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July 23, 2003

Project No. 3936

Mr. Jeff Chow  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, CA 94502

RO 261

Alameda County  
JUL 25 2003  
Environmental Health

Subject: **Quarterly Monitoring Report**  
**2951 High Street**  
**Oakland, California**

Dear Mr. Chow:

W.A. Craig, Inc. is submitting this *Quarterly Monitoring Report* on behalf of the owner, Mr. Aziz Khandari. The report summarizes site investigation activities to delineate a hydrocarbon plume resulting from an underground storage tank leak. The report describes the installation of four new monitoring wells and provides sampling results from eight monitoring wells. We recommend remedial action for groundwater exceeding site-specific threshold levels (SSTLs). ACHCS approved these SSTLs in a letter dated October 21, 1997. MtBE is the principal constituent of concern. SSTLs for MtBE are exceeded in a limited area in the vicinity of the former underground storage tanks.

At present, we are preparing a *Corrective Action Plan* and will submit it to you next week. The owner is motivated to obtain site closure and we are prepared to begin remedial activities as soon as we obtain County approval of the CAP. Please call me if you have any questions in regard to this project.

Sincerely,

W.A. Craig, Inc.

Tim Cook, PE  
Principal Engineer

cc: Mr. Aziz Kandahari, Himalaya Trading Company



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***QUARTERLY MONITORING AND  
WELL INSTALLATION REPORT  
First Quarter 2003***

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

**PREPARED FOR:  
Mr. Aziz Kandahari  
Himalaya Trading Company  
2951 High Street  
Oakland, California 94619**

**SUBMITTED TO:  
Alameda County Health Care Services  
Hazardous Materials Division  
1131 Harbor Bay Parkway  
Alameda, California 94502**

**PREPARED BY:  
W.A. Craig, Inc.  
6940 Tremont Road  
Dixon, California 95620**

**Project No. 3936**

**July 23, 2003**

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JUL 25 2003  
Environmental Health**

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# PROFESSIONAL CERTIFICATION

## QUARTERLY MONITORING AND WELL INSTALLATION REPORT

*First Quarter 2003*

Express Gas & Mart  
2951 High Street  
Oakland, California 94619

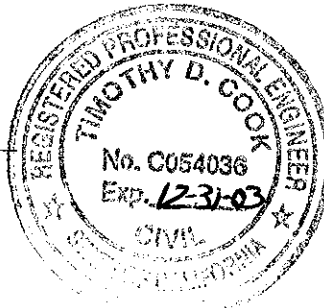
By: W.A. Craig, Inc.  
Project No. 3936  
July 23, 2003

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The conclusions presented in this document are professional opinions based solely upon the stated scope of work and the interpretation of available information as described herein. Such information may include third party data that either has not, or could not be independently verified. W.A. Craig, Inc. recognizes that the limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs or requirements of other potential users, including public agencies not directly involved. Any use or reuse of this document or the findings, conclusions, and recommendations presented herein is at the sole risk of said user.



Tim Cook, P.E.  
Principle Engineer



## INTRODUCTION

This report presents the results of the first quarter 2003 groundwater monitoring at Express Gas & Mart, located at 2951 High Street in Oakland, California (the "Site"). This report also describes the installation of four monitoring wells at the Site in late March and early April 2003. 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 is being conducted by W.A. Craig, Inc. (WAC) on behalf of Mr. Aziz Kandahari. The lead regulatory agency overseeing the investigation is Alameda County Health Care Services (ACHCS). The groundwater monitoring this quarter was conducted on April 4 and 23, 2003.

### *Site Location and Description*

Express Gas & Mart is a fuel station and convenience store located on the corner of High Street and Penniman Avenue. The Site location is shown on **Figure 1**. The neighborhood is mixed commercial and residential. The Site is in an upland area of southeastern Oakland and has a surface elevation of about 132 feet above mean sea level (amsl). The ground surface at the Site slopes southerly towards High Street. The regional topography generally slopes westerly toward San Francisco Bay. Site soils are primarily silts containing varying proportions of gravel and sand.

There are six groundwater monitoring wells at Express Gas & Mart (MW-1, MW-3, MW-5, MW-7, MW-8, and MW-9) and two offsite monitoring wells (MW-6 and MW-10). Two prior wells (MW-2 and MW-4) were destroyed during remediation activities in 2001. The well locations are shown on **Figure 2** and well construction information are summarized in **Table 1**. Confined groundwater occurs at a depth of approximately 21 feet below grade (fbg). Static water levels in the monitoring wells were about 5 to 7 fbg in April 2003. The direction of groundwater flow is south-southeast.

### *Background*

The Site has a history of subsurface contamination investigations that predate WAC's involvement starting in 2001. The following information was taken from a groundwater monitoring report dated November 14, 2000 by Aqua Science Engineers, Inc. (ASE). The report indicates that 2,550 pounds of ORC® slurry were injected into borings along the northern and eastern side of the former USTs in June 1997. The ORC® apparently increased the dissolved oxygen (DO) levels in the five pre-existing monitoring wells for the next year. Contaminant concentrations were also reduced in well MW-5 for about a year. ORC® socks were installed in wells MW-4 and MW-5 in August 1998 after the DO concentrations had declined again. The

ORC® socks were removed in September 2000 after proving ineffective at reducing petroleum hydrocarbon concentrations in the groundwater.

The ASE report indicates that a Tier 2 Risk-Based Corrective Action (RBCA) analysis was performed for the Site in August 1997. The RBCA was conducted to develop site-specific threshold levels (SSTLs) for petroleum hydrocarbon contaminants in soil and groundwater. The RBCA was reviewed and commented on by ACHCS. The comments were addressed in the final document by the responsible consultant, Mr. Christopher Palmer. According to ASE's report, the ACHCS 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. High concentrations of petroleum hydrocarbons were detected in all soil samples. WAC subsequently prepared a *Site Investigation Workplan* dated March 26, 2001 to conduct a soil and groundwater investigation around the gas pumps. ACHCS approved the workplan and requested that the USTs be removed along with contaminated soils.

Six soil borings were drilled and sampled by WAC in late April 2001. Sampling results from the borings confirmed that leakage from the gas pumps 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 with no obvious pitting, rust, or holes. However, soil samples from the base and the sides of the UST excavation contained high concentrations of hydrocarbon constituents. WAC excavated additional contaminated soil from the Site in a number of separate mobilizations 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 depicted on **Figure 2**.

An *Interim Site Investigation Workplan* for the installation of four new monitoring wells was prepared by WAC on February 12, 2002. The workplan was accepted by ACHCS in a letter dated May 15, 2002. This report describes the monitoring well installations along with the soil sampling results for those well borings. This report also documents the first quarterly groundwater monitoring since the September 2000 sampling discussed in the above-referenced ASE report.

## SCOPE OF WORK

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

- Prepared a *Site Specific Health and Safety Plan*;

- Obtained drilling permits from the Alameda County Public Works Agency for the installation of four groundwater monitoring wells (MW-7 through MW-10);
- Obtained an encroachment permit from the City of Oakland for monitoring well MW-10, which was installed in High Street;
- Prepared a Traffic Plan for the drilling of MW-10;
- Obtained utility clearances for the drilling from Underground Service Alert (USA);
- Installed four groundwater monitoring wells to a depth of 25 fbg;
- Performed geologic logging and collected soil samples from the monitoring well boreholes for chemical analyses;
- Surveyed the four new wells and four existing wells;
- Developed the four new wells;
- Purged and sampled groundwater from eight monitoring wells;
- Collected field measurements from the eight monitoring wells, including water level, DO, temperature, pH, and specific conductance;
- Analyzed soil and groundwater samples for the following compounds: TPH-g, methyl tert-butyl ether (MtBE), benzene, toluene, ethylbenzene, and xylenes (BTEX), and the fuel additives DIPE, EtBE, MtBE, tAME, tBA, methanol, ethanol, EDB, and 1,2-DCA (see notes on **Table 3** for chemical names), and;
- Prepared this report.

## FIELD PROCEDURES

### *Drilling and Soil Sampling*

Four new monitoring wells were installed for this investigation. The well locations are shown on **Figure 2**. One of the new wells (MW-7) was installed to replace MW-4 (destroyed during soil excavation in 2001) and the other three wells (MW-8, MW-9, and MW-10) were intended to better delineate the lateral extent of the plume. Preparations leading up to the drilling included notification of Underground Service Alert to mark subsurface utilities in the area, writing a site specific health and safety plan, and preparing a traffic plan. Permits were also obtained by WAC, including well permits from Alameda County Public Works Agency and an encroachment permit from the City of Oakland for well MW-10.

Vironex Environmental Services (C-57 License No. 705927) was contracted to drill and install the wells. A Registered Professional Engineer from WAC directed the drilling, sampling, and maintained boring logs. The monitoring well borings were drilled using a truck-mounted



Geoprobe 6600 drill rig equipped with 8.5-inch OD hollow-stem augers and 3-inch OD steel push rods (barrels). Clean augers, rods, and bits were used for each borehole. The soil cuttings were stored in labeled, DOT approved, 55-gallon drums. Soil samples were collected using a five-foot long split-spoon sampler fitted with disposable acrylic sampling liners. After the split-spoon was retrieved from a sampling run, the acrylic liner was extracted and the desired soil sample interval was cut from the liner. Five-gram aliquots of soil were then collected for chemical analysis using an EnCore™ sampler. The EnCore™ sampler was pushed into the soil core using a T-handle until the sampler was completely full. The coring body cap was then seated and locked in place to form an airtight seal. Five EnCores™ were used for each sample.

Soils were screened for possible volatile organic compounds (VOCs) using a portable photo-ionization detector (PID). PID readings were recorded on the boring logs. The soils were described and classified using the Unified Soil Classification System (USCS). The soil type, grain size, color, density, moisture content, odor, and other pertinent information were recorded on boring logs. The boring logs are included in **Appendix A**.

One soil sample from each boring was submitted under chain-of-custody control to McCampbell Analytical Inc. (MAI). MAI is a California DHS-certified laboratory located in Pacheco, California. All samples were labeled to indicate the project number, boring ID, sample number, sample depth, and date of collection. This information was also recorded on the chain-of-custody form provided by MAI. The samples were stored in a cooler with ice until delivery to MAI. Soil samples were analyzed for TPH-g (EPA Method 8015CM), MtBE and BTEX (EPA Method 8021B), and for fuel additives (EPA Method 8260B).

### ***Well Installation***

Monitoring wells MW-7 and MW-8 were installed on March 24, 2003. Well MW-9 was installed on March 25, 2003, and MW-10 was installed on April 4, 2003. The well borings were advanced to a maximum depth of 25 feet. The wells were constructed using clean, 2-inch diameter, flush-threaded, Schedule 40 PVC casing and 0.020-inch screen. All four wells were screened from 15 to 25 fbg. Well construction details are listed in **Table 1** and as-built schematics are included with the boring logs in **Appendix A**.

Graded sand (#2/12) was placed in the annular space between the well screen and the borehole wall from the bottom of the well to approximately 2 feet above the top of the screened interval. A 2-foot thick seal composed of bentonite chips was placed above the sand filter pack and hydrated prior to grouting the remainder of the annulus with Portland cement mixed with approximately 5 percent bentonite powder. PVC casings extend to within 6 inches of the ground surface and are capped with a watertight locking plug. Wellheads were secured inside 9-inch diameter, traffic-rated vaults set in concrete. The cover of each vault is labeled as a monitoring

well. The top-of-casing elevations and horizontal coordinates of the wells were surveyed by Virgil Chavez Land Surveying on April 15, 2003. The well survey data are included in **Appendix A**.

### ***Well Development***

Wells MW-7, MW-8, and MW-9 were developed on April 1, 2003 and MW-10 was developed on April 16, 2003. The Well Development Logs are included in **Appendix B**. Development was accomplished using a battery-operated submersible pump. At the end of development, 25 gallons of water (8 standing casing volumes) had been pumped from well MW-7, 23 gallons (7.4 standing casing volumes) from MW-8, 15 gallons (5 standing casing volumes) from MW-9, and 40 gallons (13 standing casing volumes) from MW-10. Well MW-10 had good recharge during development, but the others were slow to recharge. Turbidity measurements were made during the development process. The turbidity decreased in each well, ending at 176 nephelometric turbidity units (NTU) in MW-7, 175 NTU in MW-8, 217 NTU in MW-9, and 288 NTU in MW-10.

Development water was placed into 55-gallon, DOT-approved drums for temporary onsite storage. The drums were later emptied by a subcontractor and the water transported by tanker truck to Seaport Environmental, Inc., a licensed disposal facility in Redwood City, California.

### ***Water Level Measurements***

The water levels in the monitoring wells were obtained using an electronic well sounder and recorded on Monitoring Well Sampling Logs (**Appendix C**). Prior to the measurements, the wells were uncapped and the water levels allowed to equilibrate with atmospheric pressure for at least 30 minutes. Water level measurements were referenced to the top of the well casing. 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***

After obtaining the water level data, WAC staff purged and sampled the monitoring wells. At least three volumes of standing water were purged from each well before collecting groundwater samples. Wells were purged using a disposable polyethylene bailer. The turbidity, pH, temperature, and specific conductance (electrical conductivity) of the groundwater were intermittently monitored with portable instrumentation during purging. The DO concentration was measured in-situ immediately after sampling each well. The field water quality measurements were recorded on Monitoring Well Sampling Logs (**Appendix C**).

The well sounder 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 by a subcontractor and the water transported by tanker truck to Seaport Environmental, Inc., a licensed disposal facility in Redwood City, California.

### *Monitoring Well Sampling*

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 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 number, project number, and date. Labeled samples were stored in the field in ice chests cooled with ice until delivery to the laboratory under chain-of-custody control.

### *Laboratory Analyses*

The soil and groundwater samples were submitted under chain-of-custody control to MAI. Samples were analyzed for TPH-g by EPA Method 8015C modified, for MtBE and BTEX by EPA Method 8021B, and for the fuel additives DIPE, EtBE, MtBE, tAME, tBA, methanol, ethanol, EDB, and 1,2-DCA by EPA Method 8260B. The Method 8260B analysis for MtBE is generally considered to be more accurate than Method 8021B. Therefore, discussions in this report will use the MtBE results determined by Method 8260B.

## **DATA EVALUATION**

### *Groundwater Levels and Gradient*

Water level data for the monitoring wells are summarized in **Table 2**. The depth to water this quarter ranged from 5.07 feet below top of casing in MW-1 to 7.35 feet in MW-9. Groundwater elevations varied from a maximum of 127.45 feet amsl in well MW-6 to a minimum of 120.13 feet amsl in MW-10. A groundwater elevation contour map for the Site is presented on **Figure 3**. The elevation contours indicate that the direction of groundwater flow is southerly. The groundwater gradient was calculated using static water elevations in wells MW-1, MW-8, and MW-9. The resulting flow direction was indicated as S6°E with a gradient of 0.055 ft/ft.

### *Groundwater Analytical Results*

The laboratory test data for the monitoring wells is summarized in **Table 3** and the analytical reports are included in **Appendix D**. The laboratory analyses did not detect any contaminants in

the sample from upgradient well MW-6. MtBE was detected in all other wells at concentrations ranging from 26,000 µg/L in MW-7 to 85 µg/L in MW-9. MtBE concentrations were above the SSTL of 8,400 µg/L in MW-5 (19,000 µg/L) and MW-7 (26,000 µg/L). MW-5 and MW-7 are the closest wells to the former USTs. The inferred extent of the MtBE plume is shown on **Figure 4**. The data show that the MtBE plume extends offsite beneath High Street, beyond downgradient well MW-10.

BTEX constituents were only found in samples from MW-5 and MW-7. BTEX concentrations were generally well below the respective SSTLs, except for benzene in MW-5. The benzene concentration in MW-5 was 560 µg/L, as compared to the SSTL of 200 µg/L. TPH-g was detected in MW-5, MW-7 and MW-10 at concentrations ranging from 1,800 µg/L in MW-5 to 79 µg/L in MW-10. Gasoline additives other than MtBE were not detected in the groundwater samples, with two exceptions. The fuel oxygenate tAME was detected in MW-10 at a concentration of 58 µg/L and the additive 1,2-DCA was detected in MW-9 at 2 µg/L.

The DO concentration was measured after purging and sampling each well, except for MW-6, where the water level had been drawn down below the reach of the DO probe. **Table 4** contains a summary of the DO readings. DO concentrations ranged from 0.64 mg/L in MW-1 to 2.75 mg/L in well MW-10. This corresponds to an oxygen saturation range of 6.7% to 29%.

### ***Soil Boring Sample Results***

Soils encountered during drilling were predominantly gravelly to sandy silts with some interbedded silt and silty fine sand. Backfill in the former over-excavation area was encountered to a depth of 10 fbg in the MW-9 boring. Although MW-7 was also drilled within the over-excavation area (**Figure 2**), fill was not identified in that boring. Groundwater was positively identified only in the MW-8 and MW-10 borings, at depths of 16 fbg and 4 fbg, respectively. Elevated PID readings and hydrocarbon odors were noted in MW-7 and MW-8 between about 8 fbg and the bottom of each hole (25 fbg).

One soil sample from each boring was submitted for chemical analysis. The laboratory test results are summarized in **Table 5** and the analytical reports and chain-of-custody forms are included in **Appendix E**. The soil sample from MW-10 (4 fbg) was non-detect for all analytes, but traces of petroleum hydrocarbon compounds were detected in samples from the other borings. The highest TPH-g concentration was 92 mg/kg in the sample from MW-8 (7 fbg). The highest benzene concentration was 0.5 mg/kg in the sample from MW-7 (8 fbg). MtBE was detected only in the soil sample from MW-9 (10 fbg), at a concentration of 0.03 mg/kg. A composite was made from the soil samples from MW-7, MW-8, and MW-9 and tested for total lead. The analysis indicated a moderately elevated lead concentration of 41 mg/kg in the composite sample.

## CONCLUSIONS

The April 2003 water level measurements indicate the direction of groundwater flow is southerly with a gradient of 0.055 ft/ft.

The analytical data indicate that MtBE is the most widely distributed contaminant in groundwater. MtBE is present at all well locations except upgradient well MW-6. BTEX was non-detect in all wells other than MW-5 and MW-7. The dissolved MtBE plume has migrated downgradient beneath High Street. The lateral extent of the MtBE plume has not been delineated.

Wells MW-5 and MW-7, located on either side of the former USTs, have the highest concentrations of petroleum hydrocarbon constituents. Both of these wells exceeded the SSTL of 8,400 µg/L for MtBE. Well MW-5 also exceeded the 200 µg/L SSTL for benzene. Contaminant concentrations in MW-5 were significantly lower than when last sampled in September 2000. This suggests that natural attenuation is occurring.

## RECOMMENDATIONS

WAC recommends that corrective action be taken to bring about Site remediation and reduce the offsite migration of MtBE. WAC will therefore prepare a corrective action plan to submit for review by ACHCS as soon as possible.

WAC recommends continued quarterly groundwater monitoring. However, we recommend that well MW-3 be sampled on a semi-annual schedule rather than quarterly. MW-3 is in our opinion redundant, because MW-1 provides coverage for that part of the Site.

The next quarterly monitoring will occur in July 2003.

# TABLES

**TABLE 1**  
**Monitoring Well Construction Information**  
**2951 High Street, Oakland, California**

Well ID	Date Installed	Total Depth (ft)	Screened Interval (ft)	Water-Bearing Unit	Top of Casing Elevation (ft msl)	Northing (ft)	Easting (ft)
MW-1	2/95	25	N/A	N/A	131.64	2,112,552.4	6,070,038.2
MW-3	2/95	25	N/A	N/A	131.05	2,112,539.6	6,070,048.6
MW-5	12/9/96	30	5-30	N/A	131.99	2,112,582.0	6,070,083.6
MW-6	1/7/97	30	5-30	N/A	132.58	2,112,662.5	6,070,113.5
MW-7	3/24/03	25	15-25	gravelly sandy silt	130.93	2,112,533.2	6,070,106.3
MW-8	3/24/03	25	15-25	gravelly sandy silt	131.15	2,112,527.9	6,070,153.7
MW-9	3/25/03	25	15-25	silty gravelly sand	130.00	2,112,484.8	6,070,065.6
MW-10	4/4/03	25	15-25	sandy silt	127.19	2,112,393.3	6,069,984.7

**Notes:**

All wells are 2-inch diameter casing and screen.

ft msl, feet above mean sea level. N/A = data not available.

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

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

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

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

<b>Well ID</b>	<b>Date</b>	<b>TOC Elevation</b>	<b>DTW</b>	<b>Groundwater Elevation</b>
MW-1	4/4/03	131.64	5.07	126.57
MW-3	4/4/03	131.05	5.86	125.19
MW-5	4/4/03	131.99	6.94	125.05
MW-6	4/4/03	132.58	5.13	127.45
MW-7	4/4/03	130.93	7.06	123.87
MW-8	4/4/03	131.15	6.60	124.55
MW-9	4/4/03	130.00	7.35	122.65
MW-10	4/23/03	127.19	7.06	120.13

**Notes:**

Elevations are in feet above mean sea level.

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



**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-1	2/23/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	5/26/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	8/23/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	270	<5	<5	<5	<50	<5,000	<500	<5	<5
MW-3	2/23/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	5/26/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	8/23/95	<50	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT
	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	1,600	<25	<25	<25	<250	<25,000	<2,500	<25	<25
MW-5	12/13/96	3,600	180	350	81	510	430	NT	NT	NT	NT	NT	NT	NT	NT
	3/27/97	120,000	28,000	16,000	2,600	10,000	64,000	NT	NT	NT	NT	NT	NT	NT	NT
	6/27/97	6,300	10,000	2,400	290	4,500	43,000	NT	NT	NT	NT	NT	NT	NT	NT
	9/22/97	<50,000	7.9	3.3	0.6	3.3	30,000	NT	NT	NT	NT	NT	NT	NT	NT
	12/6/97	<5,000	33	12	<5	7.3	33,000	NT	NT	NT	NT	NT	NT	NT	NT
	3/23/98	29,000	150	160	130	320	34,000	NT	NT	NT	NT	NT	NT	NT	NT
	6/10/98	53,000	7,000	2,400	540	3,400	67,000	NT	NT	NT	NT	NT	NT	NT	NT
	7/23/98	36,000	1,000	270	<120	740	51,000	NT	NT	NT	NT	NT	NT	NT	NT
	9/16/98	56,000	3,400	1,300	430	1,800	84,000	NT	NT	NT	NT	NT	NT	NT	NT
	11/23/98	63,000	5,700	2,900	500	2,200	87,000	NT	NT	NT	NT	NT	NT	NT	NT
	3/5/99	42,000	<250	<250	<250	<250	38,000	NT	NT	NT	NT	NT	NT	NT	NT
	6/17/99	37,000	510	85	5.6	89	61,000	NT	NT	NT	NT	NT	NT	NT	NT
	9/15/99	54,000	8,500	1,800	420	2,400	55,000	NT	NT	NT	NT	NT	NT	NT	NT
	12/9/99	34,000	1,600	230	130	570	33,000	NT	NT	NT	NT	NT	NT	NT	NT
	3/6/00	21,000	7,800	870	440	2,100	30,000	NT	NT	NT	NT	NT	NT	NT	NT
	6/7/00	<50,000	11,000	890	570	3,000	68,000	NT	NT	NT	NT	NT	NT	NT	NT
9/18/00	40,000	4,900	<250	<250	1,700	46,000	NT	NT	NT	NT	NT	NT	NT	NT	
4/4/03	1,800	560	<5.0	<5.0	30	19,000	<330	<330	<330	<3,300	<330,000	<33,000	<330	<330	

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

Well ID	Date	TPH-g	benzene	toluene	ethyl-benzene	xylene	MtBE	DIPE	EtBE	tAME	tBA	methanol	ethanol	EDB	DCA
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	
MW-7	4/4/03	1,400	54	27	15	180	<b>26,000</b>	<500	<500	<500	<5,000	<500,000	<50,000	<500	<500
MW-8	4/4/03	<50	<0.5	<0.5	<0.5	<0.5	230	<5	<5	<5	<50	<5,000	<500	<5	<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
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
SSTL		NE	<b>200</b>	<b>270</b>	<b>180</b>	<b>470</b>	<b>8,400</b>	NE	NE	NE	NE	NE	NE	NE	NE

Notes: Concentrations are micrograms per liter (ug/L). **Bold** concentrations exceed the SSTL. NT, not tested.

SSTLs are site-specific target levels developed for the site by Aqua Science Engineers, Inc. in 1997.

NE, SSTL not established for this compound.

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	tAME	tert-Amyl Methyl Ether
MtBE	Methyl tert-Butyl Ether	tBA	tert-Butanol
DIPE	Di-isopropyl Ether	EDB	Ethylene Dibromide
EtBE	Ethyl tert-Butyl Ether	DCA	1,2-Dichloroethane

**TABLE 4**  
**Field Measurements of Dissolved Oxygen and Temperature**  
**2951 High Street, Oakland, California**

Well ID	Date	DO (mg/L)	Temperature (Celsius)	% Oxygen Saturation
MW-1	4/4/03	0.64	18.5	6.7%
MW-3	4/4/03	0.78	18.8	8.3%
MW-5	4/4/03	0.70	19.2	7.5%
MW-6	4/4/03	N/A	N/A	N/A
MW-7	4/4/03	0.97	20.1	10.6%
MW-8	4/4/03	1.50	20.8	16.6%
MW-9	4/4/03	1.30	20.4	14.2%
MW-10	4/23/03	2.75	19.1	29.3%

**Notes:**

DO, Dissolved oxygen concentration in milligrams per liter.

Formula for calculating % saturation =  $C/(-0.1883*T+12.967)$ , where

C is the DO concentration and T is the temperature.

N/A, No data available.

**TABLE 5**  
**Analytical Results for Soil Boring Samples**  
**2951 High Street, Oakland, California**

Boring	Sample Depth	Sample Date	TPH-g	Benzene	Toluene	Ethyl-benzene	Xylenes	MtBE	Lead*
MW-7	8	3/24/03	48	0.52	0.26	0.47	0.34	<0.470	41
MW-8	7	3/24/03	92	<0.09	0.28	<0.09	0.11	<0.460	
MW-9	10	3/25/03	3.4	0.014	0.047	0.037	0.13	0.031	
MW-10	4	4/4/03	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NT

**Notes:**

All results are milligrams per kilogram (mg/kg). Sample depths listed in feet below grade.

\* Lead analysis performed on a composite sample composed of equal parts of soil from MW-7, MW-8, and MW-9.

NT, analyte not tested. TPH-g = total petroleum hydrocarbons as gasoline. MtBE = methyl tert-butyl ether.

**FIGURES**



3-D TopoQuads Copyright © 1999 DeLorme 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  
Dixon, California 95620

## LOCATION MAP

Express Gas & Mart  
2951 High Street, Oakland, California

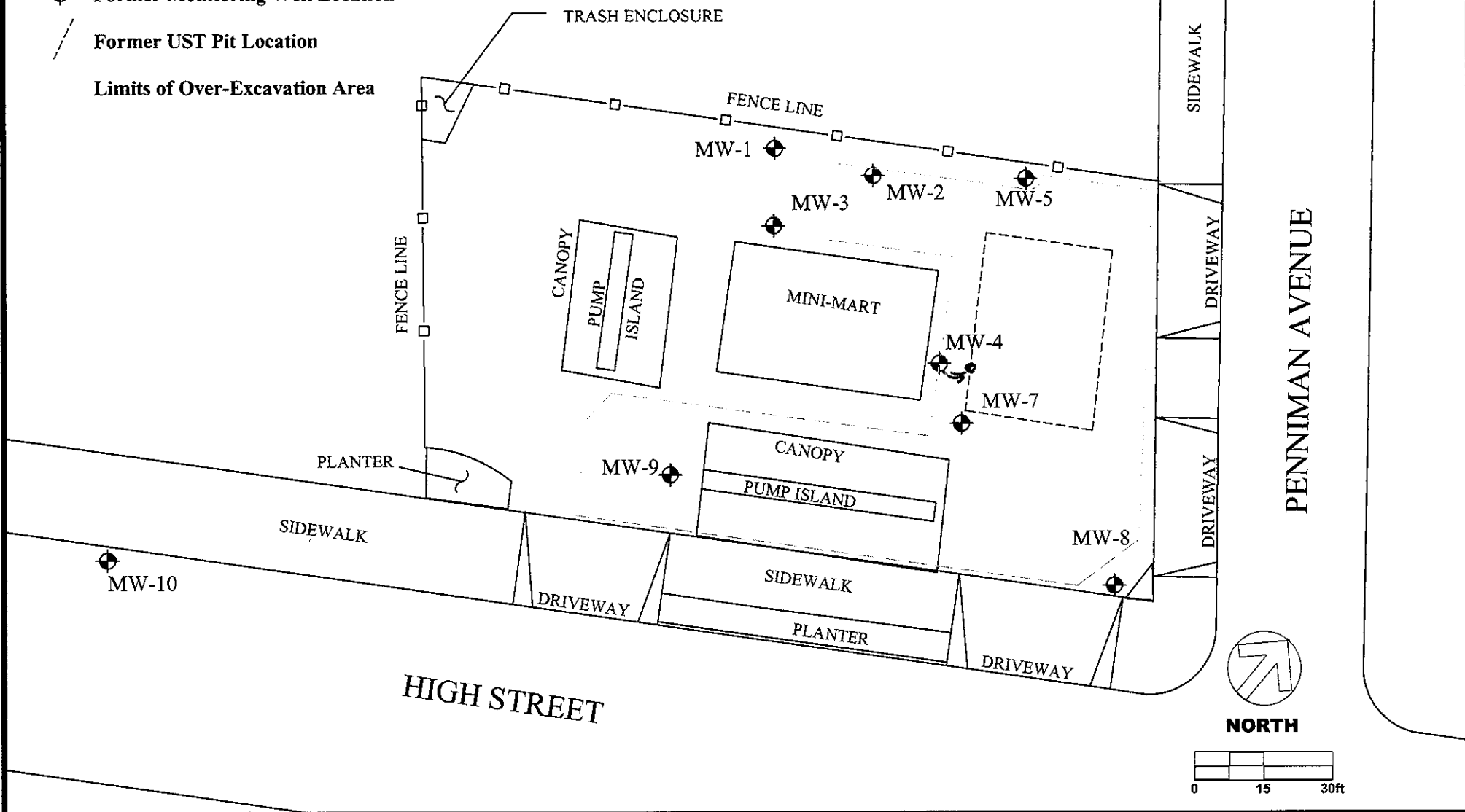
## FIGURE

# 1

Job No. 3936

**LEGEND**

- ⊕ Monitoring Well Location
- ⊕ Former Monitoring Well Location
- Former UST Pit Location
- Limits of Over-Excavation Area



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

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

**Site Plan**  
 Express Gas & Mart  
 2951 High Street  
 Oakland, California

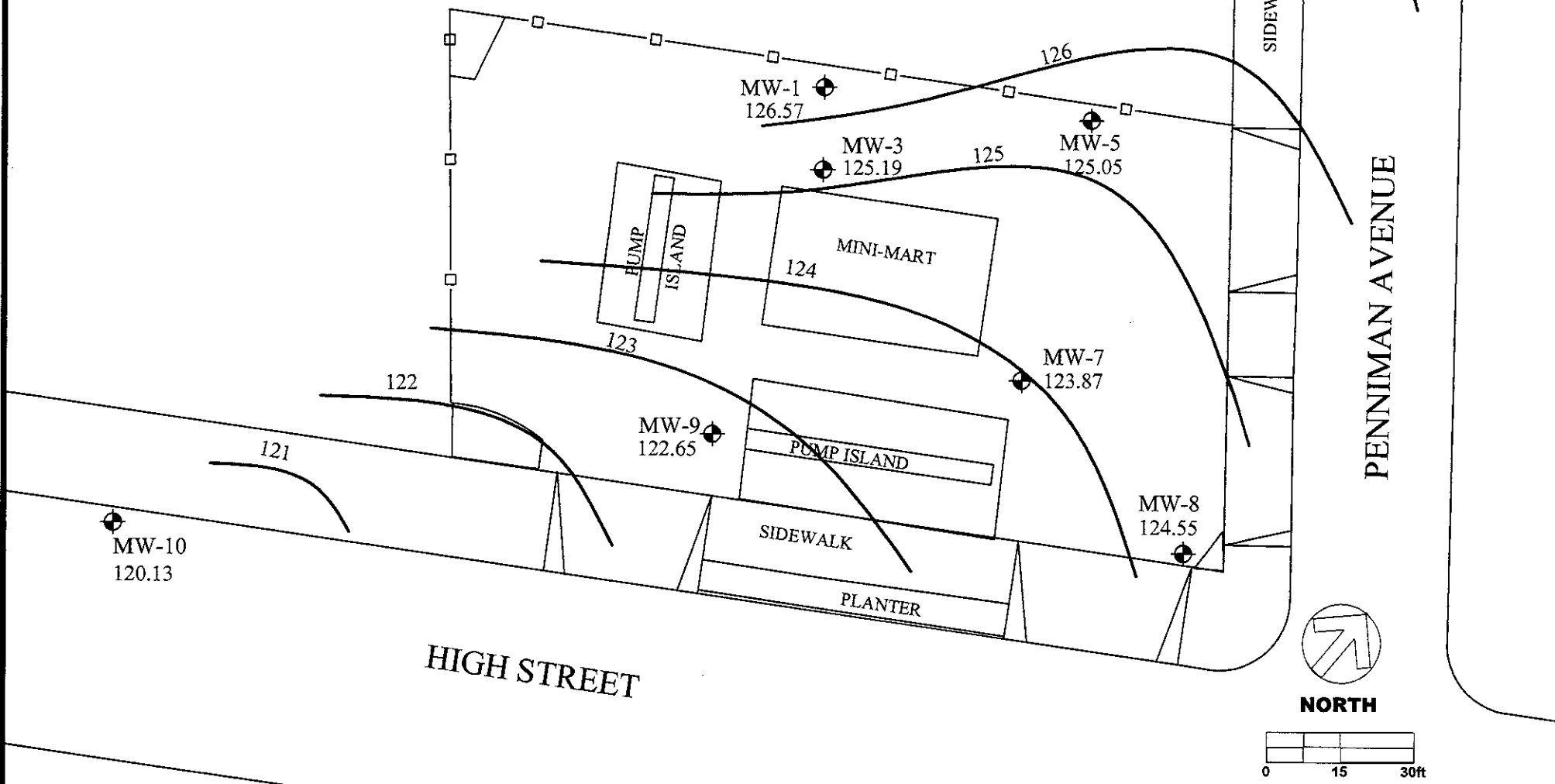
Project #: 3936	Figure:
Date: 4/4/03	2
Scale: 1"=30'	

**LEGEND**

⊕ Monitoring Well Location

126.57 Groundwater Elevation (ft above msl)

~ Groundwater Elevation Contour



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

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

**Groundwater Elevations**  
 Express Gas & Mart  
 2951 High Street  
 Oakland, California

Project #: 3936	Figure: <b>3</b>
Date: 4/4/03	
Scale: 1"=30'	

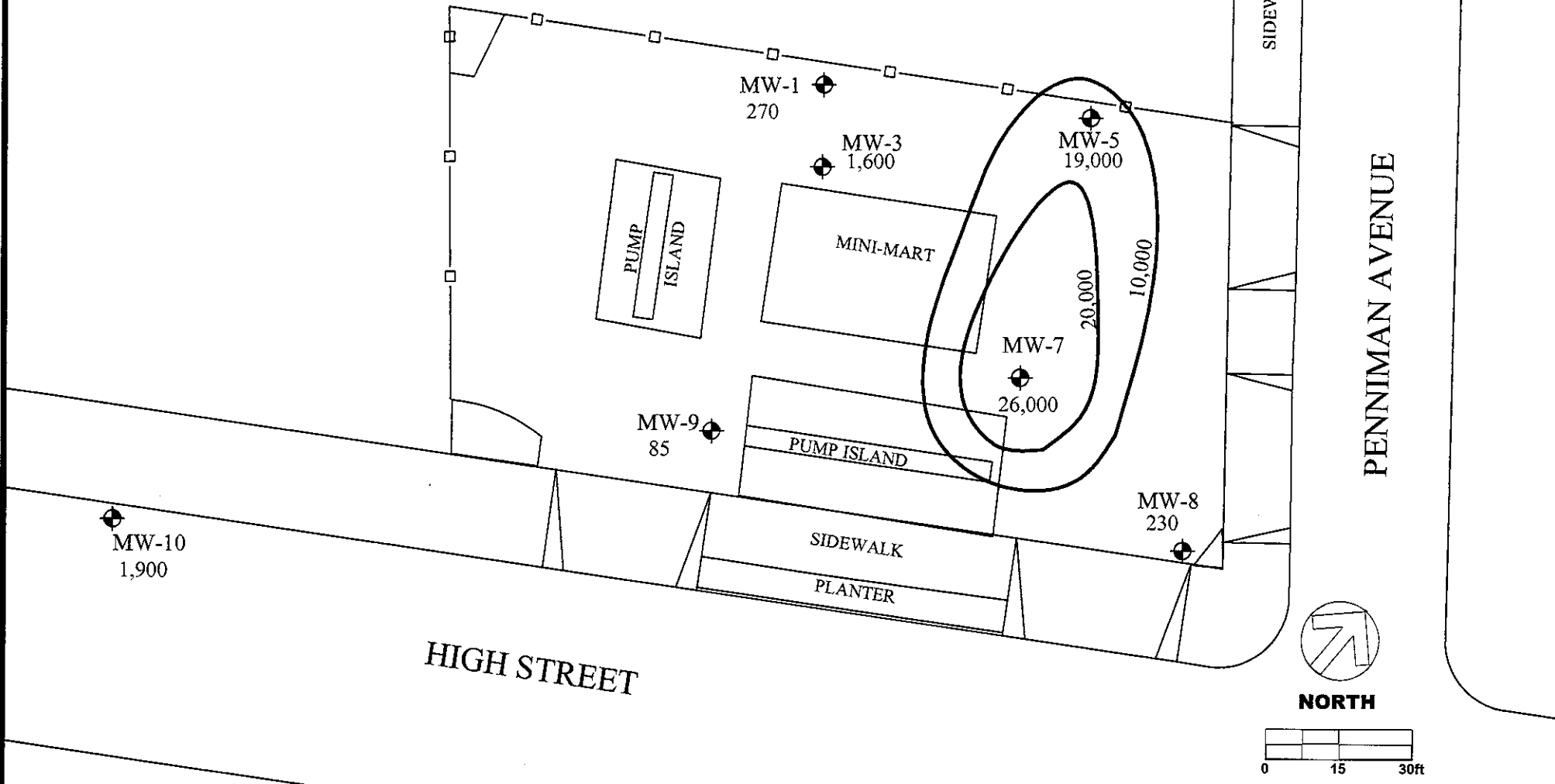


**LEGEND**

⊕ Monitoring Well Location

1.600 MtBE Concentration (ug/L)

~ MtBE Isoconcentration Contour



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

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

**MtBE Concentrations**

Express Gas & Mart  
2951 High Street  
Oakland, California

Project #: 3936

Date: 7/18/03

Scale: 1"=30'

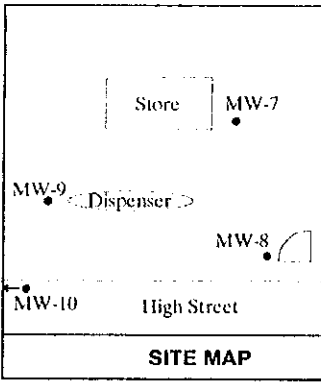
Figure:


**4**

**APPENDIX A**  
**BORING LOGS, WELL AS-BUILT SCHEMATICS, AND WELL**  
**SURVEY DATA**

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 <b>W.A. Craig, Inc.</b> Environmental Contracting and Consulting		6940 Tremont Road Dixon, California 95620-9603 Lic. #455752		(707) 693-2929 Fax (707) 693-2922
		<b>PROJECT:</b> High Street	<b>PROJECT #:</b> 3936	<b>BORING #:</b> MW-7
<b>DRILLING CONTRACTOR:</b> Vironex		<b>START:</b> 11:30	<b>FINISH:</b>	<b>DATE:</b> 3/24/03
<b>DRILLING METHOD:</b> Geoprobe 6600		<b>TOTAL DEPTH:</b> 25'		<b>DEPTH TO WATER:</b>
<b>SAMPLER:</b> 5 ft Split Spoon		<b>SCREEN INT:</b> 15' - 25'		<b>CASING:</b> 2" PVC
<b>HAMMER WT:</b> N/A		<b>DROP:</b>	<b>FIELD GEOLOGIST:</b> T. Cook	

DEPTH (ft)	SAMPLE #	INTERVAL	BLOWS/6"	PID (ppm)	WELL CONSTRUCTION	USCS SYMBOL & LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION SOIL TYPE, GRAIN SIZE, COLOR, DENSITY, MOISTURE
5					Well Box	*	No recovery, hand augered 0'-5'
5			8.4			GM	Gravelly sandy silt, reddish brown, lean, hard
10	MW-7 @ 8'					CL	Silty sandy clay, lean, moist, dark brown, moderate HC odor
10			0.8				Silt, low moisture, hard, no HC odor
15			40.5			ML	Silt, dark gray, moderate HC odor
15			117				Silt, reddish brown, moist, interbedded with gravelly sandy silt, hard, gravel to 1/8" diameter, medium HC odor
20			300			GM	Gravelly sandy silt, reddish brown, dry, strong HC odor, gravel to 1/4" diameter
20							As above, very hard, silty, moist
25			17				As above
25							As above
30							
30							General Comment: No obvious wet zones in this boring, no recycled concrete encountered in this boring. Soils appear to be native alluvial fan sediments. Low to medium HC odor in places. No gross contamination observed.
35							
35							
40							
40							

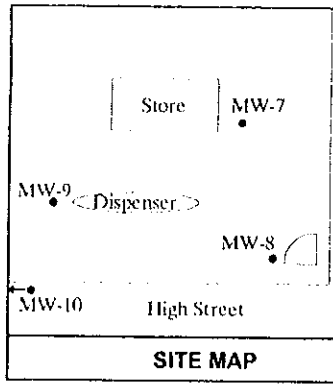
NOTE: THE LINE SEPARATING STRATA REPRESENT APPROXIMATE BOUNDARIES ONLY. THE ACTUAL TRANSITION MAY BE GRADUAL. NO WARRANTY IS PROVIDED AS TO THE CONTINUITY OF THE SOIL STRATA BETWEEN BORINGS. LOGS REPRESENT THE SOIL SECTION OBSERVED AT THE BORING LOCATION ON THE DATE OF DRILLING ONLY.



# W.A. Craig, Inc.

Environmental Contracting and Consulting

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 Dixon, California 95620-9603 (707) 693-2929  
 Lic. #455752 Fax (707) 693-2922

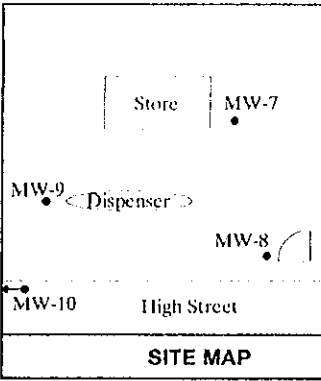



<b>PROJECT:</b> High Street		<b>PROJECT #:</b> 3936	<b>BORING #:</b> MW-8
<b>DRILLING CONTRACTOR:</b> Vironex		<b>START:</b> 8:15 <b>FINISH:</b> 11:30	<b>DATE:</b> 3/24/03
<b>DRILLING METHOD:</b> Geoprobe 6600		<b>TOTAL DEPTH:</b> 25'	<b>DEPTH TO WATER:</b> 16'
<b>SAMPLER:</b> 5 ft Split Spoon		<b>SCREEN INT:</b> 15' - 25'	<b>CASING:</b> 2" PVC
<b>HAMMER WT:</b> N/A <b>DROP:</b>		<b>FIELD GEOLOGIST:</b> T. Cook	

DEPTH (ft)	SAMPLE #	INTERVAL	BLOWS/6"	PID (ppm)	WELL CONSTRUCTION	USCS SYMBOL & LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION SOIL TYPE, GRAIN SIZE, COLOR, DENSITY, MOISTURE
5	MW-8 @ 7'			3.2		ML	Silt, moist, red oxide, no HC odor
10			80	160		GM	Gravelly sandy silt, brown, moist, reddish oxide stain, strong HC odor, gravel to 1/2" diameter, greenish staining from HC contamination
15			80	300		*	No recovery, core stuck in barrel, very lean clay at head of core barrel
20			10	180		GM	Gravelly sandy silt, very hard, reddish oxide with gravel to 1/2", dry, with very wet sandy silt, dark gray, strong HC odor
25							Gravelly sandy silt, hard, reddish oxide, gravel to 1" diameter
30						General Comment: Red gravelly clay was very hard, dry and interbedded with very wet sandy silt with an HC odor.	
35							
40							

CentralProjectFiles\3936 high street\reports\borings logs\mw-8.dwg

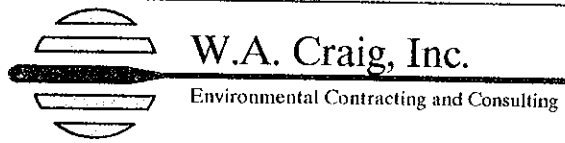
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 <b>W.A. Craig, Inc.</b> Environmental Contracting and Consulting		6940 Tremont Road Dixon, California 95620-9603 Lic. #455752		(707) 693-2929 Fax (707) 693-2922
		<b>PROJECT:</b> High Street	<b>PROJECT #:</b> 3936	<b>BORING #:</b> MW-9
<b>DRILLING CONTRACTOR:</b> Vironex		<b>START:</b> 8:10	<b>FINISH:</b>	<b>DATE:</b> 3/25/03
<b>DRILLING METHOD:</b> Geoprobe 6600		<b>TOTAL DEPTH:</b> 25'		<b>DEPTH TO WATER:</b>
<b>SAMPLER:</b> 5 ft Split Spoon		<b>SCREEN INT:</b> 15' - 25'		<b>CASING:</b> 2" PVC
<b>HAMMER WT:</b> N/A		<b>DROP:</b>		<b>FIELD GEOLOGIST:</b> T. Cook

DEPTH (ft)	SAMPLE #	INTERVAL	BLOWS/6"	PID (ppm)	WELL CONSTRUCTION	USCS SYMBOL & LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION
							SOIL TYPE, GRAIN SIZE, COLOR, DENSITY, MOISTURE
5					Well Box	Fill	Recycled concrete, dry, granular, gray
5				0.8		Fill	As above but more moist
10	MW-9 @ 10'			0		GM	Same as above Gravelly sandy silt, brownish gray, with medium to very fine sand, <10% gravel up to 1/8", red oxide, hard, staining, no HC odor, native soil
15				0		GM	Gravelly sandy silt, as above, red oxide color, hard, moist, no HC odor
15				0		SM	As above, with gravel to 1/4" diameter
20				0		SM	Silty gravelly sand, red oxide, no HC odor, moist, not wet
20				0		GM	Gravelly sandy silt, fine to coarse sand, gravel to 1/8" diameter, red oxide, hard, slightly more moist than above, no HC odor
25				0		SM	Silty gravelly sand, medium to coarse sand, gravel to 1/2" diameter, red oxide, moist not wet, crumbles easily
25				0	Total Depth 25'		
30							General Comment: No wet zone, backfill material to 10', no HC odor throughout. Two sandy zones observed but not saturated
35							
40							

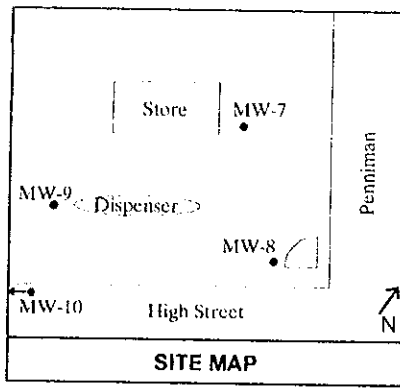
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**W.A. Craig, Inc.**

Environmental Contracting and Consulting

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



<b>PROJECT:</b> High Street	<b>PROJECT #:</b> 3936	<b>BORING #:</b> MW-10
<b>DRILLING CONTRACTOR:</b> Vironex	<b>START:</b> 9:05 <b>FINISH:</b>	<b>DATE:</b> 4/4/03
<b>DRILLING METHOD:</b> Geoprobe 6600	<b>TOTAL DEPTH:</b> 25'	<b>DEPTH TO WATER:</b> 4'
<b>SAMPLER:</b> 5 ft Split Spoon	<b>SCREEN INT:</b>	<b>CASING:</b> 2" PVC
<b>HAMMER WT:</b> N/A <b>DROP:</b>	<b>FIELD GEOLOGIST:</b> T. Cook	

DEPTH (ft)	SAMPLE #	INTERVAL	BLOWS/6"	PID (ppm)	WELL CONSTRUCTION	USCS SYMBOL & LITHOLOGIC LOG	LITHOLOGIC DESCRIPTION SOIL TYPE, GRAIN SIZE, COLOR, DENSITY, MOISTURE
0 - 5	MW-10 @ 4'			0	Well Box	GM	Asphalt and asphalt base material
5 - 10				0		CL	Gravelly sandy silt, gravel ~5% up to 1/4", fine to medium sand, reddish-brown, moist, no odor As above, encountered groundwater at 4', wet
10 - 15				0		GM	Sandy silty clay, with angular gravel to 1/4", fine to medium sand, reddish-brown, wet, no odor
15 - 20				0		ML	Silty sandy gravel, angular gravel to 1/2", medium to coarse sand, dark brown with reddish-oxide stain, wet, no odor
20 - 25				0		SM	Sandy silt, dark brown, fine sand, no odor, wet
25 - 30				0		SM	Grades to a soft silty fine sand at 14', wet, no odor
30 - 35				0		ML	Sandy silt, medium to coarse sand, dark brown, stiff, wet
35 - 40				0		ML	Sandy silt, with gravel to 1/4", reddish brown, stiff, wet, no odor
40 - 45				0		SM	Silty fine sand, soft, brown, wet
45 - 50				0		ML	Sandy silt, with gravel to 1/4", stiff, reddish-oxide stain, with gray mottling, wet, no odor
					Total Depth 25'		

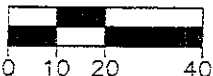
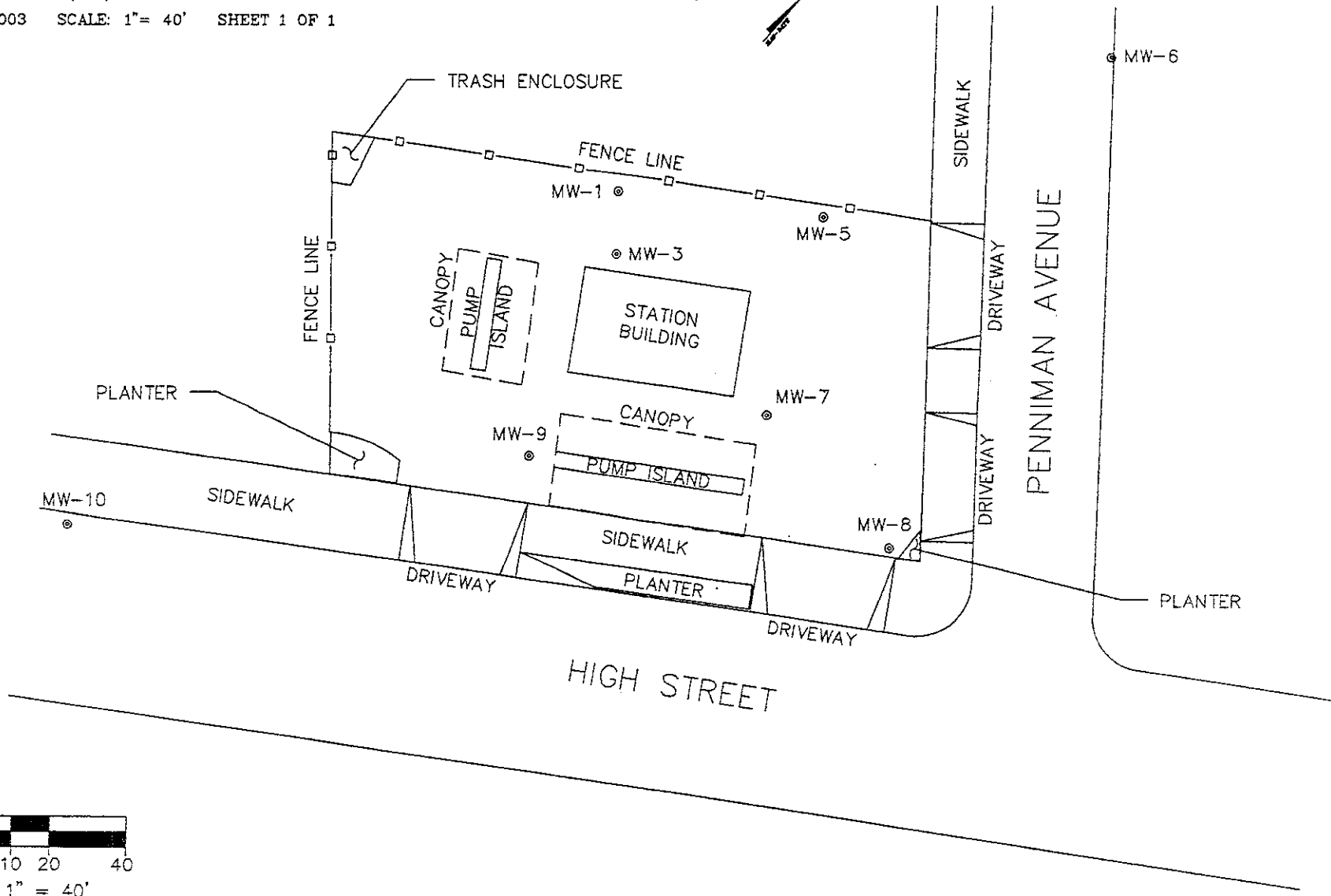
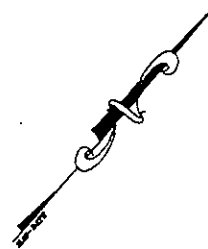
NOTE: THE LINE SEPARATING STRATA REPRESENT APPROXIMATE BOUNDARIES ONLY. THE ACTUAL TRANSITION MAY BE GRADUAL. NO WARRANTY IS PROVIDED AS TO THE CONTINUITY OF THE SOIL STRATA BETWEEN BORINGS. LOGS REPRESENT THE SOIL SECTION OBSERVED AT THE BORING LOCATION ON THE DATE OF DRILLING ONLY.

SITE MAP  
2951 HIGH STREET  
OAKLAND, CALIFORNIA

VIRGIL CHAVEZ LAND SURVEYING

312 GEORGIA STREET, SUITE 225  
VALLEJO, CALIFORNIA  
(707) 553-2476

APRIL 2003 SCALE: 1" = 40' SHEET 1 OF 1



SCALE: 1" = 40'

PROJECT NUMBER: 2232-02

April 22, 2003  
Project No.: 2232-02

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

Subject: Monitoring Well Survey  
2951 High Street  
Oakland, CA

Dear Tim:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was completed on April 15, 2003. The benchmark for this survey was a cut square in southeasterly return of southerly corner at intersection of High Street and MacArthur Boulevard. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).  
Benchmark Elevation = 177.397 feet (NGVD 29).

<u>Latitude</u>	<u>Longitude</u>	<u>Northing</u>	<u>Easting</u>	<u>Elev.</u>	<u>Desc.</u>
37.7844105	-122.2013199	2112552.39	6070038.16	131.96	RIM MW-1
				131.64	TOC MW-1
37.7843759	-122.2012831	2112539.60	6070048.55	131.50	RIM MW-3
				131.05	TOC MW-3
37.7844942	-122.2011645	2112582.04	6070083.59	132.33	RIM MW-5
				131.99	TOC MW-5
37.7847167	-122.2010661	2112662.53	6070113.49	132.85	RIM MW-6
				132.58	TOC MW-6
37.7843612	-122.2010829	2112533.18	6070106.31	131.26	RIM MW-7
				130.93	TOC MW-7
37.7843490	-122.2009185	2112527.86	6070153.72	131.42	RIM MW-8
				131.15	TOC MW-8
37.7842262	-122.2012208	2112484.75	6070065.55	130.33	RIM MW-9
				130.00	TOC MW-9
37.7839710	-122.2014948	2112393.29	6069984.72	127.40	RIM MW-10
				127.19	TOC MW-10

Sincerely,

Virgil D. Chavez, PLS 6323



**APPENDIX B**  
**MONITORING WELL DEVELOPMENT LOGS**

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Development  
MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High 5+

JOB #: 3936

DATE: 4/1/03

SAMPLER'S INITIALS: CM

WELL ID: MW-8

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): ~6.5

WATER COLUMN Ht (ft): 18.5

STANDING WATER VOLUME (gal): 3.1

3 VOLUMES (gal): \_\_\_\_\_

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: \_\_\_\_\_

SAMPLING METHOD: \_\_\_\_\_

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
9:00	5				767.4		NoS
	10				638.3		slow Recharge
	15				694.8		slight sheen / slow Recharge
	20				598.4		" " / " "
	23				175.2		" " / " "
= Time that Samples were collected.						Depth to Water at Sampling =	

WELL ID: MW-7

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): ~7.0

WATER COLUMN Ht (ft): 18

STANDING WATER VOLUME (gal): 3.1

3 VOLUMES (gal): \_\_\_\_\_

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: \_\_\_\_\_

SAMPLING METHOD: \_\_\_\_\_

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
9:44	5				600		
	10				817.3		some sheen / slow Recharge
	15				701.8		" " / extremely slow Recharge
	20				298.2		
	25				176.5		
= Time that Samples were collected.						Depth to Water at Sampling =	

# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 3936

DATE: 4/1/03

SAMPLER'S INITIALS: CM

WELL ID: MW-9

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25

DEPTH TO WATER (ft): ~ 7.3

WATER COLUMN Ht (ft): 17.7

STANDING WATER VOLUME (gal): 3

3 VOLUMES (gal): \_\_\_\_\_

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: \_\_\_\_\_

SAMPLING METHOD: \_\_\_\_\_

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
10:30	5				0.1		
	10				518.3		slight leak / slow Recharge
	15				216.9		
= Time that Samples were collected.							Depth to Water at Sampling =

WELL ID: MW-

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

WELL DEPTH (ft): \_\_\_\_\_

DEPTH TO WATER (ft): \_\_\_\_\_

WATER COLUMN Ht (ft): \_\_\_\_\_

STANDING WATER VOLUME (gal): \_\_\_\_\_

3 VOLUMES (gal): \_\_\_\_\_

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: \_\_\_\_\_

SAMPLING METHOD: \_\_\_\_\_

### PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
= Time that Samples were collected.							Depth to Water at Sampling =

# WELL DEVELOPMENT AND SAMPLING LOG

Project Name High Street Job No. 3936 Date 4/16/03 Weather Cloudy/Windy  
 Sampler Clay

<b>Well Data</b>		<b>Well Number</b> <u>LEP MW-10</u>	
Total Depth of Well <u>25</u>	Casing Elevation _____	Depth to Water <u>7.0</u>	Groundwater Elevation _____
Method of Purging Well _____	Method of Sampling Well _____		
Casing Volume <u>3.1</u>	Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft		
Depth to Water Prior to Sampling _____			

**Field Parameters**

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
Begin purging well						
	5	18.9	1357	7.22	67	NOS
	10	17.1	1291	7.15	892.4	"
	15	17.1	1169	7.10	876.3	" good recharge
	20	17.1	939	6.99	855.1	slight sheen / no odor / good recharge
	25	17.2	939	6.98	654.2	NOS / good recharge
	30	18.9	758	6.73	633.5	"
	35	17.1	742	6.83	416.2	"
	40	19.0	745	6.76	288.5	"

Comments:

<b>Well Data</b>		<b>Well Number</b> _____	
Total Depth of Well _____	Casing Elevation _____	Depth to Water _____	Groundwater Elevation _____
Method of Purging Well _____		Method of Sampling Well _____	
Casing Volume _____	Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft		
Depth to Water Prior to Sampling _____			

**Field Parameters**

Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
Begin purging well						

Comments:

**APPENDIX C**  
**MONITORING WELL SAMPLING LOGS**

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# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 2936

DATE: 4/4/03

SAMPLER'S INITIALS: TDC

WELL ID: MW-1

WELL DIAMETER (in): 2

WELL DEPTH (ft): 24.50

DEPTH TO WATER (ft): 5.07

WATER COLUMN Ht (ft): 19.8

STANDING WATER VOLUME (gal): 3.3

3 VOLUMES (gal): 10

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

SAMPLING METHOD: bailer

### PURGE MEASUREMENTS

DO 0.61 @ 18.5°C

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
11:05	1	18.2	6.54	535			
11:10	5	18.1	6.47	594			
11:15	8	18.0	6.58	570			
= Time that Samples were collected.							Depth to Water at Sampling =

WELL ID: MW-3

WELL DIAMETER (in): 2

WELL DEPTH (ft): 24.75

DEPTH TO WATER (ft): 5.86

WATER COLUMN Ht (ft): 19.1

STANDING WATER VOLUME (gal): 3.2

3 VOLUMES (gal): 9.6

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: bailer

SAMPLING METHOD: bailer

### PURGE MEASUREMENTS

DO 0.78 @ 18.8°

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
12:25	1	16.9	6.52	616			
12:30	2	16.7	6.49	603			
12:39	6	17.4	6.43	638			
12:45	10	17.6	6.43	643			
= Time that Samples were collected.							Depth to Water at Sampling =

# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 3936

DATE: 4/1/03

SAMPLER'S INITIALS: TDC

WELL ID: MW- 05 WELL DIAMETER (in): 2

WELL DEPTH (ft): 27.05 DEPTH TO WATER (ft): 6.91 WATER COLUMN Ht (ft): 20.1

STANDING WATER VOLUME (gal): 3.4 3 VOLUMES (gal): 10.2

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: bailed SAMPLING METHOD: bailed

PURGE MEASUREMENTS Inwell DO 0.70 @ 19.2°C

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
11:35	1	18.1	6.71	620			
11:40	2	18.2	6.76	628			
11:52	6	18.7	6.85	622			
11:55	8	18.7	6.84	629	6.24	4.83	switched plw/sc
12:00	10	18.8	6.78	632	6.27		
12:05	11	18.7	6.86	632			
= Time that Samples were collected.						Depth to Water at Sampling =	

WELL ID: MW- 56 WELL DIAMETER (in): 2

WELL DEPTH (ft): 28.20 DEPTH TO WATER (ft): 5.13 WATER COLUMN Ht (ft): 23.1

STANDING WATER VOLUME (gal): 3.9 3 VOLUMES (gal): 11.7

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: bailed SAMPLING METHOD: bailed

PURGE MEASUREMENTS DO probe will NOT reach WATER TABLE

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
3:10	2	19.2	7.63	2020			Strawg HC code
3:15	4	19.3	7.44	2010			
3:25	7	19.3	7.87	2010			
3:35	10	19.4	8.09	2010			
= Time that Samples were collected.						Depth to Water at Sampling =	

# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 3736

DATE: 4/1/03

SAMPLER'S INITIALS: TDC

WELL ID: MW- 7

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25.03

DEPTH TO WATER (ft): 7.06

WATER COLUMN Ht (ft): 18.0

STANDING WATER VOLUME (gal): 3.0

3 VOLUMES (gal): 9.0

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: bailey

SAMPLING METHOD: bailey

### PURGE MEASUREMENTS

DO 0.97 @ 20.1°

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
3:55	1	18.9	6.72	1324			
4:00	2	19.1	6.72	1355			Slower to recover than other wells
4:05	6	18.9	6.76	1478			
4:10	8	19.1	6.77	1479			
4:20	9.5	18.9	6.77	1443			
= Time that Samples were collected.						Depth to Water at Sampling =	

WELL ID: MW- 8

WELL DIAMETER (in): 2

WELL DEPTH (ft): 25.36

DEPTH TO WATER (ft): 6.60

WATER COLUMN Ht (ft): 18.7

STANDING WATER VOLUME (gal): 3.2

3 VOLUMES (gal): 9.6

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: bailey

SAMPLING METHOD: bailey

### PURGE MEASUREMENTS

DO 1.50 @ 20.8°

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
2:25	1	20.2	6.96	656			
2:27	2	20.3	6.97	715			
2:35	5	20.3	6.98	715			
2:45	10	20.9	6.94	744			
= Time that Samples were collected.						Depth to Water at Sampling =	



# MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: High St

JOB #: 3736

DATE: 4/4/03

SAMPLER'S INITIALS: TDX

WELL ID: MW- 9 WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): 25.35 DEPTH TO WATER (ft): 7.35 WATER COLUMN Ht (ft): 18.0

STANDING WATER VOLUME (gal): 3.1 3 VOLUMES (gal): 9.3

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: baire SAMPLING METHOD: baire

PURGE MEASUREMENTS DO 1.30 @ 20-4"

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
1:45	1	20.3	6.76	1219			
1:48	2	20.2	6.90	1313			
1:55	6	20.2	7.05	1523			
2:00	8	20.2	7.00	1496			
2:04	10	20.3	6.95	1453			
= Time that Samples were collected.							Depth to Water at Sampling =

WELL ID: MW- \_\_\_\_\_ WELL DIAMETER (in): \_\_\_\_\_

WELL DEPTH (ft): \_\_\_\_\_ DEPTH TO WATER (ft): \_\_\_\_\_ WATER COLUMN Ht (ft): \_\_\_\_\_

STANDING WATER VOLUME (gal): \_\_\_\_\_ 3 VOLUMES (gal): \_\_\_\_\_

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: \_\_\_\_\_ SAMPLING METHOD: \_\_\_\_\_

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (C)	pH	SP (uS)	Turbidity (NTU)	DO (mg/L)	Comments
= Time that Samples were collected.							Depth to Water at Sampling =

# WELL DEVELOPMENT AND SAMPLING LOG

Project Name High St Job No. 3936 Date 4/22/03 Weather cloudy/warm  
 Sampler clay

<b>Well Data</b>		<b>Well Number</b> <u>MW-10</u>	
Total Depth of Well <u>25</u>	Casing Elevation _____	Depth to Water <u>7.06</u>	Groundwater Elevation _____
Method of Purging Well _____		Method of Sampling Well _____	
Casing Volume _____	Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft		
Depth to Water Prior to Sampling _____	<u>purge 8 gal</u>		

Field Parameters						
Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					
<u>9:03</u>	<u>2</u>	<u>18.5</u>	<u>723</u>	<u>6.97</u>	<u>217.6</u>	<u>NOS</u>
	<u>4</u>	<u>18.6</u>	<u>754</u>	<u>6.91</u>	<u>242.1</u>	<u>"</u>
<u>9:10</u>	<u>6</u>	<u>18.5</u>	<u>706</u>	<u>7.03</u>	<u>328.5</u>	<u>"</u>
	<u>8</u>	<u>18.5</u>	<u>705</u>	<u>6.99</u>	<u>336.2</u>	<u>"</u>

Comments: D.O. 2.75 mg/L @ 19.1 °C After purge & sample

<b>Well Data</b>		<b>Well Number</b> _____	
Total Depth of Well _____	Casing Elevation _____	Depth to Water _____	Groundwater Elevation _____
Method of Purging Well _____		Method of Sampling Well _____	
Casing Volume _____	Volume Factors: 2"=0.166g/ft; 4"=0.653g/ft; 6"=1.47g/ft; 8"=2.61g/ft; 12"=5.88g/ft		
Depth to Water Prior to Sampling _____			

Field Parameters						
Time	Volume (gal)	Temperature	SP	pH	Turbidity	Comments (color/odor/sheen/product etc.)
	Begin purging well					

Comments: \_\_\_\_\_

**APPENDIX D**  
**LABORATORY ANALYTICAL REPORTS FOR**  
**GROUNDWATER SAMPLES**

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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  
<http://www.mcccampbell.com> E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 04/04/03
		Date Received: 04/04/03
	Client Contact: Tim Cook	Date Reported: 04/10/03
	Client P.O.:	Date Completed: 04/10/03

**WorkOrder: 0304091**

April 10, 2003

Dear Tim:

Enclosed are:

- 1). the results of 7 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

WACA

0304091

### McCAMPBELL ANALYTICAL INC.

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHICO, CA 94553-5560  
Telephone: (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.

E-Mail: tech@wacraig.com

Tele: (707) 693-2929     Fax: (707) 693-2922

Project #: 3936     Project Name: High Street

Project Location: Oakland

Sampler Signature: *[Signature]*

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request					Other	Comments													
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&P/D&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010			BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260 9 fuel onyx only	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI			
MW-1		04/04				X					X	X			X																			
MW-3						X					X	X			X																			
MW-5						X					X	X			X																			
MW-6						X					X	X			X																			
MW-7						X					X	X			X																			
MW-8						X					X	X			X																			
MW-9						X					X	X			X																			
MW-10						X					X	X			X																			

+  
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Relinquished By: *[Signature]*     Date: 4/4     Time: 5:40p     Received By: *[Signature]*

Relinquished By:     Date:     Time:     Received By:

Relinquished By:     Date:     Time:     Received By:

ICE/°

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

PRESERVATION  VOAS     O&G     METALS     OTHER

APPROPRIATE

CONTAINERS

PERSERVED IN LAB

W. A. Craig Inc.  
6940 Tremont Road  
Dixon, CA 95620-9603Client Project ID: #3936; High Street  
  
Client Contact: Tim Cook  
Client P.O.:Date Sampled: 04/04/03  
Date Received: 04/04/03  
Date Extracted: 04/07/03-04/09/03  
Date Analyzed: 04/07/03-04/09/03**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0304091

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	320	ND	ND	ND	ND	1	95.2
002A	MW-3	W	ND	1700	ND	ND	ND	ND	1	98.4
003A	MW-5	W	1800,a	19,000	560	ND<5.0	ND<5.0	30	10	101
004A	MW-6	W	ND	ND	ND	ND	ND	ND	1	104
005A	MW-7	W	1400,a	22,000	54	27	15	180	20	102
006A	MW-8	W	ND	210	ND	ND	ND	ND	1	103
007A	MW-9	W	ND	69	ND	ND	ND	ND	1	101

Reporting Limit for DF=1;  
ND means not detected at or  
above the reporting limit

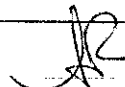
W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

// cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DIIS Certification No. 1644

  
Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

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 http://www.mcccampbell.com E-mail: main@mcccampbell.com

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 04/04/03
		Date Received: 04/04/03
	Client Contact: Tim Cook	Date Extracted: 04/08/03-04/09/03
	Client P.O.:	Date Analyzed: 04/08/03-04/09/03

**Oxygenated Volatile Organics by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0304091

Lab ID	0304091-001B	0304091-002B	0304091-003B	0304091-004B	Reporting Limit for DF =1	
Client ID	MW-1	MW-3	MW-5	MW-6		
Matrix	W	W	W	W		
DF	10	50	670	1		

Compound	Concentration				ug/kg	ug/l.
Diisopropyl ether (DIPE)	ND<5.0	ND<25	ND<330	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND<25	ND<330	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	270	1600	19,000	ND	NA	0.5
tert-Amyl methyl ether (TAME)	ND<5.0	ND<25	ND<330	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<50	ND<250	ND<3300	ND	NA	5.0
Methanol	ND<5000	ND<25,000	ND<330,000	ND	NA	500
Ethanol	ND<500	ND<2500	ND<33,000	ND	NA	50
1,2-Dibromoethane (EDB)	ND<5.0	ND<25	ND<330	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<5.0	ND<25	ND<330	ND	NA	0.5

**Surrogate Recoveries (%)**

%SS:	97.3	99.8	81.1	101	
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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



McC Campbell Analytical Inc.

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 http://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: 04/04/03
		Date Received: 04/04/03
	Client Contact: Tim Cook	Date Extracted: 04/08/03-04/09/03
	Client P.O.:	Date Analyzed: 04/08/03-04/09/03

**Oxygenated Volatile Organics by P&T and GC/MS\***

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0304091

Lab ID	0304091-005B	0304091-006B	0304091-007B		Reporting Limit for DF =1
Client ID	MW-7	MW-8	MW-9		
Matrix	W	W	W		
DF	1000	10	2.5		

Compound	Concentration			ug/kg	ug/L
Diisopropyl ether (DIPE)	ND<500	ND<5.0	ND<1.5	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<500	ND<5.0	ND<1.5	NA	0.5
Methyl-t-butyl ether (MTBE)	26,000	230	85	NA	0.5
tert-Amyl methyl ether (TAME)	ND<500	ND<5.0	ND<1.5	NA	0.5
t-Butyl alcohol (TBA)	ND<5000	ND<50	ND<12	NA	5.0
Methanol	ND<500,000	ND<5000	ND<1200	NA	500
Ethanol	ND<50,000	ND<500	ND<120	NA	50
1,2-Dibromoethane (EDB)	ND<500	ND<5.0	ND<1.5	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<500	ND<5.0	1.6	NA	0.5

**Surrogate Recoveries (%)**

%SS:	102	100	98.1		
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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.





### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0304091

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6459		Spiked Sample ID: 0304092-001A				
Compound	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(gas)	ND	60	104	102	1.55	104	102	1.80	80	120
MTBE	ND	10	103	90.4	12.7	96	95.1	0.963	80	120
Benzene	ND	10	93.6	95.2	1.69	91.6	91.5	0.0802	80	120
Toluene	ND	10	94.5	95.4	0.948	93.6	92.6	1.04	80	120
Ethylbenzene	ND	10	94.2	95	0.823	93.7	92.9	0.862	80	120
Xylenes	ND	30	95.7	99.3	3.76	99.3	95.3	4.11	80	120
%SS:	106	100	101	102	0.714	99	100	1.26	80	120

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.

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.

% 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.



**QC SUMMARY REPORT FOR SW8260B**

Matrix: W

WorkOrder: 0304091

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 6460		Spiked Sample ID: 0304090-009B				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Diisopropyl ether (DIPE)	ND	10	116	117	0.765	112	119	5.48	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	103	104	0.264	109	108	0.955	70	130
Methyl-t-butyl ether (MTBE)	ND	10	108	106	2.53	115	114	1.14	70	130
tert-Amyl methyl ether (TAME)	ND	10	105	98.4	6.30	110	106	3.99	70	130
Methanol	ND	2500	102	102	0.360	101	102	0.799	70	130
Ethanol	ND	500	107	110	2.49	101	116	13.2	70	130
1,2-Dibromoethane (EDB)	ND	10	102	103	0.873	124	105	16.7	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	109	108	1.29	112	116	3.82	70	130
%SS:	99.9	100	100	99.2	0.945	97.8	94.2	3.70	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.

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.

% 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.

**McC Campbell Analytical Inc.**

**CHAIN-OF-CUSTODY RECORD**

110 Second Avenue South, #D7  
 Pacheco, CA 94553-5566  
 (925) 798-1520

WorkOrder: 0304091

Client:

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

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

Date Received: 4/4/03  
 Date Printed: 4/7/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					<>	8021B/8015	SW8260B
0304091-001	MW-1	Water	4/4/03		A	A	B
0304091-002	MW-3	Water	4/4/03			A	B
0304091-003	MW-5	Water	4/4/03			A	B
0304091-004	MW-6	Water	4/4/03			A	B
0304091-005	MW-7	Water	4/4/03			A	B
0304091-006	MW-8	Water	4/4/03			A	B
0304091-007	MW-9	Water	4/4/03			A	B

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.

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 04/23/03
		Date Received: 04/23/03
	Client Contact: Tim Cook	Date Reported: 04/30/03
	Client P.O.:	Date Completed: 04/30/03

**WorkOrder: 0304367**

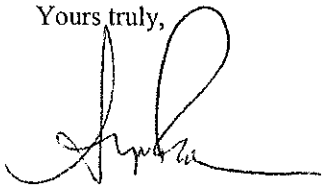
April 30, 2003

Dear Tim:

Enclosed are:

- 1). the results of 1 analyzed sample from your **#3936; High Street project,**
- 2). a QC report for the above sample
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. 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  
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 04/23/03
		Date Received: 04/23/03
	Client Contact: Tim Cook	Date Extracted: 04/24/03-04/25/03
	Client P.O.:	Date Analyzed: 04/24/03-04/25/03

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0304367

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-10	W	79,f	1500	ND	ND	ND	ND	1	101

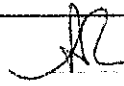
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

\*The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

 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  
 http://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: 04/23/03
		Date Received: 04/23/03
	Client Contact: Tim Cook	Date Extracted: 04/29/03
	Client P.O.:	Date Analyzed: 04/29/03

**Oxygenated Volatile Organics by P&T and GC/MS\***

Extraction Method: SW50303

Analytical Method: SW8260B

Work Order: 0304367

Lab ID	0304367-001B				Reporting Limit for DF =1
Client ID	MW-10				
Matrix	W				
DF	50				

Compound	Concentration				ug/kg	ug/L
	Diisopropyl ether (DIPE)	ND<25				NA
Ethyl tert-butyl ether (ETBE)	ND<25				NA	0.5
Methyl-t-butyl ether (MTBE)	1900				NA	0.5
tert-Amyl methyl ether (TAME)	58				NA	0.5
t-Butyl alcohol (TBA)	ND<250				NA	5.0
Ethanol	ND<2500				NA	50
Methanol	ND<25,000				NA	500
1,2-Dibromoethane (EDB)	ND<25				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<25				NA	0.5

**Surrogate Recoveries (%)**

%SS:	98.1			
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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



## QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0304367

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6674			Spiked Sample ID: 0304361-003A			
Compound	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>E</sup>	ND	60	115	118	2.77	94.4	102	7.93	80	120
MTBE	ND	10	111	114	3.40	101	102	1.35	80	120
Benzene	ND	10	111	113	1.20	99.5	96.4	3.12	80	120
Toluene	ND	10	105	109	3.75	102	102	0	80	120
Ethylbenzene	ND	10	107	112	4.40	94.1	101	7.49	80	120
Xylenes	ND	30	100	107	6.45	96	107	10.5	80	120
%SS:	105	100	107	103	3.79	98.1	99.2	1.12	80	120

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.

<sup>E</sup> TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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



### QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0304367

Compound	EPA Method: SW8260B		Extraction: SW5030B			BatchID: 6651		Spiked Sample ID: 0304378-001C		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Diisopropyl ether (DIPE)	ND	10	103	105	1.65	106	106	0	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	92	93.3	1.45	98.8	98.4	0.364	70	130
Methyl-t-butyl ether (MTBE)	0.9226	10	79.8	82.2	2.69	93	91.8	1.27	70	130
tert-Amyl methyl ether (TAME)	ND	10	88	88.7	0.815	87.3	86.8	0.621	70	130
Ethanol	ND	500	99.6	90.9	9.12	101	81.1	21.6	70	130
Methanol	ND	2500	99.4	90.5	9.35	91.5	91.2	0.392	70	130
1,2-Dibromoethane (EDB)	ND	10	120	119	0.388	119	120	1.46	70	130
1,2-Dichloroethane (1,2-DCA)	3.387	10	112	117	3.46	118	120	1.53	70	130
%SS:	113	100	110	111	1.03	109	108	0.694	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.

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.

119 Second Avenue South, #D7  
Pacifica, CA 94553-4590  
415-778-8112

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0304367

Client:

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

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

Date Received: 4/23/03  
Date Printed: 4/23/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	<>	Requested Tests	
0304367-001	MW-10	Water	4/23/03 9:30:00 AM		A	A	B

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.

**APPENDIX E**  
**LABORATORY ANALYTICAL REPORTS FOR SOIL BORING**  
**SAMPLES**

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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  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 03/24/03
		Date Received: 03/24/03
	Client Contact: Tim Cook	Date Reported: 03/31/03
	Client P.O.:	Date Completed: 03/31/03

**WorkOrder: 0303404**

March 31, 2003

Dear Tim:

Enclosed are:

- 1). the results of 2 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

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>nd</sup> AVENUE SOUTH, #07  
FACIECO, CA 94553-5560

(925) 798-1620

Fax: (925) 798-1622

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 #: *3-32*

Proj. Name: *High St.*

Project Location: *High St, Oakland CA*

Sampler Signature: *[Signature]*

**CHAIN OF CUSTODY RECORD**

Turn Around Time: RUSH 24 HR 48 HR 72 HR  DAY  
EDF Required:  Yes No

**Analysis Request**

**Comments**

SAMPLE ID	DEPTH	DATE	TIME	# Containers	Type Containers	MATRIX				METHOD PRESERVED				BTEX+MDE & 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) <i>Exy only</i>	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-8	7'	3/24/03	10:00	5	enc		X			X										X												
MW-7	8'	3/24/03	12:00	5	enc		X			X										X												

Relinquished By: <i>Clynton Mokri</i>	Date: <i>3/24/03</i>	Time: <i>2:10</i>	Received By: <i>[Signature]</i>
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

enc = enclose sampler  
ICE/1°   
GOOD PRESERVATION   
HEAD SPACE ABSENT  PRESERVATION \_\_\_\_\_ VOAS O&G METALS OTHER  
DECHLORINATED IN LAB \_\_\_\_\_ APPROPRIATE CONTAINERS   
PERSERVED IN LAB \_\_\_\_\_

*Melissa Walker*



W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High St.	Date Sampled: 03/24/03
		Date Received: 03/24/03
	Client Contact: Tim Cook	Date Extracted: 03/24/03
	Client P.O.:	Date Analyzed: 03/25/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE [Encore Sampling]\***

Extraction method: SW5035

Analytical methods: SW8021B/8015Cm

Work Order: 0303404

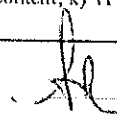
Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-8	S	92,m	ND<0.9	ND<0.09	0.28	ND<0.09	0.11	20	116
002A	MW-7	S	48,a	ND<1.5	0.52	0.26	0.47	0.34	10	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

†The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 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  
 http://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: 03/24/03
		Date Received: 03/24/03
	Client Contact: Tim Cook	Date Extracted: 03/24/03
	Client P.O.:	Date Analyzed: 03/31/03

**Oxygenated Volatile Organics by P&T and GC/MS\***

Extraction Method: SW5035B

Analytical Method: SW8260B

Work Order: 0303404

Lab ID	0303404-001A	0303404-002A			Reporting Limit for DF=1
Client ID	MW-8	MW-7			
Matrix	S	S			
DF	100	100			

Compound	Concentration			µg/Kg	µg/L
	Diisopropyl ether (DIPE)	ND<460	ND<470		5.0
Ethyl tert-butyl ether (ETBE)	ND<460	ND<470		5.0	NA
Methyl-t-butyl ether (MTBE)	ND<460	ND<470		5.0	NA
tert-Amyl methyl ether (TAME)	ND<460	ND<470		5.0	NA
t-Butyl alcohol (TBA)	ND<2300	ND<2300		25	NA
Methanol	ND<230,000	ND<230,000		2500	NA
Ethanol	ND<23,000	ND<23,000		250	NA
1,2-Dibromoethane (EDB)	ND<460	ND<470		5.0	NA
1,2-Dichloroethane (1,2-DCA)	ND<460	ND<470		5.0	NA

**Surrogate Recoveries (%)**

%SS:	98.1	94.6		
Comments	j	j		

\* 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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight.



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

Matrix: S

WorkOrder: 0303404

EPA Method: SW8021B/8015Cm		Extraction: SW5035		BatchID: 6191		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	0.60	N/A	N/A	N/A	115	111	3.41	80	120
MTBE	N/A	0.10	N/A	N/A	N/A	84.8	85.7	0.995	80	120
Benzene	N/A	0.10	N/A	N/A	N/A	101	104	3.23	80	120
Toluene	N/A	0.10	N/A	N/A	N/A	92.3	94	1.82	80	120
Ethylbenzene	N/A	0.10	N/A	N/A	N/A	104	105	1.46	80	120
Xylenes	N/A	0.30	N/A	N/A	N/A	96.7	100	3.39	80	120
%SS:	N/A	100	N/A	N/A	N/A	99.6	101	1.19	80	120

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.

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.

% 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.



### QC SUMMARY REPORT FOR SW8260B

Matrix: S

WorkOrder: 0303404

EPA Method: SW8260B		Extraction: SW5035B		BatchID: 6294		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Diisopropyl ether (DIPE)	N/A	50	N/A	N/A	N/A	118	122	3.35	70	130
Ethyl tert-butyl ether (ETBE)	N/A	50	N/A	N/A	N/A	111	110	0.894	70	130
Methyl-t-butyl ether (MTBE)	N/A	50	N/A	N/A	N/A	117	112	4.45	70	130
tert-Amyl methyl ether (TAME)	N/A	50	N/A	N/A	N/A	105	106	1.66	70	130
Methanol	N/A	12500	N/A	N/A	N/A	106	109	2.72	70	130
Ethanol	N/A	2500	N/A	N/A	N/A	108	105	2.96	70	130
1,2-Dibromoethane (EDB)	N/A	50	N/A	N/A	N/A	112	112	0.210	70	130
1,2-Dichloroethane (1,2-DCA)	N/A	50	N/A	N/A	N/A	118	115	2.60	70	130
%SS:	N/A	100	N/A	N/A	N/A	106	103	2.74	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.

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.

% 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.



**McCampbell Analytical Inc.**



119 Second Avenue South, #D7  
 Ukiah, CA 95558-5560  
 707-768-1700

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0303404

Client:

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

TEL: (707) 693-2923  
 FAX: (707) 693-2922  
 ProjectNo: #3936; High St.  
 PO:

Date Received: 3/24/03

Date Printed: 3/24/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					<>	8021B/8015	SW8260B
0303404-001	MW-8	Soil	3/24/03 10:00:00 AM		A	A	A
0303404-002	MW-7	Soil	3/24/03 12:00:00 PM			A	A

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  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

W. A. Craig Inc. 6940 Tremont Road Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 03/25/03
		Date Received: 03/26/03
	Client Contact: Tim Cook	Date Reported: 04/02/03
	Client P.O.:	Date Completed: 04/02/03

WorkOrder: 0303464

April 02, 2003

Dear Tim:

Enclosed are:

- 1). the results of 2 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

WAC d

0303464

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME:

RUSH  24 HOUR  48 HOUR  5 DAY

Report To:

Bill To: W.A. Craig, Inc.

Company: W.A. Craig, Inc.

EDF Required?  Yes  No

Analysis Request

Other

Comments

E-mail: tech@wacraig.com

Tele: 707-693-2929

Fax: 707-693-2922

Project #: 3936

Project Name: High Street

Project Location: Oakland

Sampler Signature: [Signature]

BTEX & TPH as Gas (602/8020 + 8015) MTDE  
TPH as Diesel (8015)

Total Petroleum Oil & Grease (5520 E&F/B&F)

Total Petroleum Hydrocarbons (418.1)

EPA 601 / 8010

BTEX ONLY (EPA 602 / 8020)

EPA 608 / 8080

EPA 608 / 8080 PCB's ONLY

EPA 624 / 8240 (8260) 9 day's only

EPA 625 / 8270

PAH's / PNA's by EPA 625 / 8270 / 8310

CAM-17 Metals

LUFT 5 Metals

Lead (7240/7421/239.2/6010)

RCI

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED							
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other				
MW-7		3-25		1		X												
MW-8		3-25		1		X												
MW-9		3-25		1		X												
MW-9@10'		3-25				X					X							

Composite

Relinquished By:

[Signature]

Date:

3/25/03 8:30 AM

Time:

Received By:

[Signature]

Relinquished By:

Date:

Time:

Received By:

Relinquished By:

Date:

Time:

Received By:

Remarks:

ICE\*   
GOOD CONDITION   
HEAD SPACE ABSENT   
DECHLORINATED IN LAB

PRESERVATION APPROPRIATE <input checked="" type="checkbox"/>	VOAS <input checked="" type="checkbox"/>	O&G <input type="checkbox"/>	METALS <input type="checkbox"/>	OTHER <input type="checkbox"/>
CONTAINERS PRESERVED IN LAB <input checked="" type="checkbox"/>				

WAC-10-000-0000 021



**McC Campbell Analytical Inc.**

110 2nd Avenue South, #107, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 http://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: 03/25/03
	Client Contact: Tim Cook	Date Received: 03/26/03
	Client P.O.:	Date Extracted: 03/26/03
		Date Analyzed: 03/28/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE [Encore Sampling]\***

Extraction method: SW5035

Analytical methods: SW802113/8015Cm

Work Order: 0303464

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
002A	MW-9@@	S	3.4,a	ND	0.014	0.047	0.037	0.13	1	115

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/l.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DIIS Certification No. 1644

Angela Rydelius, Lab Manager



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 http://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: 03/25/03
		Date Received: 03/26/03
	Client Contact: Tim Cook	Date Extracted: 03/26/03
	Client P.O.:	Date Analyzed: 04/02/03

**Oxygenated Volatile Organics by P&T and GC/MS [Encore Sampling]\***

Extraction Method: SW5035B

Analytical Method: SW8260B

Work Order: 0303464

Lab ID	0303464-002A	Reporting Limit for DF =1	S	W
Client ID	MW-9@			
Matrix	S			
DF	1			

Compound	Concentration			µg/Kg	µg/L
Diisopropyl ether (DIPE)	ND<6.3			5.0	NA
Ethyl tert-butyl ether (ETBE)	ND<6.3			5.0	NA
Methyl-t-butyl ether (MTBE)	31			5.0	NA
tert-Amyl methyl ether (TAME)	ND<6.3			5.0	NA
t-Butyl alcohol (TBA)	ND<31			25	NA
Methanol	ND<3100			2500	NA
Ethanol	ND<310			250	NA
1,2-Dibromoethane (EDB)	ND<6.3			5.0	NA
1,2-Dichloroethane (1,2-DCA)	ND<6.3			5.0	NA

**Surrogate Recoveries (%)**

%SS:	95.6			
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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight.



**McC Campbell Analytical Inc.**

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 http://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: 03/25/03
	Client Contact: Tim Cook	Date Received: 03/26/03
	Client P.O.:	Date Extracted: 03/26/03
		Date Analyzed: 03/26/03

**Lead by ICP\***

Extraction method: SW3050B Analytical methods: 6010C Work Order: 0303464

Lab ID	Client ID	Matrix	Extraction	Lead	DF	% SS
0303464-001A	MW-7-MW-9	S	TTLC	41	1	102

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TTLC	NA	mg/L
	S	TTLC	3.0	mg/Kg

\* water samples are reported in mg/L, soil/sludge/solid/product samples in mg/kg, wipes in µg/wipe and all TCLP / STLC / DISTLC / SPLP extracts in mg/L.  
 ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.  
 Analytical Methods: EPA 6010C/200.7 for all elements except: 200.9 (water- Sb, As, Pb, Se, Tl); 245.1 (Hg); 7010 (sludge/soil/solid/oil/product/wipes - As, Se, Tl); 7471B (Hg).  
 DISTLC extractions are performed using STLC methodology except that deionized water is substituted for citric acid buffer as the extraction fluid. DISTLC results are not applicable to STLC regulatory limits.  
 i) liquid sample that contains greater than ~2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations; j) reporting limit raised due to insufficient sample amount; z) reporting limit raised due to matrix interference.



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: S

WorkOrder: 0303464

EPA Method: SW8021B/8015Cm		Extraction: SW5035		BatchID: 6338			Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	0.60	N/A	N/A	N/A	108	102	6.08	80	120
MTBE	N/A	0.10	N/A	N/A	N/A	92.2	88.5	4.15	80	120
Benzene	N/A	0.10	N/A	N/A	N/A	97.9	95	3.02	80	120
Toluene	N/A	0.10	N/A	N/A	N/A	98.9	96.4	2.52	80	120
Ethylbenzene	N/A	0.10	N/A	N/A	N/A	100	96.2	4.23	80	120
Xylenes	N/A	0.30	N/A	N/A	N/A	100	99	1.01	80	120

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.

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.

% 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.



### QC SUMMARY REPORT FOR SW8260B

Matrix: S

WorkOrder: 0303464

EPA Method: SW8260B		Extraction: SW5035B		BatchID: 6294			Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Diisopropyl ether (DIPE)	N/A	50	N/A	N/A	N/A	118	122	3.35	70	130
Ethyl tert-butyl ether (ETBE)	N/A	50	N/A	N/A	N/A	111	110	0.894	70	130
Methyl-t-butyl ether (MTBE)	N/A	50	N/A	N/A	N/A	117	112	4.45	70	130
tert-Amyl methyl ether (TAME)	N/A	50	N/A	N/A	N/A	105	106	1.66	70	130
Methanol	N/A	12500	N/A	N/A	N/A	106	109	2.72	70	130
Ethanol	N/A	2500	N/A	N/A	N/A	108	105	2.96	70	130
1,2-Dibromoethane (EDB)	N/A	50	N/A	N/A	N/A	112	112	0.210	70	130
1,2-Dichloroethane (1,2-DCA)	N/A	50	N/A	N/A	N/A	118	115	2.60	70	130
%SS:	N/A	100	N/A	N/A	N/A	106	103	2.74	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.

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.

% 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.





McC Campbell Analytical Inc.

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 http://www.mccampbell.com E-mail: main@mccampbell.com

### QC SUMMARY REPORT FOR 6010C

Matrix: S

WorkOrder: 0303464

EPA Method: 6010C		Extraction: SW3050B			BatchID: 6342		Spiked Sample ID: 0303468-001A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Lead	12.5t	500	93.6	99.1	5.56	98.8	105	6.38	70	130
%SS:	106	100	99.1	106	6.39	102	103	1.23	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.

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.

% 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.

**McC Campbell Analytical Inc.**

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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0303464

Client:

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

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

Date Received: 03/26/2003

Date Printed: 03/26/2003

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests			
					<>	6010C	N8021B/8015C	SW8260B
0303464-001	MW-7-MW-9	Soil	03/25/2003	<input type="checkbox"/>	A	A		
0303464-002	MW-9@	Soil	03/25/2003	<input type="checkbox"/>			A	A

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.

W. A. Craig Inc.  6940 Tremont Road  Dixon, CA 95620-9603	Client Project ID: #3936; High Street	Date Sampled: 04/04/03
		Date Received: 04/04/03
	Client Contact: Tim Cook	Date Reported: 04/10/03
	Client P.O.:	Date Completed: 04/10/03

**WorkOrder: 0304081**

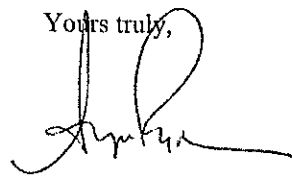
April 10, 2003

Dear Tim:

Enclosed are:

- 1). the results of 1 analyzed sample from your **#3936; High Street project,**
- 2). a QC report for the above sample
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. 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 94533-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
http://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: 04/04/03
	Client Contact: Tim Cook	Date Received: 04/04/03
	Client P.O.:	Date Extracted: 04/04/03
		Date Analyzed: 04/05/03

**Oxygenated Volatile Organics by P&T and GC/MS [Encore Sampling]\***

Extraction Method: SW5035B

Analytical Method: SW8260B

Work Order: 0304081

Lab ID	0304081-001A				Reporting Limit for DF =1
Client ID	MW-10@4'				
Matrix	S				
DF	1				

Compound	Concentration				µg/Kg	µg/L
	Diisopropyl ether (DIPE)	ND				5.0
Ethyl tert-butyl ether (ETBE)	ND				5.0	NA
Methyl-t-butyl ether (MTBE)	ND				5.0	NA
tert-Amyl methyl ether (TAME)	ND				5.0	NA
t-Butyl alcohol (TBA)	ND				25	NA
Methanol	ND				2500	NA
Ethanol	ND				250	NA
1,2-Dibromoethane (EDB)	ND				5.0	NA
1,2-Dichloroethane (1,2-DCA)	ND				5.0	NA

**Surrogate Recoveries (%)**

%SS:	92.8			
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.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight.



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

Matrix: S

WorkOrder: 0304081

EPA Method: SW8021B/8015Cm		Extraction: SW5035		BatchID: 6338			Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	0.60	N/A	N/A	N/A	108	102	6.08	80	120
MTBE	N/A	0.10	N/A	N/A	N/A	92.2	88.5	4.15	80	120
Benzene	N/A	0.10	N/A	N/A	N/A	97.9	95	3.02	80	120
Toluene	N/A	0.10	N/A	N/A	N/A	98.9	96.4	2.52	80	120
Ethylbenzene	N/A	0.10	N/A	N/A	N/A	100	96.2	4.23	80	120
Xylenes	N/A	0.30	N/A	N/A	N/A	100	99	1.01	80	120

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.

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.

% 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.



**QC SUMMARY REPORT FOR SW8260B**

Matrix: S

WorkOrder: 0304081

EPA Method: SW8260B		Extraction: SW5035B			BatchID: 6456		Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/Kg	µg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
Diisopropyl ether (DIPE)	N/A	50	N/A	N/A	N/A	113	114	1.08	70	130
Ethyl tert-butyl ether (ETBE)	N/A	50	N/A	N/A	N/A	105	103	1.48	70	130
Methyl-t-butyl ether (MTBE)	N/A	50	N/A	N/A	N/A	108	108	0.258	70	130
tert-Amyl methyl ether (TAME)	N/A	50	N/A	N/A	N/A	103	102	1.01	70	130
Methanol	N/A	12500	N/A	N/A	N/A	87	110	23.5	70	130
Ethanol	N/A	2500	N/A	N/A	N/A	107	109	1.72	70	130
1,2-Dibromoethane (EDB)	N/A	50	N/A	N/A	N/A	108	101	5.85	70	130
1,2-Dichloroethane (1,2-DCA)	N/A	50	N/A	N/A	N/A	114	114	0.103	70	130
%SS:	N/A	100	N/A	N/A	N/A	102	102	0.734	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.

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.

% 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.



**McC Campbell Analytical Inc.**

116 Second Avenue South, #D7  
Pacifica, CA 94553-5560  
925-798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0304081

Client:

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

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

Date Received: 4/4/03  
Date Printed: 4/4/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests		
					<>	8021B/8015	SW8260B
0304081-001	MW-10@4'	Soil	4/4/03 9:50:00 AM		A	A	A

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.