~~Bailer~~ SAMPLING METHOD: Disposable Bailer  
circle method used

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	Turbidity (NTU)	DO (mg/L)	Comments
	2	22.3	6.55	427			6.41/20.5
	4	22.1	6.57	509			
	6	22.0	6.59	510			
	8	21.9	6.58	509			
	9	21.8	6.59	518			
							8.31/20.5

# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 3936

DATE: 5/26/09

SAMPLER'S INITIALS: CM

WELL ID: MW-5

WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): 30

DEPTH TO WATER (ft): 7.62

WATER COLUMN Ht (ft): 22.38

STANDING WATER VOLUME (gal): 3.71

3 VOLUMES (gal): 10.4

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Pump or **Bailer**  
circle method used

SAMPLING METHOD: Disposable Bailer

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	Turbidity (NTU)	DO (mg/L)	Comments
	2	24.5	7.71	2770			10.5 / 19.5
	4	21.3	7.77	2730			
	6	21.0	7.54	2780			
	8	21.0	7.88	2790			
	10	20.9	7.99	2780			
	12	20.9	7.91	2720			
							10.73 @ 19.5

WELL ID: MW-7

WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 18.79

WATER COLUMN Ht (ft): 6.21

STANDING WATER VOLUME (gal): 1.03

3 VOLUMES (gal): 3.1

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Pump or **Bailer**  
circle method used

SAMPLING METHOD: Disposable Bailer

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	Turbidity (NTU)	DO (mg/L)	Comments
	0.75	21.1	7.33	640			13.73 / 19.9
	1.5	20.1	7.32	595			
	2.25	20.1	7.32	558			
	3	21.1	7.31	593			
							19.51 @ 20.0

# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St.

PROJECT #: 3936

DATE: 8-10-09

SAMPLER'S INITIALS: CM

WELL ID: 115-10

WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): 23

DEPTH TO WATER (ft): 7.51

WATER COLUMN Ht (ft): 17.11

STANDING WATER VOLUME (gal): 3.24

3 VOLUMES (gal): 3.5

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailler  
(circle method used)

SAMPLING METHOD: bailler

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					22.2/20.5	
	<del>5</del>	<del>22.1</del>	<del>6.56</del>	<del>580</del>		
	2	22.3	6.56	490		
	4	22.3	6.56	480	20.5/20.5	
	6	21.9	6.58	389		
	8	21.8	6.59	415		
	1	21.7	6.60	401		
					20.5/20.5	

WELL ID: 115-17

WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 14.91

WATER COLUMN Ht (ft): 5.59

STANDING WATER VOLUME (gal): 1.3

3 VOLUMES (gal): 2.8

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: \_\_\_\_\_  
(circle method used)

SAMPLING METHOD: bailler

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					12.16/14.9	
	.5	20.7	7.73	595		2000 psi pressure 4.5 small
	1	20.9	7.59	570	14.37/14.9	
	1.5	20.5	7.59	410		
	2	20.9	7.59	287		mostly / slow recovery
	2.5	20.9	7.50	311		
	3	20.8	7.57	280	14.37/14.9	

### MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

PROJECT #: 3936

DATE: 7-8-04

SAMPLER'S INITIALS: CM

WELL ID: MW 7

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 13.92

WATER COLUMN Ht (ft): 11.08

STANDING WATER VOLUME (gal): 1.89

3 VOLUMES (gal): 5.5

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					10.5/20.0	
	1.5	22.2	7.04	524		
	2.5	22.0	7.05	519		
	3.5	21.9	7.06	520		
	4.5	21.9	7.07	522		
12:00	5.5	21.9	7.07	520		
					8.7/20.0	

WELL ID: MW-8

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 7.45

WATER COLUMN Ht (ft): 17.55

STANDING WATER VOLUME (gal): 2.91

3 VOLUMES (gal): 8.74

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					22/20.5	
	2	23.5	6.42	483		
	4	23.3	6.44	486	20/20.5	
	4	22.5	6.49	513		
	8	22.4	6.51	515		
12:30	9	22.3	6.54	510		
					22/20.5	

### MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: Woodys High St

PROJECT #: 8936

DATE: 7-8-04

SAMPLER'S INITIALS: cm

WELL ID: mw-10

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 7.84

WATER COLUMN Ht (ft): 17.16

STANDING WATER VOLUME (gal): 2.85

3 VOLUMES (gal): 8.11

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					19.0	
	2	21.1	6.74	577		
	4	21.0	6.74	578	25/19.5	
	6	20.8	6.74	578		
	7	20.8	6.74	579		
11:11	8.25	20.8	6.77	581		
					28/19.8	

WELL ID: mw-9

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 8.68

WATER COLUMN Ht (ft): 16.32

STANDING WATER VOLUME (gal): 2.71

3 VOLUMES (gal): 7.3

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					3.99/19.9	
	2	21.9	6.78	953		
	4	21.7	6.85	1083	57/19.9	
	6	21.3	6.98	1092		
	7	21.3	6.96	1085		
11:40	8	21.2	6.94	1083		
					58/19.9	

### MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: Woody's High St

PROJECT #: 3936

DATE: 7-8-04

SAMPLER'S INITIALS: CM

WELL ID: mw-3

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 8.34

WATER COLUMN Ht (ft): 16.66

STANDING WATER VOLUME (gal): 2.77

3 VOLUMES (gal): 8.3

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					0.76/18.7	
	2	20.9	6.03	485		
	4	20.7	6.06	489	0.55/18.8	
	6	20.1	6.10	497		
	7	20.2	6.14	507		
10:30	8.5	20.2	6.16	513		
					0.99/18.8	

WELL ID: mw-1

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): 7.49

WATER COLUMN Ht (ft): 17.51

STANDING WATER VOLUME (gal): 2.91

3 VOLUMES (gal): 8.71

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					0.71/18.7	
	2	22.3	6.22	578		
	4	22.0	6.25	581		
	6	21.7	6.29	592		
	7	21.4	6.28	590		
10:50	8	21.1	6.29	587	0.54/18.7	



### MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

PROJECT #: 3936

DATE: 7-8-04

SAMPLER'S INITIALS: CM

WELL ID: MW-6

WELL DIAMETER (in): 2

WELL DEPTH (ft): 30

DEPTH TO WATER (ft): 8.01

WATER COLUMN Ht (ft): 21.99

STANDING WATER VOLUME (gal): 3.65

3 VOLUMES (gal): 11

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					2.1/19.8	0.31/19.0
	2	20.9	6.72	529		
	4	20.8	6.74	529		0.22/19.1
	6	20.6	6.13	525		
	8	20.4	6.73	524		
7:45	10	20.3	6.74	526		
					2.0/19.0	0.20/19.0

WELL ID: MW 5

WELL DIAMETER (in): 2

WELL DEPTH (ft): 30

DEPTH TO WATER (ft): 8.38

WATER COLUMN Ht (ft): 21.62

STANDING WATER VOLUME (gal): 3.59

3 VOLUMES (gal): 10.76

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: bailer  
(circle method used)

SAMPLING METHOD: bailer

#### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SC (uS)	DO (mg/L)	Comments
					11.46/19.4	
	2	22.6	7.82	1939		
	4	21.8	7.95	1922		
	6	21.0	8.10	1910		
	8	20.5	8.12	1906		
10:10	10	20.7	8.15	1897		
					13.89/19.4	

# OZONE-SPARGE SYSTEM STATUS CHECK

SITE: High St., Oakland, CA

JOB #: 3936

DATE: 7-8 04

YOUR INITIALS: COY

NOTES: System running normally (circle), Yes **No** If not, explain:

O<sub>3</sub> light on

Aziz said system was running funny. He disconnected power from system.

I restarted & had to reprogram timer. Check for leaks w/ O<sub>3</sub> meter.

Could not find any significant leaks. increased O<sub>3</sub> sensor detector sensitivity to 60.

## PRESSURE CHECK

Station (solenoid)	Sparge Well	Pressure Today (psi)	Average Pressure	Comments
1	OS-1	37.5	44	
2	OS-2	47.5	50	
3	OS-3	46	47	
4	OS-4	33	28-30	
5	OS-5	48	44	
6	OS-6	26	34	
7	OS-7	36	36	
8	OS-8	46	40	
9	OS-9	47	50	
10	OS-10	44	46	
Run Time Setting (hrs):			1424.72	

W.A. Craig, Inc.

**APPENDIX C**  
**LABORATORY ANALYTICAL REPORTS**

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**McC Campbell 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

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 04/29/04
		Date Received: 04/29/04
	Client Contact: Tim Cook	Date Reported: 05/06/04
	Client P.O.:	Date Completed: 05/06/04

**WorkOrder: 0404460**

May 06, 2004

Dear Tim:

Enclosed are:

- 1). the results of 8 analyzed samples from your #3936; High St. project,
- 2). a QC report for the above samples
- 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. McC Campbell 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





**McC Campbell Analytical, Inc.**

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

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 04/29/04
	Client Contact: Tim Cook	Date Received: 04/29/04
	Client P.O.:	Date Extracted: 05/01/04-05/04/04
		Date Analyzed: 05/01/04-05/04/04

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0404460

Lab ID	0404460-001B	0404460-002B	0404460-003B	0404460-004B	Reporting Limit for DF = i	
Client ID	MW-1	MW-3	MW-5	MW-6		
Matrix	W	W	W	W		
DF	10	10	500	I		

Compound	Concentration				ug/kg	ug/L
	tert-Amyl methyl ether (TAME)	ND<5.0	ND<5.0	ND<250	ND	NA
t-Butyl alcohol (TBA)	ND<50	ND<50	ND<2500	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND<5.0	ND<5.0	ND<250	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<5.0	ND<5.0	ND<250	ND	NA	0.5
Diisopropyl ether (DIPE)	ND<5.0	ND<5.0	ND<250	ND	NA	0.5
Ethanol	ND<500	ND<500	ND<25,000	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND<5.0	ND<250	ND	NA	0.5
Methanol	ND<5000	ND<5000	ND<250,000	ND	NA	500
Methyl-t-butyl ether (MTBE)	260	140	11,000	ND	NA	0.5

**Surrogate Recoveries (%)**

%SS:	104	105	102	106	
Comments		i			

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

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

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

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.



# McC Campbell Analytical, Inc.

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

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 04/29/04
		Date Received: 04/29/04
	Client Contact: Tim Cook	Date Extracted: 05/01/04-05/04/04
	Client P.O.:	Date Analyzed: 05/01/04-05/04/04

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0404460

Lab ID	0404460-005B	0404460-006B	0404460-007B	0404460-008B	Reporting Limit for DF = 1	
Client ID	MW-7	MW-8	MW-9	MW-10		
Matrix	W	W	W	W		
DF	500	10	1	33		

Compound	Concentration				ug/kg	ug/L
	tert-Amyl methyl ether (TAME)	ND<250	ND<5.0	ND	24	NA
t-Butyl alcohol (TBA)	ND<2500	ND<50	ND	ND<170	NA	5.0
1,2-Dibromoethane (EDB)	ND<250	ND<5.0	ND	ND<17	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<250	ND<5.0	0.63	ND<17	NA	0.5
Diisopropyl ether (DIPE)	ND<250	ND<5.0	ND	ND<17	NA	0.5
Ethanol	ND<25,000	ND<500	ND	ND<1700	NA	50
Ethyl tert-butyl ether (ETBE)	ND<250	ND<5.0	ND	ND<17	NA	0.5
Methanol	ND<250,000	ND<5000	ND	ND<17,000	NA	500
Methyl-t-butyl ether (MTBE)	12,000	130	4.7	1000	NA	0.5

### Surrogate Recoveries (%)

%SS:	104	105	108	110	
Comments					

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

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

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

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0404460

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 11331			Spiked Sample ID: 0404456-003A			
	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) <sup>‡</sup>	ND	60	98.8	98.7	0.0789	100	100	0	70	130
MTBE	ND	10	104	104	0	118	108	8.87	70	130
Benzene	ND	10	105	109	3.94	113	108	4.61	70	130
Toluene	ND	10	101	103	2.51	106	102	4.07	70	130
Ethylbenzene	ND	10	106	111	4.69	113	109	4.08	70	130
Xylenes	ND	30	95.7	100	4.43	100	96.3	3.74	70	130
%SS	98.3	10	101	102	0.586	104	102	1.86	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 =  $100 \cdot (\text{MS-Sample}) / (\text{Amount Spiked})$ ; RPD =  $100 \cdot (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .

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

‡ 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



QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0404460

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 11349			Spiked Sample ID: 0404464-001A			
	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) <sup>£</sup>	ND	60	101	96.7	4.05	99.5	98.6	0.895	70	130
MTBE	ND	10	101	103	1.17	106	101	5.14	70	130
Benzene	ND	10	109	107	1.92	111	105	5.38	70	130
Toluene	ND	10	103	101	1.83	105	100	4.67	70	130
Ethylbenzene	ND	10	109	108	1.58	110	106	3.46	70	130
Xylenes	ND	30	100	95.7	4.43	96.3	95.3	1.04	70	130
%SS	99.8	10	104	104	0	105	103	1.85	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  
 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$   
 \* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked; or b) if that specific sample matrix interferes with spike recovery.  
 £ 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



### QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0404460

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 11345			Spiked Sample ID: 0404458-003B			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	81.9	77.7	5.33	90.3	88.3	2.26	70	130
t-Butyl alcohol (TBA)	ND	50	79.6	92.2	14.7	97.7	92.2	5.76	70	130
1,2-Dibromoethane (EDB)	ND	10	120	105	13.6	103	103	0	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	92.2	91.1	1.23	102	98.8	2.85	70	130
Diisopropyl ether (DIPE)	ND	10	101	90.8	10.4	91.7	91.8	0.0784	70	130
Ethanol	ND	500	85	83	2.42	114	117	2.56	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	95.2	87.1	8.83	97	94.1	3.14	70	130
Methanol	ND	2500	84.7	91.5	7.81	73.5	89.2	19.3	70	130
Methyl-t-butyl ether (MTBE)	ND	10	89.6	86.5	3.56	95.7	88.6	7.67	70	130
%SS1	121	10	118	116	1.84	103	101	1.58	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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

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

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







# McC Campbell 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

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 05/13/04
		Date Received: 05/13/04
	Client Contact: Tim Cook	Date Reported: 05/20/04
	Client P.O.:	Date Completed: 05/20/04

**WorkOrder: 0405206**

May 20, 2004

Dear Tim:

Enclosed are:

- 1). the results of 4 analyzed samples from your #3936; High Street project,
- 2). a QC report for the above samples
- 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. McC Campbell 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





# McC Campbell 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

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 05/13/04
		Date Received: 05/13/04
	Client Contact: Tim Cook	Date Extracted: 05/14/04
	Client P.O.:	Date Analyzed: 05/14/04

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0405206

Lab ID	0405206-001B	0405206-002B	0405206-003B	0405206-004B	Reporting Limit for DF = 1	
Client ID	MW-5	MW-7	MW-8	MW-9	S	W
Matrix	W	W	W	W		
DF	100	330	5	1		
Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<50	ND<170	ND<2.5	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<500	ND<1700	ND<25	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND<50	ND<170	ND<2.5	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<50	ND<170	ND<2.5	0.66	NA	0.5
Diisopropyl ether (DIPE)	ND<50	ND<170	ND<2.5	ND	NA	0.5
Ethanol	ND<5000	ND<17,000	ND<250	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND<50	ND<170	ND<2.5	ND	NA	0.5
Methanol	ND<50,000	ND<170,000	ND<2500	ND	NA	500
Methyl-t-butyl ether (MTBE)	3000	10,000	110	5.9	NA	0.5

### Surrogate Recoveries (%)

%SS:	118	90.5	89.3	113	
Comments		i	i	i	

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

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

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

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0405206

EPA Method: SW8021B/8015Cm			Extraction: SW5030B			BatchID: 11543			Spiked Sample ID: 0405228-001A	
	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) <sup>£</sup>	ND	60	103	103	0	102	97.3	4.27	70	130
MTBE	ND	10	102	105	2.37	101	101	0	70	130
Benzene	ND	10	112	114	1.42	113	110	2.71	70	130
Toluene	ND	10	108	107	0.391	113	105	6.78	70	130
Ethylbenzene	ND	10	112	115	2.10	116	110	5.39	70	130
Xylenes	ND	30	100	107	6.45	107	100	6.45	70	130
%SS	99.5	10	103	102	1.27	102	102	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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ 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.





QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0405206

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 11529			Spiked Sample ID: 0405191-010A			
	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) <sup>£</sup>	ND	60	98.7	103	3.84	104	91.9	12.5	70	130
MTBE	ND	10	89.5	83.8	6.55	89.6	89.3	0.404	70	130
Benzene	ND	10	93.1	101	8.34	103	87.2	16.2	70	130
Toluene	0.58	10	93.9	106	11.4	106	102	3.95	70	130
Ethylbenzene	ND	10	117	114	2.49	118	104	12.4	70	130
Xylenes	ND	30	103	107	3.17	107	95.3	11.2	70	130
%SS:	99.8	10	106	104	1.96	105	106	0.367	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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ 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.



QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0405206

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 11492			Spiked Sample ID: 0405183-001A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	90.3	97.3	7.50	98.1	91.6	6.84	70	130
t-Butyl alcohol (TBA)	ND	50	84.6	90.4	6.61	100	84.8	16.6	70	130
1,2-Dibromoethane (EDB)	ND	10	101	105	4.07	110	104	5.11	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	107	110	2.59	114	107	7.04	70	130
Diisopropyl ether (DIPE)	ND	10	116	119	2.28	120	117	1.86	70	130
Ethanol	ND	500	84	102	19.0	101	97.1	4.25	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	101	105	3.94	109	102	6.08	70	130
Methanol	ND	2500	88.4	88.1	0.308	91	82.1	10.2	70	130
Methyl-t-butyl ether (MTBE)	ND	10	95.5	102	6.56	106	97.3	8.22	70	130
%SSI	86.9	10	100	102	1.73	102	96.5	5.10	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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery

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

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

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

# McC Campbell Analytical, Inc.

# CHAIN-OF-CUSTODY RECORD



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

WorkOrder: 0405206

ClientID: WACD

**Report to:**

Tim Cook  
 W. A. Craig Inc.  
 6940 Tremont Road  
 Dixon, CA 95620-9603

TEL: (707) 693-2929  
 FAX: (707) 693-2922  
 ProjectNo: #3936; High Street  
 PO:

**Bill to:**

Christine  
 W. A. Craig Inc.  
 6940 Tremont Road  
 Dixon, CA 95620-9603

Requested TAT: 5 days

Date Received: 5/13/04

Date Printed: 5/13/04

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	
0405206-001	MW-5	Water	5/13/04	<input type="checkbox"/>	B	A	A													
0405206-002	MW-7	Water	5/13/04	<input type="checkbox"/>	B	A														
0405206-003	MW-8	Water	5/13/04	<input type="checkbox"/>	B	A														
0405206-004	MW-9	Water	5/13/04	<input type="checkbox"/>	B	A														

**Test Legend:**

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

Prepared by: Melissa Valles

**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.





**McC Campbell 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

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 05/26/04
		Date Received: 05/26/04
	Client Contact: Tim Cook	Date Reported: 06/01/04
	Client P.O.:	Date Completed: 06/01/04

**WorkOrder: 0405426**

June 01, 2004

Dear Tim:

Enclosed are:

- 1). the results of 4 analyzed samples from your **#3936; High St. project**,
- 2). a QC report for the above samples
- 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. McC Campbell 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





**McC Campbell Analytical, Inc.**

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

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 05/26/04
	Client Contact: Tim Cook	Date Received: 05/26/04
	Client P.O.:	Date Extracted: 05/27/04-05/28/04
		Date Analyzed: 05/27/04-05/28/04

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0405426

Lab ID	0405426-001B	0405426-002B	0405426-003B	0405426-004B	Reporting Limit for DF = 1	
Client ID	MW-5	MW-7	MW-8	MW-9		
Matrix	W	W	W	W		
DF	20	400	5	1		

Compound	Concentration				ug/kg	ug/L
	tert-Amyl methyl ether (TAME)	ND<10	ND<200	ND<2.5	ND	NA
t-Butyl alcohol (TBA)	ND<100	ND<2000	ND<25	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND<10	ND<200	ND<2.5	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<10	ND<200	ND<2.5	0.53	NA	0.5
Diisopropyl ether (DIPE)	ND<10	ND<200	ND<2.5	ND	NA	0.5
Ethanol	ND<1000	ND<20,000	ND<250	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND<10	ND<200	ND<2.5	ND	NA	0.5
Methanol	ND<10,000	ND<200,000	ND<2500	ND	NA	500
Methyl-t-butyl ether (MTBE)	460	7600	150	2.5	NA	0.5

**Surrogate Recoveries (%)**

%SS:	100	95.3	102	100	
Comments		i		i	

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

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

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

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0405426

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 11702			Spiked Sample ID: 0405426-004A			
	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) <sup>£</sup>	ND	60	98.9	102	2.81	99.2	102	2.59	70	130
MTBE	ND	10	102	99.2	2.65	116	117	0.343	70	130
Benzene	ND	10	114	112	1.26	108	108	0	70	130
Toluene	ND	10	108	108	0	105	104	1.48	70	130
Ethylbenzene	ND	10	111	111	0	107	109	1.44	70	130
Xylenes	ND	30	100	100	0	96.3	100	3.74	70	130
%SS:	96.5	10	104	102	2.14	100	100	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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

£ 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.

QA/QC Officer





### QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0405426

EPA Method: SW8260B		Extraction: SW5030B			BatchID: 11697		Spiked Sample ID: 0405423-001C			
	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	89.5	92.2	2.91	94.9	100	5.41	70	130
t-Butyl alcohol (TBA)	ND	50	94	102	8.17	109	120	9.50	70	130
1,2-Dibromoethane (EDB)	ND	10	107	108	0.826	110	118	6.48	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	113	117	3.71	120	126	5.30	70	130
Diisopropyl ether (DIPE)	ND	10	118	119	0.393	121	124	2.89	70	130
Ethanol	ND	500	101	99.7	1.68	103	102	1.43	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	102	105	2.95	107	111	3.63	70	130
Methanol	ND	2500	86.7	96.6	10.9	101	100	0.402	70	130
Methyl-t-butyl ether (MTBE)	0.51	10	92.8	98.4	5.57	104	111	6.28	70	130
%SS1:	85.6	10	98.7	99	0.337	101	104	2.63	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 =  $100 * (MS - MSD) / ((MS + MSD) / 2)$ .

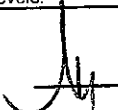
\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

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

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

DHS Certification No. 1644

 QA/QC Officer

# CHAIN-OF-CUSTODY RECORD

## McCampbell Analytical, Inc.



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

WorkOrder: 0405426

ClientID: WACD

**Report to:**

Tim Cook  
 W. A. Craig Inc.  
 6940 Tremont Road  
 Dixon, CA 95620-9603

TEL: (707) 693-2929  
 FAX: (707) 693-2922  
 ProjectNo: #3936; High St.  
 PO:

**Bill to:**

Christine  
 W. A. Craig Inc.  
 6940 Tremont Road  
 Dixon, CA 95620-9603

Requested TAT: 5 days

Date Received: 5/26/04  
 Date Printed: 5/26/04

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
0405426-001	MW-5	Water	5/26/04	<input type="checkbox"/>	B	A	A												
0405426-002	MW-7	Water	5/26/04	<input type="checkbox"/>	B	A													
0405426-003	MW-8	Water	5/26/04	<input type="checkbox"/>	B	A													
0405426-004	MW-9	Water	5/26/04	<input type="checkbox"/>	B	A													

**Test Legend:**

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

Prepared by: Melissa Valles

**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.

0405420

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

(925) 798-1620

Fax: (925) 798-1622

**CHAIN OF CUSTODY RECORD**

Turn Around Time: RUSH 24 HR 48 HR 72 HR 5 DAY ◀

EDF Required: Yes No

Report To: Tim Cook Bill To: W. A. Craig, Inc.

Company: W.A. Craig, Inc.

Address: 6940 Tremont Rd., Dixon, CA 95620

E-Mail: tech@wacraig.com

Tel: (707) 693-2929

Fax: (707) 693-2922

Project #: 3936

Proj. Name: High St

Project Location: Oakland, CA

Sampler Signature: [Signature]

**Analysis Request**

**Comments**

SAMPLE ID	DEPTH	DATE	TIME	# Containers	Type Containers	MATRIX		METHOD PRESERVED				BTEX+MIBE & TPH-g (8021B & 8015M)	TPH as Diesel (8015M)	Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	Halogenated VOCs (EPA 601 / 8010)	BTEX only (EPA 602 / 8021B)	Fuel Additives/Oxygenates (EPA 8260)	VOCs (EPA 8260)	SVOCs (EPA 625/8270)	Pesticides (EPA 608/8081)	PCBs only (EPA 608/8080)	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)									
						Water	Soil	Ice	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>																							
+ MW-5		5/22/04		3	VOL	X		X	X									X																
+ MW-7																																		
+ MW-8																																		
+ MW-9																																		

Relinquished By:

Clayton Moleri

Date:

5/22/04

Time:

13:00

Received By:

[Signature]

Relinquished By:

[Signature]

Date:

5/26

Time:

6:25p

Received By:

McVall

Relinquished By:

Date:

Time:

Received By:

ICE/r  PRESERVATION  VOAS  O&G  METALS  OTHER   
 GOOD CONDITION   
 HEAD SPACE ABSENT  APPROPRIATE CONTAINERS   
 DECHLORINATED IN LAB  PERSERVED IN LAB



Report Number : 38709

Date : 6/17/2004

Brian Milton  
W.A. Craig, Inc.  
6940 Tremont Road  
Dixon, CA 95620

Subject : 4 Water Samples  
Project Name : High St  
Project Number : 3936  
P.O. Number : 3936

Dear Mr. Milton,

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

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

Sincerely,



Jbel Kiff



Report Number : 38709

Date : 6/17/2004

Subject : 4 Water Samples  
Project Name : High St  
Project Number : 3936  
P.O. Number : 3936

## Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample MW-7.

Approved By:

A handwritten signature in black ink, appearing to read "Joe Kiff", is written over the printed name.

Joe Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-5

Matrix : Water

Lab Number : 38709-01

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Methyl-t-butyl ether (MTBE)	38	0.50	ug/L	EPA 8260B	6/16/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	6/16/2004
4-Bromofluorobenzene (Surr)	94.1		% Recovery	EPA 8260B	6/16/2004

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-7

Matrix : Water

Lab Number : 38709-02

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 10	10	ug/L	EPA 8260B	6/16/2004
Toluene	< 10	10	ug/L	EPA 8260B	6/16/2004
Ethylbenzene	< 10	10	ug/L	EPA 8260B	6/16/2004
Total Xylenes	< 10	10	ug/L	EPA 8260B	6/16/2004
Methyl-t-butyl ether (MTBE)	4900	10	ug/L	EPA 8260B	6/16/2004
Diisopropyl ether (DIPE)	< 10	10	ug/L	EPA 8260B	6/16/2004
Ethyl-t-butyl ether (ETBE)	< 10	10	ug/L	EPA 8260B	6/16/2004
Tert-amyl methyl ether (TAME)	< 10	10	ug/L	EPA 8260B	6/16/2004
Tert-Butanol	300	100	ug/L	EPA 8260B	6/16/2004
Methanol	< 10000	10000	ug/L	EPA 8260B	6/16/2004
Ethanol	< 100	100	ug/L	EPA 8260B	6/16/2004
1,2-Dichloroethane	< 10	10	ug/L	EPA 8260B	6/16/2004
1,2-Dibromoethane	< 10	10	ug/L	EPA 8260B	6/16/2004
TPH as Gasoline	< 1000	1000	ug/L	EPA 8260B	6/16/2004
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/16/2004
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/16/2004

Approved By:

Joel Kiff



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-8

Matrix : Water

Lab Number : 38709-03

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	290	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/15/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	93.3		% Recovery	EPA 8260B	6/14/2004

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800





Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-9

Matrix : Water

Lab Number : 38709-04

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	14	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	0.60	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	91.7		% Recovery	EPA 8260B	6/14/2004

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 38709


Date : 6/17/2004

QC Report : Method Blank Data

Project Name : High St

Project Number : 3936

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004	Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	98.7		%	EPA 8260B	6/16/2004	Toluene - d8 (Surr)	109		%	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	90.8		%	EPA 8260B	6/16/2004	4-Bromofluorobenzene (Surr)	95.6		%	EPA 8260B	6/14/2004
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004						
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004						
Toluene - d8 (Surr)	104		%	EPA 8260B	6/16/2004						
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	6/16/2004						

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 38709

Date : 6/17/2004

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : High St

Project Number : 3936

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	38737-01	<0.50	40.1	39.8	39.4	40.0	ug/L	EPA 8260B	6/16/04	98.3	100	2.16	70-130	25
Toluene	38737-01	<0.50	40.1	39.8	38.8	39.4	ug/L	EPA 8260B	6/16/04	96.8	98.8	1.98	70-130	25
Tert-Butanol	38737-01	<5.0	200	199	181	180	ug/L	EPA 8260B	6/16/04	90.4	90.4	0.0638	70-130	25
Methyl-t-Butyl Ether	38737-01	<0.50	40.1	39.8	39.5	39.5	ug/L	EPA 8260B	6/16/04	98.6	99.2	0.598	70-130	25
Benzene	38756-01	<0.50	40.0	40.0	38.8	37.9	ug/L	EPA 8260B	6/16/04	97.1	94.8	2.38	70-130	25
Toluene	38756-01	<0.50	40.0	40.0	40.0	39.2	ug/L	EPA 8260B	6/16/04	100	97.9	2.14	70-130	25
Tert-Butanol	38756-01	<5.0	200	200	191	198	ug/L	EPA 8260B	6/16/04	95.6	99.1	3.58	70-130	25
Methyl-t-Butyl Ether	38756-01	<0.50	40.0	40.0	41.6	41.3	ug/L	EPA 8260B	6/16/04	104	103	0.672	70-130	25
Benzene	38699-01	<0.50	40.0	40.0	38.0	37.1	ug/L	EPA 8260B	6/14/04	94.9	92.8	2.26	70-130	25
Toluene	38699-01	<0.50	40.0	40.0	38.0	37.4	ug/L	EPA 8260B	6/14/04	95.0	93.5	1.58	70-130	25
Tert-Butanol	38699-01	<5.0	200	200	188	191	ug/L	EPA 8260B	6/14/04	94.0	95.3	1.42	70-130	25
Methyl-t-Butyl Ether	38699-01	<0.50	40.0	40.0	39.3	39.4	ug/L	EPA 8260B	6/14/04	98.2	98.6	0.432	70-130	25
Benzene	38723-01	<0.50	40.0	40.0	35.1	36.1	ug/L	EPA 8260B	6/14/04	87.8	90.2	2.65	70-130	25
Toluene	38723-01	<0.50	40.0	40.0	35.4	36.3	ug/L	EPA 8260B	6/14/04	88.6	90.7	2.35	70-130	25
Tert-Butanol	38723-01	<5.0	200	200	177	190	ug/L	EPA 8260B	6/14/04	88.7	95.0	6.85	70-130	25
Methyl-t-Butyl Ether	38723-01	42	40.0	40.0	77.6	78.0	ug/L	EPA 8260B	6/14/04	88.2	89.4	1.41	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 38709

Date : 6/17/2004

QC Report : Laboratory Control Sample (LCS)

Project Name : **High St**

Project Number : **3936**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	6/15/04	97.6	70-130
Toluene	40.0	ug/L	EPA 8260B	6/15/04	98.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/15/04	88.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/15/04	99.0	70-130
Benzene	40.0	ug/L	EPA 8260B	6/16/04	96.0	70-130
Toluene	40.0	ug/L	EPA 8260B	6/16/04	99.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/16/04	94.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/16/04	99.3	70-130
Benzene	40.0	ug/L	EPA 8260B	6/14/04	91.0	70-130
Toluene	40.0	ug/L	EPA 8260B	6/14/04	91.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/14/04	90.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/14/04	95.0	70-130
Benzene	40.0	ug/L	EPA 8260B	6/14/04	95.1	70-130
Toluene	40.0	ug/L	EPA 8260B	6/14/04	95.6	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/14/04	94.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/14/04	97.8	70-130

KIFF ANALYTICAL, LLC

Approved By:

Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



2795 2nd Street Suite 300  
 Davis, CA 95618  
 Lab: 530.297.4800  
 Fax: 530.297.4808

Lab No. 38709

Page 1 of 1

Project Contact (Hardcopy or PDF To):  
 Tim Cook Brian Milton

California EDF Report?  Yes  No

Company / Address:  
 W. A. Craig, INC., 6940 Tremont Rd, Dixon, CA

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Phone No.: 707-693-2929  
 Fax No.: 707-693-2922

Global ID:  
 70600100092

Project Number: 3936  
 P.O. No.: 3936

EDF Deliverable To (Email Address):  
 Thanield@wacraig.com

Project Name:  
 High St

Sampler Signature: *CLM*

Project Address:  
 2951 High St  
 Oakland CA

Sampling Container Preservative Matrix

Sample Designation

Date	Time	40 ml VOA	SLEEVE	POLY	AMBER	HCl	HNO <sub>3</sub>	ICE	NONE	WATER	SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas (8260B)	7 Oxygenates/TPH Gas (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL <input type="checkbox"/> W.E.T. <input type="checkbox"/>	TAT	For Lab Use Only	
6/10/04		X				X		X		X		X							X	X						01	
																										02	
																										03	
																										04	

Relinquished by: *Clyde Mokri* Date: 6/10/04 Time: 12:57 Received by: *[Signature]*

Relinquished by: *[Signature]* Date: 06/10/04 Time: 17:47 Received by: *[Signature]*

Relinquished by: *[Signature]* Date: 06/10/04 Time: 17:47 Received by Laboratory: *Ron Hagg Riff Analytical*

Remarks:  
 3 vials per sample

Bill to:



Report Number : 38709

Date : 6/17/2004

Brian Milton  
W.A. Craig, Inc.  
6940 Tremont Road  
Dixon, CA 95620

Subject : 4 Water Samples  
Project Name : High St  
Project Number : 3936  
P.O. Number : 3936

Dear Mr. Milton,

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

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

Sincerely,



Joel Kiff



Report Number : 38709

Date : 6/17/2004

Subject : 4 Water Samples  
Project Name : High St  
Project Number : 3936  
P.O. Number : 3936

## Case Narrative

The Method Reporting Limit for Methanol has been increased due to the presence of an interfering compound for sample MW-7.

Approved By:

A handwritten signature in black ink, appearing to read "Joe Kiff".

Joe Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-5

Matrix : Water

Lab Number : 38709-01

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Methyl-t-butyl ether (MTBE)	38	0.50	ug/L	EPA 8260B	6/16/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	6/16/2004
4-Bromofluorobenzene (Surr)	94.1		% Recovery	EPA 8260B	6/16/2004

Approved By:

Joel Kiff





Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-7

Matrix : Water

Lab Number : 38709-02

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 10	10	ug/L	EPA 8260B	6/16/2004
Toluene	< 10	10	ug/L	EPA 8260B	6/16/2004
Ethylbenzene	< 10	10	ug/L	EPA 8260B	6/16/2004
Total Xylenes	< 10	10	ug/L	EPA 8260B	6/16/2004
Methyl-t-butyl ether (MTBE)	4900	10	ug/L	EPA 8260B	6/16/2004
Diisopropyl ether (DIPE)	< 10	10	ug/L	EPA 8260B	6/16/2004
Ethyl-t-butyl ether (ETBE)	< 10	10	ug/L	EPA 8260B	6/16/2004
Tert-amyl methyl ether (TAME)	< 10	10	ug/L	EPA 8260B	6/16/2004
Tert-Butanol	300	100	ug/L	EPA 8260B	6/16/2004
Methanol	< 10000	10000	ug/L	EPA 8260B	6/16/2004
Ethanol	< 100	100	ug/L	EPA 8260B	6/16/2004
1,2-Dichloroethane	< 10	10	ug/L	EPA 8260B	6/16/2004
1,2-Dibromoethane	< 10	10	ug/L	EPA 8260B	6/16/2004
TPH as Gasoline	< 1000	1000	ug/L	EPA 8260B	6/16/2004
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/16/2004
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/16/2004

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936

Sample : MW-8

Matrix : Water

Lab Number : 38709-03

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	290	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/15/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	93.3		% Recovery	EPA 8260B	6/14/2004

Approved By:

Joel Kiff



Report Number : 38709

Date : 6/17/2004

Project Name : High St

Project Number : 3936


Sample : MW-9

Matrix : Water

Lab Number : 38709-04

Sample Date : 6/10/2004

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	14	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	0.60	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	91.7		% Recovery	EPA 8260B	6/14/2004

Approved By:  Joel Kiff

Report Number : 38709


Date : 6/17/2004

**QC Report : Method Blank Data**

Project Name : **High St**

Project Number : **3936**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004	Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004	Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004	Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/14/2004
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/14/2004
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004	TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene - d8 (Surr)	98.7		%	EPA 8260B	6/16/2004	Toluene - d8 (Surr)	109		%	EPA 8260B	6/14/2004
4-Bromofluorobenzene (Surr)	90.8		%	EPA 8260B	6/16/2004	4-Bromofluorobenzene (Surr)	95.6		%	EPA 8260B	6/14/2004
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004	Methanol	< 50	50	ug/L	EPA 8260B	6/14/2004
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004						
Methanol	< 50	50	ug/L	EPA 8260B	6/16/2004						
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	6/16/2004						
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	6/16/2004						
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2004						
Toluene - d8 (Surr)	104		%	EPA 8260B	6/16/2004						
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	6/16/2004						

Approved By:  Joel Kiff

Report Number : 38709


Date : 6/17/2004

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : High St

Project Number : 3936

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	38737-01	<0.50	40.1	39.8	39.4	40.0	ug/L	EPA 8260B	6/16/04	98.3	100	2.16	70-130	25
Toluene	38737-01	<0.50	40.1	39.8	38.8	39.4	ug/L	EPA 8260B	6/16/04	96.8	98.8	1.98	70-130	25
Tert-Butanol	38737-01	<5.0	200	199	181	180	ug/L	EPA 8260B	6/16/04	90.4	90.4	0.0638	70-130	25
Methyl-t-Butyl Ether	38737-01	<0.50	40.1	39.8	39.5	39.5	ug/L	EPA 8260B	6/16/04	98.6	99.2	0.598	70-130	25
Benzene	38756-01	<0.50	40.0	40.0	38.8	37.9	ug/L	EPA 8260B	6/16/04	97.1	94.8	2.38	70-130	25
Toluene	38756-01	<0.50	40.0	40.0	40.0	39.2	ug/L	EPA 8260B	6/16/04	100	97.9	2.14	70-130	25
Tert-Butanol	38756-01	<5.0	200	200	191	198	ug/L	EPA 8260B	6/16/04	95.6	99.1	3.58	70-130	25
Methyl-t-Butyl Ether	38756-01	<0.50	40.0	40.0	41.6	41.3	ug/L	EPA 8260B	6/16/04	104	103	0.672	70-130	25
Benzene	38699-01	<0.50	40.0	40.0	38.0	37.1	ug/L	EPA 8260B	6/14/04	94.9	92.8	2.26	70-130	25
Toluene	38699-01	<0.50	40.0	40.0	38.0	37.4	ug/L	EPA 8260B	6/14/04	95.0	93.5	1.58	70-130	25
Tert-Butanol	38699-01	<5.0	200	200	188	191	ug/L	EPA 8260B	6/14/04	94.0	95.3	1.42	70-130	25
Methyl-t-Butyl Ether	38699-01	<0.50	40.0	40.0	39.3	39.4	ug/L	EPA 8260B	6/14/04	98.2	98.6	0.432	70-130	25
Benzene	38723-01	<0.50	40.0	40.0	35.1	36.1	ug/L	EPA 8260B	6/14/04	87.8	90.2	2.65	70-130	25
Toluene	38723-01	<0.50	40.0	40.0	35.4	36.3	ug/L	EPA 8260B	6/14/04	88.6	90.7	2.35	70-130	25
Tert-Butanol	38723-01	<5.0	200	200	177	190	ug/L	EPA 8260B	6/14/04	88.7	95.0	6.85	70-130	25
Methyl-t-Butyl Ether	38723-01	42	40.0	40.0	77.6	78.0	ug/L	EPA 8260B	6/14/04	88.2	89.4	1.41	70-130	25

Approved By:  Joe Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 38709

Date : 6/17/2004

QC Report : Laboratory Control Sample (LCS)

Project Name : **High St**

Project Number : **3936**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	6/15/04	97.6	70-130
Toluene	40.0	ug/L	EPA 8260B	6/15/04	98.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/15/04	88.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/15/04	99.0	70-130
Benzene	40.0	ug/L	EPA 8260B	6/16/04	96.0	70-130
Toluene	40.0	ug/L	EPA 8260B	6/16/04	99.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/16/04	94.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/16/04	99.3	70-130
Benzene	40.0	ug/L	EPA 8260B	6/14/04	91.0	70-130
Toluene	40.0	ug/L	EPA 8260B	6/14/04	91.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/14/04	90.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/14/04	95.0	70-130
Benzene	40.0	ug/L	EPA 8260B	6/14/04	95.1	70-130
Toluene	40.0	ug/L	EPA 8260B	6/14/04	95.6	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/14/04	94.2	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/14/04	97.8	70-130

KIFF ANALYTICAL, LLC

Approved By:

Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800





# North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080  
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis  
Lab Job No.: \_\_\_\_\_ Page 1 of 1

Client: <u>W.A. Craig, Inc</u>	Report to: <u>Brian Miller</u>	Phone: <u>707-693-2129</u>	Turnaround Time <u>5</u>
Mailing Address: <u>6940 Fremont Rd Dixon CA 95620</u>	Billing to: <u>Same</u>	Fax: <u>707-693-2122</u>	
		email:	Sampler: <u>Clay</u>
		PO# <u>3936</u>	

Project / Site Address / Global ID:					Analysis Requested			EDF <input checked="" type="checkbox"/>	Field Point ID
Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPH-5, BTEX	4oxys only			
1 MW-6	H <sub>2</sub> O	3/Vol	HCL	7/8/04 / 9:45	X	X			
2 MW-5				7/8/04 / 10:10					
3 MW-3				7/8/04 / 10:30					
4 MW-1				7/8/04 / 10:50					
5 MW-10				7/8/04 / 11:11					
6 MW-9				7/8/04 / 11:40					
7 MW-7				7/8/04 / 12:00					
8 MW-8				7/8/04 / 12:30					

Relinquished by: <u>[Signature]</u>	Date: <u>7/8/04</u> Time: <u>14:41</u>	Received by: <u>[Signature]</u>	14.47 Lab Comments/ Hazards
Relinquished by: <u>[Signature]</u>	Date: <u>7-9-04</u> Time: <u>16:30</u>	Received by: <u>[Signature]</u>	
Relinquished by:	Date: Time:	Received by:	





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## Laboratory Report Project Overview

EDF 1.2a

Laboratory:	North State Environmental, South San Francisco, CA
Lab Report Number:	04-1052
Project Name:	2951 HIGH ST. OAKLAND
Work Order Number:	04-1052
Control Sheet Number:	T0600100092

# Case Narrative

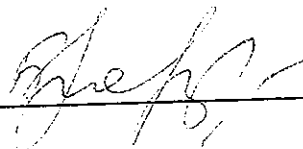
North State Environmental, South San Francisco, CA

Report Date: 07/21/2004  
Report Number: 04-1052

Project: 2951 HIGH ST. OAKLAND  
Order #: 04-1052

Eight water samples were received under chain of custody control for the analysis of gasoline range hydrocarbons by method 8015M, BTEX by method 8021B and fuel oxygenates by GC/MS method 8260B. Results for all QC/QA samples were within acceptance limits. The LCS/LCSD results were reported instead of MS/MSD for 8015M/8021B analyses due to lack of sample volume submitted. No errors occurred during analysis.

Approved by: \_\_\_\_\_



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

7/21/04

# Report Summary

Labreport	Sampid	Labsampid	Mtrix	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
04-1052	MW-1	04-1052-04	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-1	04-1052-04	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-10	04-1052-05	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-10	04-1052-05	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-3	04-1052-03	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-3	04-1052-03	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-5	04-1052-02	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-5	04-1052-02	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-6	04-1052-01	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-6	04-1052-01	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-7	04-1052-07	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-7	04-1052-07	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-8	04-1052-08	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-8	04-1052-08	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
04-1052	MW-9	04-1052-06	W	CS	8260FA	SW5030B	07/08/200	07/20/200	07/20/200	07204MLIST	4	1
							4	4	4			
04-1052	MW-9	04-1052-06	W	CS	SW8020F	SW5030B	07/08/200	07/15/200	07/15/200	07154GBXW3	4	1
							4	4	4			
		04-1052-01	W	NC	8260FA	SW5030B	//	07/20/200	07/20/200	07204MLIST	4	1
								4	4			
	LCSD		W	BD1	SW8020F	SW5030B	//	07/15/200	07/15/200	07154GBXW3	4	1
								4	4			
	LCS		W	BS1	SW8020F	SW5030B	//	07/15/200	07/15/200	07154GBXW3	4	1
								4	4			
	BLK		W	LB1	8260FA	SW5030B	//	07/20/200	07/20/200	07204MLIST	4	1

# Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
								4	4			
		BLK	W	LB1	SW8020F	SW5030B	//	07/15/200	07/15/200	07154GBXW3	1	
								4	4			
		1052-01MS	W	MS1	8260FA	SW5030B	//	07/20/200	07/20/200	07204MLIST	1	
								4	4			
		1052-01MSD	W	SD1	8260FA	SW5030B	//	07/20/200	07/20/200	07204MLIST	1	
								4	4			

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Analysis: Volatile Organic Compounds by GC/MS Fuel  
 Project No: 04-1052 Method: 8260FA  
 Prep Meth: SW5030B

Field ID: MW-1 Lab Samp ID: 04-1052-04  
 Descr/Location: MW-1 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/20/2004  
 Sample Time: 1050 Analysis Date: 07/20/2004  
 Matrix: Water QC Batch: 07204MLIST  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit		Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	EF	341.	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL		ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL		ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL		ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL				
SURROGATE AND INTERNAL STANDARD RECOVERIES:							
4-Bromofluorobenzene		78-121	SLSA		108%		1
Toluene-d8		72-119	SLSA		102%		1
Dibromofluoromethane		67-129	SLSA		109%		1
1,2-Dichloroethane-d4		85-115	SLSA		87%		1

EF: Compound quantitated at a different dilution

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.  
Project No: 04-1052

Analysis: Volatile Organic Compounds by GC/MS Fuel  
Method: 8260FA  
Prep Meth: SW5030B

Field ID: MW-3  
Descr/Location: MW-3  
Sample Date: 07/08/2004  
Sample Time: 1030  
Matrix: Water  
Basis: Wet

Lab Samp ID: 04-1052-03  
Rec'd Date: 07/09/2004  
Prep Date: 07/20/2004  
Analysis Date: 07/20/2004  
QC Batch: 07204MLIST  
Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	24.3	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	106%		1
Toluene-d8		72-119	SLSA	102%		1
Dibromofluoromethane		67-129	SLSA	107%		1
1,2-Dichloroethane-d4		85-115	SLSA	87%		1

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Analysis: Volatile Organic Compounds by GC/MS Fuel  
 Project No: 04-1052 Method: 8260FA  
 Prep Meth: SW5030B

Field ID: MW-10 Lab Samp ID: 04-1052-05  
 Descr/Location: MW-10 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/20/2004  
 Sample Time: 1111 Analysis Date: 07/20/2004  
 Matrix: Water QC Batch: 07204MLIST  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL EF	1650.	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	37.	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	211.	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	108%		1
Toluene-d8		72-119	SLSA	107%		1
Dibromofluoromethane		67-129	SLSA	106%		1
1,2-Dichloroethane-d4		85-115	SLSA	86%		1

EF: Compound quantitated at a different dilution

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Analysis: Volatile Organic Compounds by GC/MS Fuel  
 Project No: 04-1052 Method: 8260FA  
 Prep Meth: SW5030B

Field ID: MW-5 Lab Samp ID: 04-1052-02  
 Descr/Location: MW-5 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/20/2004  
 Sample Time: 1010 Analysis Date: 07/20/2004  
 Matrix: Water QC Batch: 07204MLIST  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	9.6	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene		78-121	SLSA	106%		1
Toluene-d8		72-119	SLSA	102%		1
Dibromofluoromethane		67-129	SLSA	108%		1
1,2-Dichloroethane-d4		85-115	SLSA	83% !		1

Approved by: \_\_\_\_\_

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



Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Analysis: Volatile Organic Compounds by GC/MS Fuel  
 Project No: 04-1052 Method: 8260FA  
 Prep Meth: SW5030B

Field ID: MW-6 Lab Samp ID: 04-1052-01  
 Descr/Location: MW-6 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/20/2004  
 Sample Time: 0945 Analysis Date: 07/20/2004  
 Matrix: Water QC Batch: 07204MLIST  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	105%		1
Toluene-d8		72-119	SLSA	100%		1
Dibromofluoromethane		67-129	SLSA	105%		1
1,2-Dichloroethane-d4		85-115	SLSA	86%		1

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Analysis: Volatile Organic Compounds by GC/MS Fuel  
 Project No: 04-1052 Method: 8260FA  
 Prep Meth: SW5030B

Field ID: MW-7 Lab Samp ID: 04-1052-07  
 Descr/Location: MW-7 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/20/2004  
 Sample Time: 1200 Analysis Date: 07/20/2004  
 Matrix: Water QC Batch: 07204MLIST  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL EF	1040.	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	1.	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	106%		1
Toluene-d8		72-119	SLSA	102%		1
Dibromofluoromethane		67-129	SLSA	113%		1
1,2-Dichloroethane-d4		85-115	SLSA	90%		1

EF: Compound quantitated at a different dilution

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST. Project No: 04-1052	Analysis: Volatile Organic Compounds by GC/MS Fuel Method: 8260FA Prep Meth: SW5030B
Field ID: MW-8 Descr/Location: MW-8 Sample Date: 07/08/2004 Sample Time: 1230 Matrix: Water Basis: Wet	Lab Samp ID: 04-1052-08 Rec'd Date: 07/09/2004 Prep Date: 07/20/2004 Analysis Date: 07/20/2004 QC Batch: 07204MLIST Notes:

Analyte	Det Limit	Rep Limit	PQL	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	EF	395	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL		ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL		ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL		ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL		ND	UG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>							
4-Bromofluorobenzene		78-121	SLSA		105%		1
Toluene-d8		72-119	SLSA		99%		1
Dibromofluoromethane		67-129	SLSA		114%		1
1,2-Dichloroethane-d4		85-115	SLSA		89%		1

EF: Compound quantitated at a different dilution

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.  
Project No: 04-1052Analysis: Volatile Organic Compounds by GC/MS Fuel  
Method: 8260FA  
Prep Meth: SW5030BField ID: MW-9  
Descr/Location: MW-9  
Sample Date: 07/08/2004  
Sample Time: 1140  
Matrix: Water  
Basis: WetLab Samp ID: 04-1052-06  
Rec'd Date: 07/09/2004  
Prep Date: 07/20/2004  
Analysis Date: 07/20/2004  
QC Batch: 07204MLIST  
Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL	7.3	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL	ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL	ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		78-121	SLSA	109%		1
Toluene-d8		72-119	SLSA	102%		1
Dibromofluoromethane		67-129	SLSA	112%		1
1,2-Dichloroethane-d4		85-115	SLSA	90%		1

Approved by: \_\_\_\_\_

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

Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-1	Lab Samp ID: 04-1052-04
Descr/Location: MW-1	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 1050	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

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Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-10	Lab Samp ID: 04-1052-05
Descr/Location: MW-10	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 1111	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		76	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

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Project Name: 2951 HIGH ST. Analysis: BTEX/Gasoline Range Organics (SW8020/8015)  
 Project No: 04-1052 Method: SW8020F  
 Prep Meth: SW5030B

Field ID: MW-3 Lab Samp ID: 04-1052-03  
 Descr/Location: MW-3 Rec'd Date: 07/09/2004  
 Sample Date: 07/08/2004 Prep Date: 07/15/2004  
 Sample Time: 1030 Analysis Date: 07/15/2004  
 Matrix: Water QC Batch: 07154GBXW3  
 Basis: Wet Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.  
Project No: 04-1052Analysis: BTEX/Gasoline Range Organics (SW8020/8015)  
Method: SW8020F  
Prep Meth: SW5030BField ID: MW-5  
Descr/Location: MW-5  
Sample Date: 07/08/2004  
Sample Time: 1010  
Matrix: Water  
Basis: WetLab Samp ID: 04-1052-02  
Rec'd Date: 07/09/2004  
Prep Date: 07/15/2004  
Analysis Date: 07/15/2004  
QC Batch: 07154GBXW3  
Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50.	PQL	ND	UG/L	1
Benzene	0.076	0.5	PQL	1.5	UG/L	1
Toluene	0.160	0.5	PQL	ND	UG/L	1
Ethylbenzene	0.215	0.5	PQL	ND	UG/L	1
Xylenes	0.211	1.0	PQL	ND	UG/L	1

Approved by: \_\_\_\_\_

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



Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B
Field ID: MW-6	Lab Samp ID: 04-1052-01
Descr/Location: MW-6	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 0945	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-7	Lab Samp ID: 04-1052-07
Descr/Location: MW-7	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 1200	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50.	PQL	67.	UG/L	1
Benzene	0.076	0.5	PQL	ND	UG/L	1
Toluene	0.160	0.5	PQL	ND	UG/L	1
Ethylbenzene	0.215	0.5	PQL	1.3	UG/L	1
Xylenes	0.211	1.0	PQL	10.	UG/L	1

Approved by: \_\_\_\_\_

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

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B

Field ID: MW-8	Lab Samp ID: 04-1052-08
Descr/Location: MW-8	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 1230	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50.	PQL	ND	UG/L	1
Benzene	0.076	0.5	PQL	ND	UG/L	1
Toluene	0.160	0.5	PQL	ND	UG/L	1
Ethylbenzene	0.215	0.5	PQL	ND	UG/L	1
Xylenes	0.211	1.0	PQL	ND	UG/L	1

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Lab Report No.: 04-1052 Date: 07/21/2004

Project Name: 2951 HIGH ST.	Analysis: BTEX/Gasoline Range Organics (SW8020/8015)
Project No: 04-1052	Method: SW8020F
	Prep Meth: SW5030B
Field ID: MW-9	Lab Samp ID: 04-1052-06
Descr/Location: MW-9	Rec'd Date: 07/09/2004
Sample Date: 07/08/2004	Prep Date: 07/15/2004
Sample Time: 1140	Analysis Date: 07/15/2004
Matrix: Water	QC Batch: 07154GBXW3
Basis: Wet	Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

# QA/QC Report Method Blank Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1052 Date: 07/21/2004

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QC Batch: 07154GBXW3      Analysis: BTEX/Gasoline Range Organics  
Matrix: Water      Method: SW8020F  
Lab Samp ID: BLK      Prep Meth: SW5030B  
Analysis Date: 07/15/2004      Prep Date: 07/15/2004  
Basis: Wet      Notes:

Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics	4.066	50. PQL		ND	UG/L	1
Benzene	0.076	0.5 PQL		ND	UG/L	1
Toluene	0.160	0.5 PQL		ND	UG/L	1
Ethylbenzene	0.215	0.5 PQL		ND	UG/L	1
Xylenes	0.211	1.0 PQL		ND	UG/L	1

QA/QC Report  
Blank Spike/Duplicate Blank Spike Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1052 Date: 07/21/2004

Page: 18

QC Batch: 07154GBXW3													
Matrix: Water													
Lab Samp ID: LCS													
Analyte	Analysis Method	Spike Level		Spike Result		Units		% Recoveries			Acceptance Criteria		
		LCS	LCD	LCS	LCD			LCS	LCD	RPD	%Rec	RPD	
Benzene	SW8020F	100.	100.	114.	113.	UG/L	ww	114	113	0.88	123-59	MSA	21MSP
Ethylbenzene	SW8020F	100.	100.	120.	107.	UG/L	ww	120	107	11	130-76	MSA	15MSP
Gasoline Range Organics	SW8020F	1000.	1000.	1250.	1240.	UG/L	ww	125	124	0.80	133-64	MSA	25MSP
Toluene	SW8020F	100.	100.	115.	117.	UG/L	ww	115	117	1.7	119-75	MSA	11MSP
Xylenes	SW8020F	300.	300.	376.	372.	UG/L	ww	125	124	0.80	129-78	MSA	11MSP

# QA/QC Report Method Blank Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1052    Date: 07/21/2004

Page: 19

QC Batch:    07204MLIST Matrix:      Water Lab Samp ID: BLK Analysis Date: 07/20/2004 Basis:        Wet	Analysis:    Volatile Organic Compounds by GC/MS Fuel Method:      8260FA Prep Meth:   SW5030B Prep Date:   07/20/2004 Notes:
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Analyte	Det Limit	Rep Limit	PQL	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.314	0.5	PQL		ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.201	1.	PQL		ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.284	1.	PQL		ND	UG/L	1
Di-isopropyl ether (DIPE)	0.189	0.5	PQL		ND	UG/L	1
tert-Butyl alcohol (TBA)	4.956	10.	PQL		ND	UG/L	1
1,2-Dichloroethane	0.167	1.	PQL		ND	UG/L	1
1,2-Dibromoethane	0.216	0.5	PQL		ND	UG/L	1
Ethanol (EtOH)	9.10	100.	PQL		ND	UG/L	1
Benzene	0.176	0.5	PQL		ND	UG/L	1
Toluene	0.478	0.5	PQL		ND	UG/L	1
Chlorobenzene	0.101	1.	PQL		ND	UG/L	1
1,1-Dichloroethene	0.139	0.5	PQL		ND	UG/L	1
Trichloroethene (TCE)	0.120	0.5	PQL		ND	UG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>							
4-Bromofluorobenzene		78-121	SLSA		106%		1
Toluene-d8		72-119	SLSA		101%		1
Dibromofluoromethane		67-129	SLSA		112%		1
1,2-Dichloroethane-d4		85-115	SLSA		86%		1

QA/QC Report  
Matrix Spike/Duplicate Matrix Spike Summary

North State Environmental, South San Francisco, CA

Lab Report No.: 04-1052 Date: 07/21/2004

QC Batch: 07204MLIST  
Matrix: Water  
Lab Samp ID: 1052-01MS  
Basis: Wet

Project Name: Lab Generated or Non COE Sample  
Project No.: Lab Generated or Non COE Sample  
Field ID: Lab Generated or Non COE Sample  
Lab Ref ID: 04-1052-01

Analyte	Analysis Method	Spike Level		Sample Result	Spike Result		Units	% Recoveries			Acceptance Criteria		
		MS	DMS		MS	DMS		MS	DMS	RPD	% Rec	MSA	RPD
1,1-Dichloroethene	8260FA	20.0	20.0	ND	12.8	13.3	UG/L ww	64.0	66.5	3.8	128-61	MSA	25MSP
Benzene	8260FA	20.0	20.0	ND	20.	20.	UG/L ww	100	100	0.00	135-74	MSA	21MSP
Chlorobenzene	8260FA	20.	20.	ND	24.	23.	UG/L ww	120	115	4.3	139-70	MSA	19MSP
Toluene	8260FA	20.0	20.0	ND	22.5	22.4	UG/L ww	113	112	0.89	141-61	MSA	19MSP
Trichloroethene (TCE)	8260FA	20.0	20.0	ND	21.4	21.2	UG/L ww	107	106	0.94	129-69	MSA	20MSP
1,2-Dichloroethane-d4	8260FA	100.	100.	82.	86.	87.	PERCENT ww	86.0	87.0	1.2	115-85	SLSA	25SLSP
4-Bromofluorobenzene	8260FA	100.	100.	105.	105.	106.	PERCENT ww	105	106	0.95	121-78	SLSA	19SLSP
Dibromofluoromethane	8260FA	100.	100.	105.	106.	107.	PERCENT ww	106	107	0.94	129-67	SLSA	21SLSP
Toluene-d8	8260FA	100.	100.	100.	102.	104.	PERCENT ww	102	104	1.9	119-72	SLSA	16SLSP






## Case Narrative

Client: W. A. Craig, Inc  
Project: 2951 HIGH ST., OAKLAND  
Lab No: 04-1052  
Date Received: 07/09/2004

Date reported: 07/21/2004

Eight water samples were received under chain of custody control for the analysis of gasoline range hydrocarbons by method 8015M, BTEX by method 8021B and fuel oxygenates by GC/MS method 8260B. Results for all QC/QA samples were within acceptance limits. The LCS/LCSD results were reported instead of MS/MSD for 8015M/8021B analyses due to lack of sample volume submitted. No errors occurred during analysis.

  
\_\_\_\_\_  
John A. Murphy  
Laboratory Director



# North State Labs

CA ELAP# 1753

90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

## C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1052  
 Client: W.A. Craig, Inc.  
 Project: 2951 HIGH ST. OAKLAND

Date Reported: 07/21/2004

Gasoline and BTEX by Methods 8015M/8021B

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 04-1052-01 Client ID: MW-6				07/08/2004	W
Benzene	SW8020F	ND<0.5	UG/L		07/15/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		07/15/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		07/15/2004
Toluene	SW8020F	ND<0.5	UG/L		07/15/2004
Xylenes	SW8020F	ND<1.0	UG/L		07/15/2004
Sample: 04-1052-02 Client ID: MW-5				07/08/2004	W
Benzene	SW8020F	1.5	UG/L		07/15/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		07/15/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		07/15/2004
Toluene	SW8020F	ND<0.5	UG/L		07/15/2004
Xylenes	SW8020F	ND<1.0	UG/L		07/15/2004
Sample: 04-1052-03 Client ID: MW-3				07/08/2004	W
Benzene	SW8020F	ND<0.5	UG/L		07/15/2004
Ethylbenzene	SW8020F	ND<0.5	UG/L		07/15/2004
Gasoline Range Organics	SW8020F	ND<50	UG/L		07/15/2004
Toluene	SW8020F	ND<0.5	UG/L		07/15/2004
Xylenes	SW8020F	ND<1.0	UG/L		07/15/2004



C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1052
Client: W.A. Craig, Inc.
Project: 2951 HIGH ST. OAKLAND

Date Reported: 07/21/2004

Gasoline and BTEX by Methods 8015M/8021B

Table with 6 columns: Analyte, Method, Result, Unit, Date Sampled, Date Analyzed. Contains three sections of data for samples 04-1052-04, 04-1052-05, and 04-1052-06.



CERTIFICATE OF ANALYSIS

Lab Number: 04-1052
Client: W.A. Craig, Inc.
Project: 2951 HIGH ST. OAKLAND

Date Reported: 07/21/2004

Gasoline and BTEX by Methods 8015M/8021B

Table with 6 columns: Analyte, Method, Result, Unit, Date Sampled, Date Analyzed. Contains two sections of data for Client ID: MW-7 and MW-8, listing analytes like Benzene, Toluene, and Gasoline Range Organics.



CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

Lab Number: 04-1052
Client: W.A. Craig, Inc.
Subject: 2951 HIGH ST. OAKLAND

Date Reported: 07/21/2004
Gasoline and BTEX by Methods 8015M/8021B

Table with 7 columns: Analyte, Method, Reporting Unit, Limit, Blank, Avg MS/MSD Recovery, RPD. Rows include Gasoline Range Organics, Benzene, Toluene, Ethylbenzene, and Xylenes.

ELAP Certificate NO:1753

Reviewed and Approved

Handwritten signature of John A. Murphy

John A. Murphy, Laboratory Director



CERTIFICATE OF ANALYSIS

Job Number: 04-1052
Client : W.A. Craig, Inc.
Project : 2951 HIGH ST. OAKLAND

Date Sampled : 07/08/2004
Date Analyzed: 07/20/2004
Date Reported: 07/21/2004

Fuel Oxygenates by Method 8260B

Table with 6 columns: Laboratory Number, Client ID, Matrix, Analyte, and two columns of sample IDs (04-1052-01 to 04-1052-05). Rows list various analytes like methyl-tert-butyl ether, Ethyl tert-butyl ether, etc., with corresponding values in UG/L.



C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1052  
Client : W.A. Craig, Inc.  
Project : 2951 HIGH ST. OAKLAND

Date Sampled : 07/08/2004  
Date Analyzed: 07/20/2004  
Date Reported: 07/21/2004

Fuel Oxygenates by Method 8260B

Laboratory Number	04-1052-06	04-1052-07	04-1052-08
Client ID	MW-9	MW-7	MW-8
Matrix	W	W	W
Analyte	UG/L	UG/L	UG/L
Methyl-tert-butyl ether	7.3	1040	395
Ethyl tert-butyl ether	ND<1	ND<1	ND<1
tert-Amyl methyl ether	ND<1	ND<1	ND<1
-isopropyl ether (DIPE)	ND<0.5	ND<0.5	ND<0.5
tert-Butyl alcohol	ND<10	ND<10	ND<10
1,2-Dichloroethane	ND<1	ND<1	ND<1
1,2-Dibromoethane	ND<0.5	ND<0.5	ND<0.5
Ethanol	ND<100	ND<100	ND<100
SUR-Dibromofluoromethane	112	113	114
SUR-Toluene-d8	102	102	99
SUR-4-Bromofluorobenzene	109	106	105
SUR-1,2-Dichloroethane-d4	90	90	89



C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1052  
Client : W.A. Craig, Inc.  
Project : 2951 HIGH ST. OAKLAND

Date Sampled : 07/08/2004  
Date Analyzed: 07/20/2004  
Date Reported: 07/21/2004

Fuel Oxygenates by Method 8260B  
Quality Control/Quality Assurance Summary

Laboratory Number	04-1052	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results	%Recoveries			
	UG/L				
Ethanol	ND<100				
Ethyl-tert-butyl ether	ND<0.5				
Isopropyl ether (DIPE)	ND<0.5				
tert-butyl Alcohol	ND<10				
Ethyl tert-butyl ether	ND<1				
tert-Amyl methyl ether	ND<1				
1,1-Dichloroethene	ND<0.5	64/67	5	61-128	25
1,2-Dichloroethane	ND<1				
Benzene	ND<0.5	100/100	0	74-135	21
1,2-Dibromoethane	ND<0.5				
1,1-Dichloroethene	ND<0.5	107/106	1	69-129	20
Toluene	ND<0.5	113/112	1	61-141	19
Chlorobenzene	ND<1	120/115	4	70-139	19
1,1,1-Trichloroethane	112	106/107	1	67-129	21
1,1,2-Trichloroethane	101	102/104	2	72-119	16
SUR-Toluene-d8	106	105/106	1	78-121	19
SUR-4-Bromofluorobenzene	86	86/87	1	85-115	25
SUR-1,2-Dichloroethane-d4					

Reviewed and Approved

*John A. Murphy*  
John A. Murphy  
Laboratory Director





**McC Campbell Analytical, Inc.**

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

# INVOICE for ANALYTICAL SERVICES

**Invoice N°: 0405206**

Project Name: #3936; High Street  
PO Number: N/A  
Date Sampled: 5/13/04  
Date Received: 5/13/04

INV DATE: *May 20, 2004*  
Print DATE: *September 07, 2004*

Report To: Tim Cook  
W. A. Craig Inc.  
6940 Tremont Road  
Dixon, CA 95620-9603

Invoice To: Christine  
W. A. Craig Inc.  
6940 Tremont Road  
Dixon, CA 95620-9603

Description	TAT	Matrix	Qty	Mult	Unit Price	Test Total
Tests:						
EPA 8260B (9 Oxygenates)	5 days	Water	4	1	\$90.00	\$360.00
TPH(g) + MBTEX	5 days	Water	4	1	\$45.00	\$180.00
Miscellaneous:						
EDF Report			1	1	\$25.00	\$25.00
					SubTotal:	\$565.00
						(\$565.00)

Prepaid with check #: 12013 for \$565.00 THANK YOU.

**Invoice Total: \$0.00**

**\* ALL FAXED INVOICES ARE FOR YOUR INFORMATION ONLY - PLEASE PAY OFF ORIGINAL**

Please include the invoice number with your check and remit to Accounts Receivable at the letter head address. MAI also accepts credit card (Visa/Master Card/Discover/American Express) payment. Please call Account Receivable for details on this service.

MAI's EDF charge does not include the EDF charge for subcontracted analyses. The minimum EDF charge per workorder is \$25.00. For invoice total greater than \$5000.00, EDF will be 2% of the total invoice. The EDF charge for subcontracted analyses will be identical to Subcontractor's fee.

Terms are net 30 days from the invoice date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing, please contact Accounts Receivable at McC Campbell Analytical.



**McC Campbell Analytical, Inc.**

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

# INVOICE for ANALYTICAL SERVICES

**Invoice N°: 0405426**

Project Name: #3936; High St.  
PO Number: N/A  
Date Sampled: 5/26/04  
Date Received: 5/26/04

INV DATE: *June 01, 2004*  
Print DATE: *September 07, 2004*

Report To: Tim Cook  
W. A. Craig Inc.  
6940 Tremont Road  
Dixon, CA 95620-9603

Invoice To: Christine  
W. A. Craig Inc.  
6940 Tremont Road  
Dixon, CA 95620-9603

Description	TAT	Matrix	Qty	Mult	Unit Price	Test Total
<b>Tests:</b>						
EPA 8260B (9 Oxygenates)	5 days	Water	4	1	\$90.00	\$360.00
TPH(g) + MBTEX	5 days	Water	4	1	\$45.00	\$180.00
<b>Miscellaneous:</b>						
EDF Report			1	1	\$25.00	\$25.00
					<b>SubTotal:</b>	\$565.00
Prepaid with check #: 12013 for \$565.00 THANK YOU.						(\$565.00)

**Invoice Total: \$0.00**

**\* ALL FAXED INVOICES ARE FOR YOUR INFORMATION ONLY - PLEASE PAY OFF ORIGINAL**

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MAI's EDF charge does not include the EDF charge for subcontracted analyses. The minimum EDF charge per workorder is \$25.00. For invoice total greater than \$5000.00, EDF will be 2% of the total invoice. The EDF charge for subcontracted analyses will be identical to Subcontractor's fee.

Terms are net 30 days from the invoice date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing, please contact Accounts Receivable at McC Campbell Analytical.