

**CONESTOGA-ROVERS  
& ASSOCIATES**

April 13, 2007

Mr. Steven Plunkett  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Re: **First Quarter 2007 Monitoring Report**  
Former Olympic Service Station  
1436 Grant Avenue  
San Lorenzo, California  
Alameda County RO #373

Dear Mr. Plunkett:

On April 2, 2007, Conestoga-Rovers & Associates, Inc. (CRA) acquired Cambria Environmental Technology, Inc. (Cambria); therefore, CRA prepared this monitoring report for the site referenced on behalf of Encinal Properties. The site is a former Olympic Service Station that currently operates as San Lorenzo Auto Repair located at 1436 Grant Avenue in San Lorenzo (Figure 1). From 1999 to 2002 soil and groundwater assessments were completed and five quarterly groundwater monitoring and sampling events were conducted during 1999 and 2000. Alameda County Environmental Health Department (ACEHD) requested to reinstate the groundwater monitoring program at the site in a letter dated December 4, 2006. The property is owned by Mr. George Jaber (Encinal Properties) and Mr. Tony Malonzo operates the auto repair shop at the site. Commercial properties are located south and southwest of the site. A school is located north of the site. The remainder of the surrounding area is residential in nature.

On July 10, 1998, four steel, single-walled underground storage tanks (USTs) were removed from the site: one 10,000-gallon gasoline UST, one 8,000-gallon gasoline UST; one 5,000-gallon diesel UST; and one 250-gallon used-oil UST (Figure 2). Six dispensers located on two islands north of the auto repair building were also removed. First quarter 2007 activities are summarized below.

### **FIRST QUARTER 2007 ACTIVITIES**

On March 1, 2007, Muskan Environmental Sampling monitored and sampled groundwater in wells MW-1, MW-2 and MW-3 (Figure 2). Monitoring well construction details are presented in Table 1. Groundwater monitoring and analytical data are summarized in Table 2. The associated field data sheets are presented as Attachment A. The laboratory analytical report is presented as Attachment B. Cambria's standard operating procedures for groundwater monitoring and sampling are presented as Attachment C.

This quarter, groundwater was approximately 8.97 to 9.12 feet below top of casing. This quarter groundwater flowed toward the west-southwest at a gradient of approximately 0.003 ft/ft.



Total petroleum hydrocarbons as gasoline (TPHg) was only detected in monitoring well MW-3, at a concentration of 82 micrograms per liter ( $\mu\text{g/l}$ ). No TPH as diesel (TPHd) or TPH as motor oil (TPHmo) was detected in any of the wells. Benzene was only detected in well MW-3 at a concentration of 20  $\mu\text{g/l}$ . Methyl-tertiary butyl ether (MTBE) was detected in wells MW-1, MW-2 and MW-3 at concentrations of 78  $\mu\text{g/l}$ , 9.8  $\mu\text{g/l}$ , and 100  $\mu\text{g/l}$ , respectively. Petroleum hydrocarbon concentrations have significantly declined since the last sampling event in October 2000. Cambria recommends additional groundwater monitoring to establish current petroleum hydrocarbon concentration trends.

### **ACTIVITIES PLANNED FOR THE SECOND QUARTER OF 2007**

CRA will monitor and sample all wells at the site. CRA will prepare a table summarizing the groundwater monitoring and sampling data and a potentiometric map that will be submitted in a monitoring report along with the field data sheets, standard operating procedures, and the laboratory analytical report.

Cambria submitted the *Site Assessment and Preferential Pathway Study Workplan* to ACEHD on March 2, 2007. CRA will implement this scope of work upon approval from ACEHD.



**CONESTOGA-ROVERS  
& ASSOCIATES**

First Quarter 2007 Monitoring Report  
Former Olympic Service Station  
April 13, 2007

## CLOSING

We appreciate this opportunity to work with you on this project. Please call Brandon Wilken at (510) 420-3355 if you have any questions or comments.

Conestoga-Rovers & Associates, Inc. (CRA) prepared this document for use by our client and appropriate regulatory agencies. It is based partially on information available to CRA from outside sources and/or in the public domain, and partially on information supplied by CRA and its subcontractors. CRA makes no warranty or guarantee, expressed or implied, included or intended in this document, with respect to the accuracy of information obtained from these outside sources or the public domain, or any conclusions or recommendations based on information that was not independently verified by CRA. This document represents the best professional judgment of CRA. None of the work performed hereunder constitutes or shall be represented as a legal opinion of any kind or nature.

Sincerely,  
**Conestoga-Rovers & Associates, Inc.**

Christina McClelland  
Staff Geologist

Brandon S. Wilken, P.G.  
Senior Project Geologist

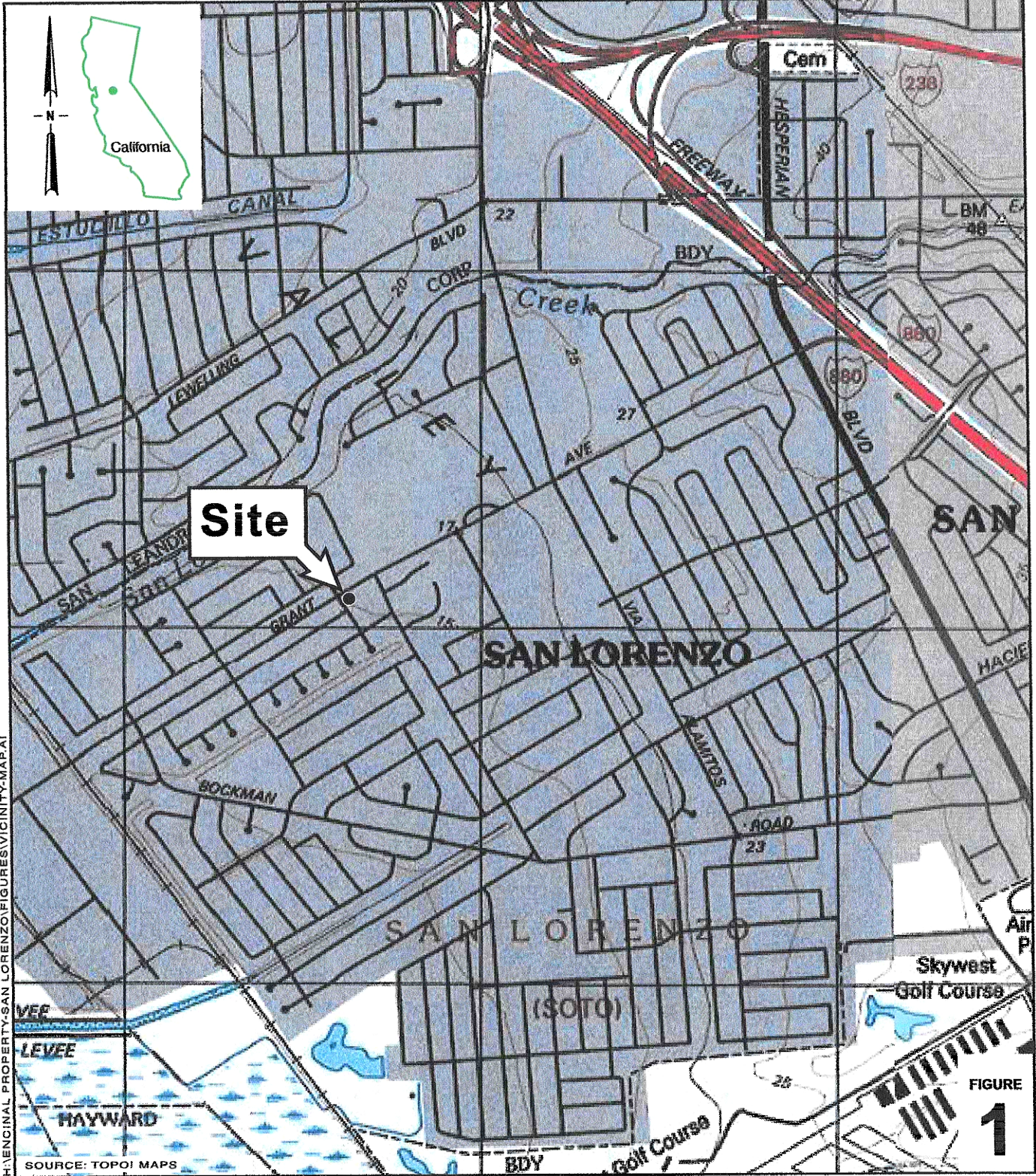


- Figures:      1 – Vicinity Map  
                  2 – Groundwater Elevation and Hydrocarbon Concentration Map
- Tables:        1 – Well Construction Details  
                  2 – Groundwater Monitoring and Analytical Data
- Attachments:  A – Field Data Sheets  
                  B – Laboratory Analytical Report  
                  C – Standard Operating Procedures

Cc:      Mr. George Jaber, Encinal Properties, 2801 Encinal Avenue, Alameda, CA 94501-4726

I:\R\Encinal Property-San Lorenzo\QM\2007\1Q07\1Q07 QMR.doc





**Olympic Service Station**  
 1436 Grant Avenue  
 San Lorenzo, California




**Vicinity Map**



**EXPLANATION**

- MW-1 ● Monitoring well location
- BH-A ○ Soil boring location
- Confirmation soil sample location (July 1998)
- Confirmation soil sample location (December 1998)
- 9.10 Groundwater elevation contour line

Well ID	Well designation
ELEV	Groundwater elevation
TPHd	Hydrocarbon concentrations in micrograms per liter (µg/L)
TPHg	
Benzene	
MTBE	

 Groundwater flow direction and gradient

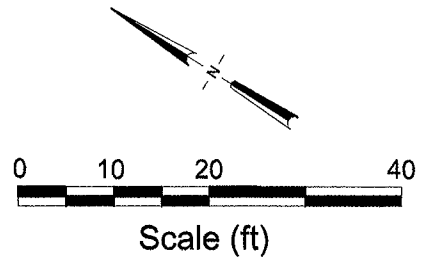
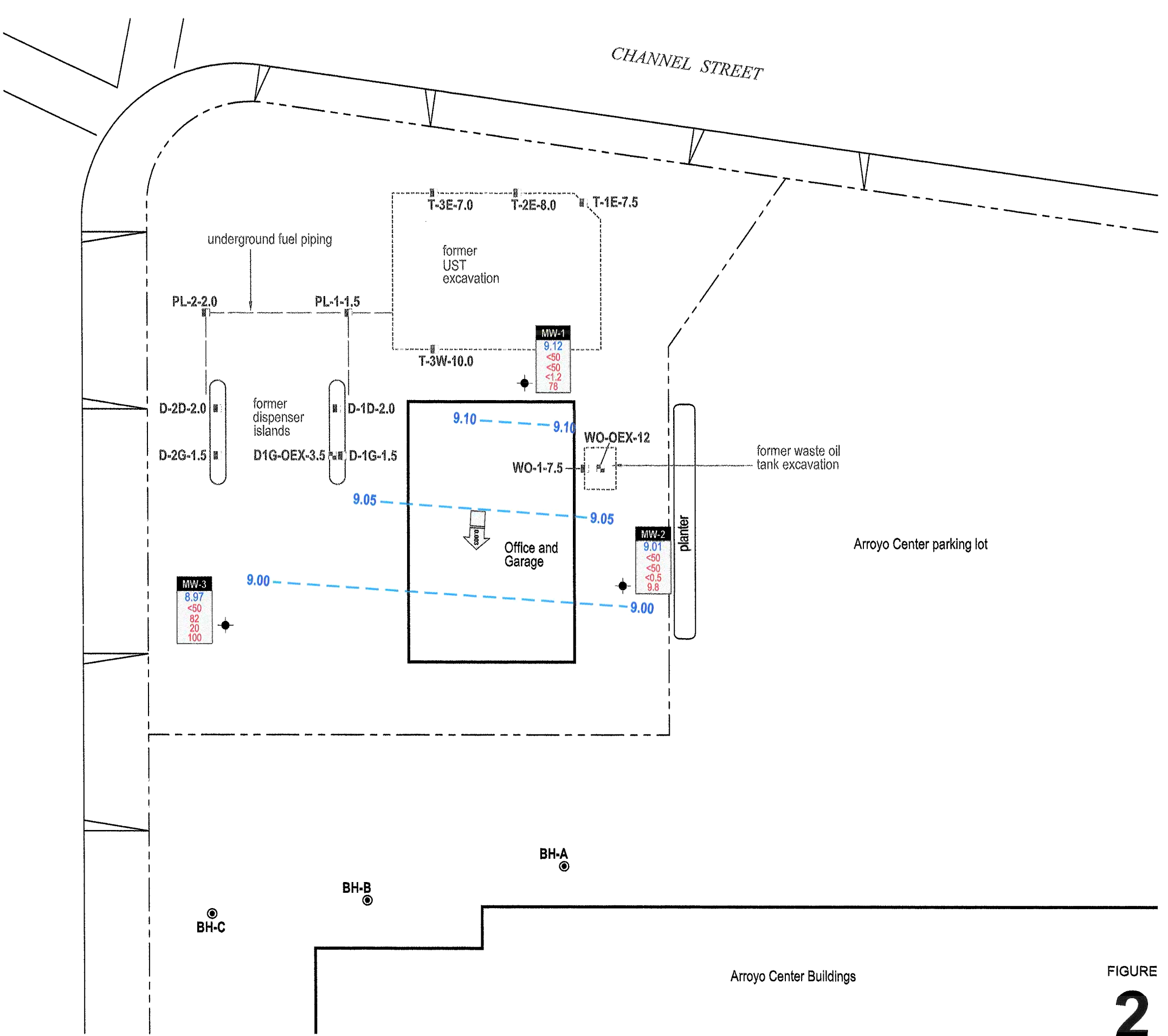


FIGURE  
**2**

\\ENCINAL\PROPERTY-SAN LORENZO\FIGURES\CINNAL\_1007-HCGM.DWG

Table 2. Groundwater Analytical Data - Encinal Properties, Former Olympic Service Station, 1436 Grant Avenue, San Lorenzo, California

Well ID	Date	DTW	GWE	Oil & Grease	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	SVOCs & HVOCs	DIPE	TAME	ETBE	TBA	Ethanol	EDB	1,2-DCA	Notes
		(ft)	(ft above msl)		Concentrations in micrograms per liter (µg/L)																
<i>(ft above msl)</i>																					
<i>Grab Groundwater Samples</i>																					
Pit Water	9/13/1998	--	--	--	--	2,100	3,600	350	130	39	380	17,000	--	--	--	--	--	--	--	--	--
BH-A	4/30/2002	17/8	--	--	<100	<100	180	<0.50	<0.50	8.8	<0.50	82	--	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<5.0	
BH-B	4/30/2002	16/8	--	--	<100	<200	2,300	120	11	60	150	2,000	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
BH-C	4/30/2002	16/8	--	--	<100	<150	1,200	57	0.72	43	87	240	--	<0.50	1.0	<0.50	<5.0	<5.0	<5.0	<5.0	
<i>Quarterly Groundwater Samples</i>																					
MW-1	10/6/1999	8.35	6.65	--	--	84	3,900	<25	<25	<25	<25	3,500	--	--	--	--	--	--	--	--	*
15.00	1/13/2000	7.90	7.10	--	--	<50	<1,300	18	<13	<13	<13	1,700	--	--	--	--	--	--	--	--	*
	4/12/2000	7.08	7.92	--	--	56	<1,000	66	<10	<10	<10	1,600	--	--	--	--	--	--	--	--	*
	7/19/2000	7.66	7.34	--	--	52	<1,000	<10	<10	<10	<10	1,200	--	--	--	--	--	--	--	--	*
	10/25/2000	7.91	7.09	--	--	76	4,100	120	<25	<25	<25	6,100	--	--	--	--	--	--	--	--	*
	2/16/2007	6.32	8.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*
	3/1/2007	5.88	9.12	--	<250	<50	<50	<50	<1.2	<1.2	<1.2	78	--	<1.2	<1.2	<1.2	<12	<120	<1.2	<1.2	*
MW-2	10/6/1999	7.87	6.59	<1,000	<500	<50	70	<0.5	<0.5	<0.5	<0.5	11	ND	--	--	--	--	--	--	--	*
14.46	1/13/2000	7.46	7.00	<1,000	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	6.2	ND	--	--	--	--	--	--	--	*
	4/12/2000	6.67	7.79	1,100	<500	<50	<50	<0.5	<0.5	<0.5	<0.5	39	--	--	--	--	--	--	--	--	*
	7/19/2000	7.23	7.23	1,300	<500	<50	<1,000	<10	<10	<10	<10	990	--	--	--	--	--	--	--	--	*
	10/25/2000	7.52	6.94	--	<500	<50	370	<2.5	<2.5	<2.5	<2.5	690	--	--	--	--	--	--	--	--	*
	2/16/2007	5.89	8.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*
	3/1/2007	5.45	9.01	--	<250	<50	<50	<0.5	<0.5	<0.5	<0.5	9.8	--	<0.5	<0.5	<0.5	<5.0	<50	<0.5	<0.5	*
MW-3	10/6/1999	7.90	6.51	--	--	300	3,900	900	89	160	560	790	--	--	--	--	--	--	--	--	*
14.41	1/13/2000	7.50	6.91	--	--	210	740	110	4.8	35	18	290	--	--	--	--	--	--	--	--	*
	4/12/2000	6.61	7.80	--	--	640	2,200	650	9.7	180	24	140	--	--	--	--	--	--	--	--	*
	7/19/2000	7.24	7.17	--	--	270	2,700	420	<2.5	160	<2.5	99	--	--	--	--	--	--	--	--	*
	10/25/2000	7.52	6.89	--	--	150	710	180	<2.5	24	<2.5	71	--	--	--	--	--	--	--	--	*
	2/16/2007	5.90	8.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*
	3/1/2007	5.44	8.97	--	<250	<50	82	20	<1.7	<1.7	<1.7	100	--	<1.7	<1.7	<1.7	<17	<170	<1.7	<1.7	*

**Abbreviations / Notes**

TOC = Top of casing  
 DTW = Depth to water  
 GWE = Groundwater elevation in feet above mean sea level  
 ft above msl = feet above mean sea level  
 17/8 = Depth to first encountered groundwater/depth of static groundwater  
 <n = Not detected above laboratory reporting limit  
 -- = Not sampled, not analyzed  
 Oil and grease by EPA Method 5520 E&F  
 TPHd = Total Petroleum Hydrocarbons as diesel range by EPA Method 8015  
 TPHg = Total Petroleum Hydrocarbons as gasoline range by EPA Method 8015  
 TPHmo = Total Petroleum Hydrocarbons as motor oil by EPA Method 8015  
 Benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020  
 MTBE = Methyl tertiary butyl ether by EPA Method 8020  
 Di-isopropyl ether (DIPE), tertiary-amyyl methyl ether (TAME), ethyl tertiary-butyl ether (ETBE), tertiary-butyl alcohol (TBA) by EPA Method 8260B  
 SVOCs = Semi-volatile organic compounds by EPA Method 8270, refer to corresponding analytical laboratory report for a full list of compounds  
 HVOCs = Halogenated volatile organic compounds by EPA Method 8010, refer to corresponding analytical laboratory report for a full list of compounds  
 \* = See Analytical Laboratory Report for laboratory sample description and TPH chromatogram interpretation  
 TOC elevations are relative to a project datum determined by Aqua Science Engineers, Inc. in 1998.

**ATTACHMENT A**

**Field Data Sheets**







## WELL SAMPLING FORM

<b>Date:</b>		3/1/2007				
<b>Client:</b>		Cambria Environmental Technology Inc.				
<b>Site Address:</b>		1436 Grant Avenue, San Lorenzo, CA				
<b>Well ID:</b>		MW-1				
<b>Well Diameter:</b>		2"				
<b>Purging Device:</b>		Disposable Bailer				
<b>Sampling Method:</b>		Disposable Bailer				
<b>Total Well Depth:</b>		24.37		<b>Fe=</b> <b>mg/L</b>		
<b>Depth to Water:</b>		5.88		<b>ORP=</b> <b>mV</b>		
<b>Water Column Height:</b>		18.49		<b>DO=</b> <b>mg/L</b>		
<b>Gallons/ft:</b>		0.16				
<b>1 Casing Volume (gal):</b>		2.96		<b>COMMENTS:</b> very turbid, silty		
<b>3 Casing Volumes (gal):</b>		8.88				
<b>TIME:</b>	<b>CASING VOLUME (gal)</b>	<b>TEMP (Celsius)</b>	<b>pH</b>		<b>COND. (µS)</b>	
11:45	3.0	18.5	7.40		1378	
11:50	5.9	18.1	7.47	1393		
11:55	8.9	18.3	7.42	1408		
<b>Sample ID:</b>	<b>Sample Date:</b>	<b>Sample Time:</b>	<b>Container Type</b>	<b>Preservative</b>	<b>Analytes</b>	<b>Method</b>
MW-1	3/1/2007	12:00	40 ml VOA, 1 L amber	HCl, ICE	TPHg TPHd 9 Oxy's	8015 with silica gel clean up, 8021
				<b>Signature:</b>		



## WELL SAMPLING FORM

<b>Date:</b>		3/1/2007				
<b>Client:</b>		Cambria Environmental Technology Inc.				
<b>Site Address:</b>		1436 Grant Avenue, San Lorenzo, CA				
<b>Well ID:</b>		MW-2				
<b>Well Diameter:</b>		2"				
<b>Purging Device:</b>		Disposable Bailer				
<b>Sampling Method:</b>		Disposable Bailer				
<b>Total Well Depth:</b>		19.36	<b>Fe=</b> mg/L			
<b>Depth to Water:</b>		5.45	<b>ORP=</b> mV			
<b>Water Column Height:</b>		13.91	<b>DO=</b> mg/L			
<b>Gallons/ft:</b>		0.16				
<b>1 Casing Volume (gal):</b>		2.23	<b>COMMENTS:</b> very turbid, silty			
<b>3 Casing Volumes (gal):</b>		6.68				
<b>TIME:</b>	<b>CASING VOLUME (gal)</b>	<b>TEMP (Celsius)</b>			<b>pH</b>	<b>COND. (µS)</b>
10:40	2.2	19.1	7.30	1196		
10:45	4.5	18.8	7.31	1205		
10:50	6.7	18.5	7.33	1233		
<b>Sample ID:</b>	<b>Sample Date:</b>	<b>Sample Time:</b>	<b>Container Type</b>	<b>Preservative</b>	<b>Analytes</b>	<b>Method</b>
MW-2	3/1/2007	10:55	40 ml VOA, 1 L amber	HCl, ICE	TPHg TPHd 9 Oxy's	8015 with silica gel clean up, 8021
<b>Signature:</b>						



## WELL SAMPLING FORM

<b>Date:</b>		3/1/2007				
<b>Client:</b>		Cambria Environmental Technology Inc.				
<b>Site Address:</b>		1436 Grant Avenue, San Lorenzo, CA				
<b>Well ID:</b>		MW-3				
<b>Well Diameter:</b>		2"				
<b>Purging Device:</b>		Disposable Bailer				
<b>Sampling Method:</b>		Disposable Bailer				
<b>Total Well Depth:</b>		19.06	<b>Fe=</b> <b>mg/L</b>			
<b>Depth to Water:</b>		5.44	<b>ORP=</b> <b>mV</b>			
<b>Water Column Height:</b>		13.62	<b>DO=</b> <b>mg/L</b>			
<b>Gallons/ft:</b>		0.16				
<b>1 Casing Volume (gal):</b>		2.18	<b>COMMENTS:</b> very turbid, silty			
<b>3 Casing Volumes (gal):</b>		6.54				
<b>TIME:</b>	<b>CASING VOLUME (gal)</b>	<b>TEMP (Celsius)</b>			<b>pH</b>	<b>COND. (µS)</b>
11:15	2.2	17.9	7.12	976		
11:20	4.4	17.3	7.15	1007		
11:25	6.5	17.7	7.10	964		
<b>Sample ID:</b>	<b>Sample Date:</b>	<b>Sample Time:</b>	<b>Container Type</b>	<b>Preservative</b>	<b>Analytes</b>	<b>Method</b>
MW-3	3/1/2007	11:30	40 ml VOA, 1 L amber	HCl, ICE	TPHg TPHd 9 Oxy's	8015 with silica gel clean up, 8021
				<b>Signature:</b>		

**ATTACHMENT B**

**Laboratory Analytical Report**





**McC Campbell Analytical, Inc.**

"When Quality Counts"

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

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #629-1000	Date Sampled: 03/01/07
		Date Received: 03/02/07
	Client Contact: Brandon Wilken	Date Reported: 03/07/07
	Client P.O.:	Date Completed: 03/07/07

**WorkOrder: 0703045**

March 07, 2007

Dear Brandon:

Enclosed are:

- 1). the results of 3 analyzed samples from your #629-1000 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.

Best regards,

Angela Rydelius, Lab Manager

0703045 CETE

**McCAMPBELL ANALYTICAL, INC.**

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

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
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: Brandon Wilken Bill To: Cambria Environmental Technology  
Company: Cambria Environmental Technology  
5900 Hollis St. Ste A Emeryville, CA 94608 E-Mail: bwilken@cambria-env.com  
Tele: 510-420-3355 Fax: (510) 420-9170  
Project #: 629-1000 Project Name: En Cinal Properties Former Olympic Station  
Project Location: 1436 Grant Ave. San Lorenzo, CA  
Sampler Signature: Muskan Environmental Sampling

**Analysis Request**

Other Comments

Filter Samples for Metals analysis: Yes / No

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-1		3-1-07	12:00	4	VOG Amb	X					X	X					
MW-2			10:55	1													
MW-3			11:30	X	X												
TR				1	VOG	X					X	X					

MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	
MTBE / BTEX ONLY (EPA 602 / 8021)	
TPH as Diesel <del>8015</del> (8015) <u>with target C10-0-0</u>	X
Total Petroleum Oil & Grease (1664 / 5520 EP&F)	X
Total Petroleum Hydrocarbons (418.1)	
EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	
EPA 505 / 608 / 8081 (CI Pesticides)	
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	
EPA 507 / 8141 (NP Pesticides)	
EPA 515 / 8151 (Acidic CI Herbicides)	
EPA 524.2 / 624 / 8260 (VOCs)	
Fuel Additives (MTBE, ETBE, TAME, DIPE, TBA, BSA, MIP, EDB, ethanol) by 8260B <u>BTEX / EDC</u>	X
TPHg by 8015 M	
VOCs and fuel additives by 8260	X
TPHg <del>8015</del> (8015 / 8020)	X

Relinquished By: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: [Signature]  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE / ~~GOOD CONDITION~~  
HEAD SPACE ABSENT   
DECLORINATED IN LAB   
PRESERVATION VOAS  O&G   
APPROPRIATE CONTAINERS   
PRESERVED IN LAB METALS  OTHER

**McC Campbell Analytical, Inc.**

**CHAIN-OF-CUSTODY RECORD**



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

WorkOrder: 0703045

ClientID: CETE

EDF

Fax

Email

HardCopy

ThirdParty

Report to: Brandon Wilken  
Cambria Env. Technology  
5900 Hollis St, Suite A  
Emeryville, CA 94608

Email: bwilken@cambria-env.com  
TEL: (510) 420-0700 FAX: (510) 420-9170  
ProjectNo: #629-1000  
PO:

Bill to:

Requested TAT: 5 days

Date Received: 03/02/2007  
Date Printed: 03/02/2007

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0703045-001	MW-1	Water	3/1/07 12:00:00 PM	<input type="checkbox"/>	A	B	A										
0703045-002	MW-2	Water	3/1/07 10:55:00 AM	<input type="checkbox"/>	A	B											
0703045-003	MW-3	Water	3/1/07 11:30:00 AM	<input type="checkbox"/>	A	B											

**Test Legend:**

1	G-MBTEX_W	2	MBTEXOXY-8260B_W	3	PREFD REPORT	4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 0703045-001A, 0703045-002A, 0703045-003A contain testgroup. Please make sure all relevant testcodes are reported. Many thanks.

**Prepared by: Sheli Cryderman**

**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.

"When Quality Counts"

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

Cambria Env. Technology  5900 Hollis St, Suite A  Emeryville, CA 94608	Client Project ID: #629-1000	Date Sampled: 03/01/07
		Date Received: 03/02/07
	Client Contact: Brandon Wilken	Date Extracted: 03/03/07-03/05/07
	Client P.O.:	Date Analyzed 03/03/07-03/05/07

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*

Extraction method SW5030B

Analytical methods SW8015Cm

Work Order: 0703045

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
001A	MW-1	W	ND,i	1	93
002A	MW-2	W	ND,i	1	108
003A	MW-3	W	82,a,i	1	97

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

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; p) see attached narrative.





# McC Campbell Analytical, Inc.

"When Quality Counts"

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Cambria Env. Technology  5900 Hollis St, Suite A  Emeryville, CA 94608	Client Project ID: #629-1000	Date Sampled: 03/01/07
		Date Received: 03/02/07
	Client Contact: Brandon Wilken	Date Extracted: 03/05/07-03/06/07
	Client P.O.:	Date Analyzed: 03/05/07-03/06/07

### Oxygenates and BTEX by GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0703045

Lab ID	0703045-001B	0703045-002B	0703045-003B		Reporting Limit for DF =1
Client ID	MW-1	MW-2	MW-3		
Matrix	W	W	W		
DF	2.5	1	3.3		

Compound	Concentration			ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<1.2	ND	ND<1.7	NA	0.5
Benzene	ND<1.2	ND	20	NA	0.5
t-Butyl alcohol (TBA)	ND<12	ND	ND<17	NA	5.0
1,2-Dibromoethane (EDB)	ND<1.2	ND	ND<1.7	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<1.2	ND	ND<1.7	NA	0.5
Diisopropyl ether (DIPE)	ND<1.2	ND	ND<1.7	NA	0.5
Ethanol	ND<120	ND	ND<170	NA	50
Ethylbenzene	ND<1.2	ND	ND<1.7	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<1.2	ND	ND<1.7	NA	0.5
Methyl-t-butyl ether (MTBE)	78	9.8	100	NA	0.5
Toluene	ND<1.2	ND	ND<1.7	NA	0.5
Xylenes	ND<1.2	ND	ND<1.7	NA	0.5

### Surrogate Recoveries (%)

%SS1:	86	87	87	
%SS2:	108	107	107	
%SS3:	117	118	117	
Comments	i	i	i	

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

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

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.





**QC SUMMARY REPORT FOR SW8015C**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0703045

EPA Method SW8015C		Extraction SW3510C/3630C				BatchID: 26528			Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	102	102	0	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	101	101	0	N/A	N/A	70 - 130	30

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

**BATCH 26528 SUMMARY**

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703045-001A	03/01/07 12:00 PM	03/02/07	03/03/07 1:16 AM	0703045-002A	03/01/07 10:55 AM	03/02/07	03/03/07 2:26 AM
0703045-003A	03/01/07 11:30 AM	03/02/07	03/03/07 5:52 AM				

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

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

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

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

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



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

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0703045

Analyte	EPA Method SW8015Cm		Extraction SW5030B			BatchID: 26544			Spiked Sample ID: 0703044-001A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) <sup>f</sup>	ND	60	107	108	1.22	97.8	97.5	0.253	70 - 130	30	70 - 130	30
MTBE	ND	10	89.3	92.8	3.77	93.5	92.5	1.13	70 - 130	30	70 - 130	30
Benzene	ND	10	105	110	4.70	97.9	97.2	0.758	70 - 130	30	70 - 130	30
Toluene	ND	10	108	112	3.92	98.2	97.4	0.858	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	102	106	3.81	103	102	1.00	70 - 130	30	70 - 130	30
Xylenes	ND	30	113	120	5.71	117	117	0	70 - 130	30	70 - 130	30
%SS:	89	10	90	91	1.88	92	90	2.29	70 - 130	30	70 - 130	30

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

BATCH 26544 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703045-001A	03/01/07 12:00 PM	03/03/07	03/03/07 8:42 AM	0703045-002A	03/01/07 10:55 AM	03/05/07	03/05/07 6:03 PM
0703045-003A	03/01/07 11:30 AM	03/03/07	03/03/07 9:48 AM				

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

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

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

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.





**QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0703045

Analyte	EPA Method SW8260B			Extraction SW5030B			BatchID: 26553			Spiked Sample ID: 0703062-006B			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)				
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
tert-Amyl methyl ether (TAME)	ND	10	102	99.6	2.83	100	96.3	3.76	70 - 130	30	70 - 130	30	
Benzene	ND	10	127	125	1.58	126	124	1.31	70 - 130	30	70 - 130	30	
t-Butyl alcohol (TBA)	ND	50	112	112	0	105	109	4.12	70 - 130	30	70 - 130	30	
Diisopropyl ether (DIPE)	ND	10	111	108	3.26	107	101	5.10	70 - 130	30	70 - 130	30	
Ethanol	ND	500	106	108	2.18	105	101	3.26	70 - 130	30	70 - 130	30	
Ethyl tert-butyl ether (ETBE)	ND	10	104	102	2.74	102	96.7	4.91	70 - 130	30	70 - 130	30	
Methanol	ND	2500	100	102	1.62	102	101	1.24	70 - 130	30	70 - 130	30	
Methyl-t-butyl ether (MTBE)	ND	10	102	100	1.91	101	99.2	2.31	70 - 130	30	70 - 130	30	
Toluene	ND	10	109	102	6.58	108	98.1	9.82	70 - 130	30	70 - 130	30	
%SS1:	84	10	104	103	1.14	103	103	0	70 - 130	30	70 - 130	30	
%SS2:	102	10	89	85	4.72	87	84	3.08	70 - 130	30	70 - 130	30	
%SS3:	115	10	100	101	0.609	100	99	0.714	70 - 130	30	70 - 130	30	

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

**BATCH 26553 SUMMARY**

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703045-001B	03/01/07 12:00 PM	03/05/07	03/05/07 10:53 PM	0703045-002B	03/01/07 10:55 AM	03/05/07	03/05/07 11:38 PM
0703045-003B	03/01/07 11:30 AM	03/06/07	03/06/07 12:23 AM				

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

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

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

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

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.

**ATTACHMENT C**

**Standard Operating Procedures**

# CAMBRIA

## STANDARD FIELD PROCEDURES FOR GROUNDWATER MONITORING AND SAMPLING

This document presents standard field methods for groundwater monitoring, purging and sampling, and well development. These procedures are designed to comply with Federal, State and local regulatory guidelines. Cambria's specific field procedures are summarized below.

### Groundwater Monitoring

Prior to performing monitoring activities, the historical monitoring and analytical data of each monitoring well shall be reviewed to determine if any of the wells are likely to contain non-aqueous phase liquid (NAPL) and to determine the order in which the wells will be monitored (i.e. cleanest to dirtiest). Groundwater monitoring should not be performed when the potential exists for surface water to enter the well (i.e. flooding during a rainstorm).

Prior to monitoring, each well shall be opened and the well cap removed to allow water levels to stabilize and equilibrate. The condition of the well box and well cap shall be observed and recommended repairs noted. Any surface water that may have entered and flooded the well box should be evacuated prior to removing the well cap. In wells with no history of NAPL, the static water level and total well depth shall be measured to the nearest 0.01 foot with an electronic water level meter. Wells with the highest contaminant concentrations shall be monitored last. In wells with a history of NAPL, the NAPL level/thickness and static water level shall be measured to the nearest 0.01 foot using an electronic interface probe. The water level meter and/or interface probe shall be thoroughly cleaned and decontaminated at the beginning of the monitoring event and between each well. Monitoring equipment shall be washed using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water.

### Groundwater Purging and Sampling

Prior to groundwater purging and sampling, the historical analytical data of each monitoring well shall be reviewed to determine the order in which the wells should be purged and sampled (i.e. cleanest to dirtiest). No purging or groundwater sampling shall be performed on wells with a measurable thickness of NAPL or floating NAPL globules. If a sheen is observed, the well should be purged and a groundwater sample collected only if no NAPL is present. Wells shall be purged either by hand using a disposal or PVC bailer or by using an aboveground pump (e.g. peristaltic or Wattera™) or down-hole pump (e.g. Grundfos™ or DC Purger pump).

Groundwater wells shall be purged approximately three to ten well-casing volumes (depending on the regulatory agency requirements) or until groundwater parameters of temperature, pH, and conductivity have stabilized to within 10% for three consecutive readings. Temperature, pH, and conductivity shall be measured and recorded at the start of purging, once per well casing volume removed, and at the completion of purging. The total volume of groundwater removed shall be recorded along with any other notable physical characteristic such as color and odor. If required, field parameters such as turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) shall be measured prior to collection of each groundwater sample.

Groundwater samples shall be collected after the well has been purged and allowed to recharge to 80% of the pre-purging static water level, or if the well is slow to recharge, after waiting a minimum of 2 hours. Groundwater samples shall be collected using clean disposable bailers or pumps (if an operating remediation system exists on site and the project manager approves of its use for sampling) and shall be decanted into clean containers supplied by the analytical laboratory. New latex gloves and disposable tubing or bailers shall be used for sampling each well. If a PVC bailer or down-hole pump is used for groundwater purging, it shall be decontaminated before purging each well by using soapy water consisting of Liqui-nox™ or

# CAMBRIA

Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water. If a submersible pump with non-dedicated discharge tubing is used for groundwater purging, both the inside and outside of pump and discharge tubing shall be decontaminated as described above.

## Sample Handling

Except for samples that will be tested in the field, or that require special handling or preservation, samples shall be stored in coolers chilled to 4° C for shipment to the analytical laboratory. Samples shall be labeled, placed in protective foam sleeves or bubble wrap as needed, stored on crushed ice at or below 4° C, and submitted under chain-of-custody (COC) to the laboratory. The laboratory shall be notified of the sample shipment schedule and arrival time. Samples shall be shipped to the laboratory within a time frame to allow for extraction and analysis to be performed within the standard sample holding times.

Sample labels shall be filled out using indelible ink and must contain the site name; field identification number; the date, time, and location of sample collection; notation of the type of sample; identification of preservatives used; remarks; and the signature of the sampler. Field identification must be sufficient to allow easy cross-reference with the field datasheet.

All samples submitted to the laboratory shall be accompanied by a COC record to ensure adequate documentation. One copy of the COC shall be kept in the QA/QC file and another copy shall be retained in the project file. Information on the COC shall consist of the project name and number; project location; sample numbers; sampler/recorder's signature; date and time of collection of each sample; sample type; analyses requested; name of person receiving the sample; and date of receipt of sample.

Laboratory-supplied trip blanks shall accompany the samples and be analyzed to check for cross-contamination, if requested by the project manager.

## Well Development

Wells shall be developed using a combination of groundwater surging and extraction. A surge block shall be used to swab the well and agitate the groundwater in order to dislodge any fine sediment from the sand pack. After approximately ten minutes of swabbing the well, groundwater shall be extracted from the well using a bailer, pump and/or reverse air-lifting through a pipe to remove the sediments from the well. Alternating surging and extraction shall continue until the sediment volume in the groundwater (i.e. turbidity) is negligible, which typically requires extraction of approximately ten well-casing volumes of groundwater. Preliminary well development usually is performed during well installation prior to placing the sanitary surface seal to ensure sand pack stabilization. Well development that is performed after surface seal installation, should occur 72 hours after seal installation to ensure that the cement has had adequate time to set.

## Waste Handling and Disposal

Groundwater extracted during development and sampling shall be stored onsite in sealed U.S. DOT H17 55-gallon drums. Each drum shall be labeled with the contents, date of generation, generator identification and consultant contact.

H:\- MGT IR Group Info\Report SOPs\Groundwater Monitoring and Sampling SOP.rtf