

NW 2057



release 369379
Exaco 63-232-0395
Tukwila

GROUNDWATER MONITORING REPORT - FOURTH QUARTER 2008

**SHELL-BRANDED SERVICE STATION
13138 INTERURBAN AVENUE
TUKWILA, WASHINGTON**

SAP CODE 120598
INCIDENT NO. 95995044
AGENCY NO. 35848934

rec'd
3-13-09
ecy

entered
CP
3-16-09

**FEBRUARY 20, 2009
REF. NO. 241811 (1)**

This report is printed on recycled paper.

**Prepared by:
Conestoga-Rovers
& Associates**

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1.0 INTRODUCTION

Conestoga-Rovers & Associates, Inc. (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell).

1.1 SITE INFORMATION

Site Address	13138 Interurban Avenue, Tukwila
Site Use	Shell-Branded Service Station
Shell Project Manager	Carol Campagna
CRA Project Manager	Brian Peters
Lead Agency and Contact	Washington State Department of Ecology, Ms. Carrie Pederson
Agency Case No.	35848934
Shell SAP Code:	120598
Shell Incident No.	95995044

There is no agency correspondence on record.

2.0 SITE ACTIVITIES, FINDINGS, AND DISCUSSION

2.1 CURRENT QUARTER'S ACTIVITIES

Blaine Tech Services, Inc. (Blaine) gauged and sampled wells according to the established monitoring program for this site.

CRA prepared a vicinity map (Figure 1) and a groundwater elevation contour and chemical concentration map (Figure 2). CRA prepared Tables 1 and 2 summarizing groundwater monitoring data and laboratory analytical results. Field forms and the laboratory analytical report are included as Appendices A and B, respectively. Appendix C presents additional historical monitoring data.

2.2 CURRENT QUARTER'S FINDINGS

Groundwater Flow Direction	North
Hydraulic Gradient	0.0002 feet/foot
Depth to Water	12.20 to 14.35 feet below top of well casing

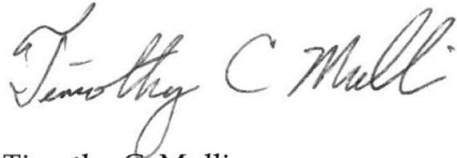
2.3 PROPOSED ACTIVITIES FOR NEXT QUARTER

Blaine will gauge and sample wells during the first month of the second quarter 2009 according to the established monitoring program for this site.

2.4 DISCUSSION

Monitoring wells AGW-1 through AGW-3, and AGW-5 were gauged for depth to groundwater and groundwater samples were collected for laboratory analysis on October 28, 2008. Monitoring well AGW-4 was gauged for depth to water, but was not sampled because separate phase hydrocarbons (SPH) were detected. All analyte concentrations in groundwater sampled from monitoring wells AGW-1 through AGW-3 and AGW-5 were below the Washington State Department of Ecology's Model Toxics Control Act (MTCA) Method A cleanup levels.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES



Timothy C. Mullin



Brian Peters, LG



BRIAN C. PETERS

FIGURES



Former Texaco Service Station

13138 Interurban Avenue South

Tukwila, Washington



**CONESTOGA-ROVERS
& ASSOCIATES**

Vicinity Map

FIGURE

1

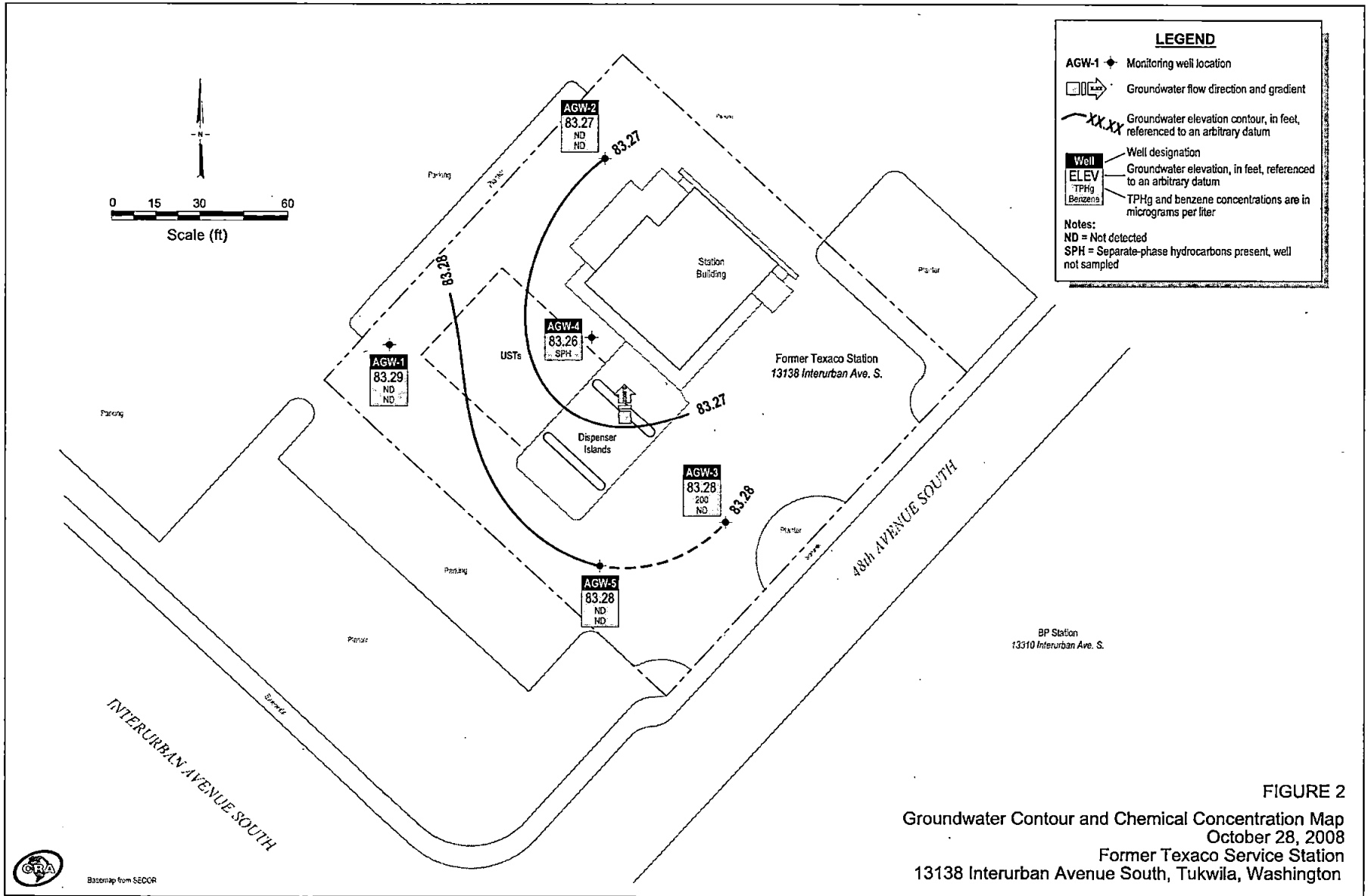


FIGURE 2
 Groundwater Contour and Chemical Concentration Map
 October 28, 2008
 Former Texaco Service Station
 13138 Interurban Avenue South, Tukwila, Washington



Base map from SEDCR

TABLES

TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
BETX, MTBE, AND PETROLEUM HYDROCARBONS
 13138 INTERURBAN AVENUE SOUTH
 TUKWILA, WASHINGTON

Well Number	Date	TOC (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	B (µg/L)	E (µg/L)	T (µg/L)	X (µg/L)	Gasoline-range Hydrocarbons (µg/L)	MTBE (µg/L)
AGW-1	04/12/01	96.38	11.81	84.57	55.3	<0.500	<0.500	2.08	120	<1.00
AGW-1	10/09/01	96.38	13.23	83.15	1.91	<0.500	<0.500	6.34	96.0	<0.500
AGW-1	05/07/02	96.38	11.63	84.75	6.16	0.706	<0.500	15.1	116	---
AGW-1	10/11/02	96.38	12.87	83.51	<1.0	<1.0	<1.0	7.6	<250	---
AGW-1	04/24/03	96.38	11.41	84.97	11	<1	<1	17.3	<250	<1
AGW-1	10/20/03	96.38	12.38	84.00	<1	<1	<1	4.7	<250	---
AGW-1	04/13/04	96.38	12.14	84.24	<5	<5	<5	<5	<1,200	---
AGW-1	11/23/04	96.38	13.19	83.19	<5	<5	<5	<5	<1,200	---
AGW-1	05/26/05	96.38	12.36	84.02	<1	<1	<1	5.4	320	---
AGW-1	10/26/05	96.38	12.63	83.75	<1	<1	<1	3	200	---
AGW-1	04/27/06	96.38	11.97	84.41	0.526	<0.5	<0.5	3.7	130	---
AGW-1	11/20/06	96.38	9.68	86.70	<0.500	<0.500	<0.500	5.63	562 a	6.64
AGW-1	04/16/07	96.38	11.07	85.31	<0.500	<0.500	<0.500	<3.00	89.3	---
AGW-1	10/04/07	96.38	13.73	82.65	<1.00	<1.00	<1.00	<3.00	<250	14.4
AGW-1	04/14/08	96.38	12.30	84.08	<1.00	<1.00	<1.00	<1.00	120	---
AGW-1	10/28/08	96.38	13.09	83.29	<0.5	<1	<1	<1	<100	8.8
AGW-2	04/12/01	95.47	10.92	84.55	---	---	---	---	---	---
AGW-2	10/09/01	95.47	12.35	83.12	---	---	---	---	---	---
AGW-2	04/24/03	95.47	10.47	85.00	<1	<1	<1	<1	<250	<1
AGW-2	10/20/03	95.47	11.56	83.91	<1	<1	<1	<1	<250	---
AGW-2	04/13/04	95.47	11.22	84.25	<5	<5	<5	<5	<1,200	---
AGW-2	11/23/04	95.47	12.24	83.23	<5	<5	<5	<5	<1,200	---
AGW-2	05/26/05	95.47	11.42	84.05	<1	<1	<1	<1	53	---
AGW-2	10/26/05	95.47	11.72	83.75	<1	<1	<1	<1	<50.0	---
AGW-2	04/27/06	95.47	11.04	84.43	<0.5	<0.5	<0.5	<1	<50.0	---
AGW-2	11/20/06	95.47	8.76	86.71	<0.500	<0.500	<0.500	<3.00	<50.0	<5.00
AGW-2	04/16/07	95.47	10.17	85.30	<0.500	<0.500	<0.500	<3.00	<50.0	---
AGW-2	10/04/07	95.47	12.21	83.26	<1.00	<1.00	<1.00	<3.00	<250	<1.00
AGW-2	04/14/08	95.47	11.32	84.15	<1.00	<1.00	<1.00	<1.00	<50	---
AGW-2	10/28/08	95.47	12.20	83.27	<0.5	<1	<1	<1	<100	<1
AGW-3	04/12/01	96.39	11.72	84.67	0.978	<0.500	0.752	3.58	83.9	<1.00
AGW-3	10/09/01	96.39	13.19	83.20	1.60	<0.500	<0.500	2.16	242	---
AGW-3	05/07/02	96.39	11.66	84.73	3.37	<0.500	0.651	4.28	258	---
AGW-3	10/11/02	96.39	12.82	83.57	<1.0	<1.0	<1.0	1	<250	---
AGW-3	04/24/03	96.39	11.44	84.95	8.1	<1	<1	4.7	<250	<1
AGW-3	10/20/03	96.39	12.32	84.07	<1	<1	<1	<1	<250	---
AGW-3	04/13/04	96.39	12.10	84.29	<5	<5	<5	<5	<1,200	---
AGW-3	11/23/04	96.39	13.22	83.17	<1	<1	<1	<1	<250	---
AGW-3	05/26/05	96.39	12.44	83.95	<1	<1	<1	2.8	340	---
AGW-3	10/26/05	96.39	12.56	83.83	<1	<1	<1	2.2	340	---
AGW-3	04/27/06	96.39	11.99	84.40	1.16	<0.5	<0.5	2.62	255	---
AGW-3	11/20/06	96.39	9.69	86.70	<0.500	<0.500	<0.500	<3.00	230	<5.00
AGW-3	04/16/07	96.39	11.06	85.33	<0.500	<0.500	<0.500	3.53	261	---
AGW-3	10/04/07	96.39	13.83	82.56	<1.00	<1.00	<1.00	<3.00	<250	<1.00
AGW-3	04/14/08	96.39	12.29	84.10	<1.00	<1.00	<1.00	2.5	200	---
AGW-3	10/28/08	96.39	13.11	83.28	<0.5	<1	<1	<1	200	<1

TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
BETX, MTBE, AND PETROLEUM HYDROCARBONS
 13138 INTERURBAN AVENUE SOUTH
 TUKWILA, WASHINGTON

Well Number	Date	TOC (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	B (µg/L)	E (µg/L)	T (µg/L)	X (µg/L)	Gasoline-range Hydrocarbons (µg/L)	MTBE (µg/L)
AGW-4	04/12/01	97.61	13.00	84.61	4,090	1,070	634	5,650	28,100	<1.00
AGW-4	10/09/01	97.61	14.48	83.13	9,570	3,520	4,200	20,900	100,000	<0.500
AGW-4	05/07/02	97.61	12.87	84.74	8,010	2,370	1,500	12,600	70,600	---
AGW-4	10/11/02	97.61	14.16	83.45	9,800	2,300	1,900	11,900	76,000	---
AGW-4	04/24/03	97.61	12.63	84.98	8,800	1,800	1,200	12,200	70,000	120
AGW-4	10/20/03	97.61	13.67	83.94	13,000	2,200	1,000	10,300	60,000	---
AGW-4	04/13/04	97.61	13.36	84.25	11,000	2,500	1,300	12,200	77,000	---
AGW-4	11/23/04	97.61	14.42	83.19	13,000	2,100	810	7,400	37,000	---
AGW-4	05/26/05	97.61	13.64	83.97	9,700	2,200	710	9,500	62,000	---
AGW-4	10/26/05	97.61	13.85	83.76	13,000	2,300	1,000	8,400	53,000	---
AGW-4	04/27/06	97.61	13.22	84.39	10,500	2,400	1,660	10,100	81,900	---
AGW-4	11/20/06	97.61	10.89	86.72	6,510	1,900	2,350	8,300	60800 a	<500
AGW-4	04/16/07	97.61	12.31	85.30	11,000	1,680	1,480	12,300	63,300	---
AGW-4	10/04/07	97.61	14.89	82.72	14,200	1,740	1,500	10,500	103,000	22.8
AGW-4	04/14/08	97.61	13.50	84.11	10,000	1,800	1,400	12,000	65,000	---
AGW-4	10/28/08	97.61	14.35	83.26	SPH (0.02 ft.) -- NO SAMPLE TAKEN					
AGW-5	04/12/01	97.35	12.71	84.64	---	---	---	---	---	---
AGW-5	10/09/01	97.35	14.17	83.18	---	---	---	---	---	---
AGW-5	05/07/02	97.35	12.62	84.73	---	---	---	---	---	---
AGW-5	04/16/07	97.35	11.98	85.37	<0.500	<0.500	<0.500	<3.00	<50.0	---
AGW-5	10/04/07	97.35	14.52	82.83	<1.00	<1.00	<1.00	<3.00	<250	<1.00
AGW-5	04/14/08	97.35	13.28	84.07	<1.00	<1.00	<1.00	<1.00	<50	---
AGW-5	10/28/08	97.35	14.07	83.28	<0.5	<1	<1	<1	<100	<1
MTCA Method A Cleanup Level					5	700	1,000	1,000	800	20

Abbreviations and Notes:

Well locations are shown in Figure 2.

TOC = Top of Casing elevations.

Depth to water from top of well casing.

B = benzene, E = ethylbenzene, T = toluene, X = total xylenes. Analyzed using EPA Method 8260B; before November 20, 2006, analyzed by EPA Method 8021B.

Gasoline-range hydrocarbons analyzed using NWTPH-Gx; before November 20, 2006, analyzed by NWTPH-Gx or WTPH-G.

MTBE = methyl tert-butyl ether. Analyzed using EPA Method 8260B; before November 20, 2006, analyzed by EPA Method 8021B or EPA Method 8260B.

µg/L = micrograms per liter

SPH = separate phase hydrocarbons

-- = Not measured

MTCA = Model Toxics Control Act

a = Initial analysis within holding time. Reanalysis for the required dilution was past holding time.

TABLE 2
SUMMARY OF GROUNDWATER MONITORING DATA
OXYGENATES

13138 INTERURBAN AVENUE SOUTH
TUKWILA, WASHINGTON

Well Number	Date	TAME (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)
AGW-1	10/09/01	2.21	<50.0	<1.00	<1.00
AGW-1	11/20/06	<1.00	76.2	<1.00	<1.00
AGW-1	10/04/07	<1.00	30.9	<1.00	<1.00
AGW-1	10/28/08	<2	63	<2	<2
AGW-2	11/20/06	<1.00	<50.0	<1.00	<1.00
AGW-2	10/04/07	<1.00	<20.0	<1.00	<1.00
AGW-2	10/28/08	<2	<10	<2	<2
AGW-3	11/20/06	<1.00	<50.0	<1.00	<1.00
AGW-3	10/04/07	<1.00	<20.0	<1.00	<1.00
AGW-3	10/28/08	<2	<10	<2	<2
AGW-4	10/09/01	<1.00	<50.0	<1.00	<1.00
AGW-4	11/20/06	<100	<5,000	<100	<100
AGW-4	10/04/07	<1.00	231	<1.00	<1.00
AGW-4	10/28/08	SPH -- NO SAMPLE TAKEN			
AGW-5	10/04/07	<1.00	<20.0	<1.00	<1.00
AGW-5	10/28/08	<2	<10	<2	<2

Abbreviations and Notes:

Well locations are shown in Figure 2.
TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B,
before November 20, 2006, method unknown.
TBA = Tertiary-butanol analyzed by EPA Method 8260B,
before November 20, 2006, method unknown.
DIPE = Di-isopropyl ether analyzed by EPA Method 8260B,
before November 20, 2006, method unknown.
ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B,
before November 20, 2006, method unknown.
µg/L = micrograms per liter

APPENDIX A

BLAINE TECH SERVICES, INC. -
GROUNDWATER MONITORING REPORT

LAB (LOCATION)

- ☒ CALSCIENCE ()
- ☐ SPL Houston ()
- ☐ XENCO ()
- ☐ TEST AMERICA ()
- ☐ OTHER ()



Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box:			Print Bill To Contact Name:		INCIDENT # (ENV SERVICES)		☐ CHECK IF NO INCIDENT # APPLIES	
☒ ENV. SERVICES	☐ MOTIVA RETAIL	☐ SHELL RETAIL	Carol Compagna		9 5 9 9 5 0 4 4		DATE: 10/25/08	
☐ MOTIVA SD&M	☐ CONSULTANT	☐ LUBES	PO #		SAP #		PAGE: 1 of 1	
☐ SHELL PIPELINE	☐ OTHER							

SAMPLING COMPANY:		LOG CODE:		SITE ADDRESS: Street and City		State		GLOBAL ID NO	
Blaine Tech Services				13138 Interurban Ave S, Tukwilla		WA		NA	
ADDRESS				EDF DELIVERABLE TO (Name, Company, Office Location)		PHONE NO:		E-MAIL:	
1680 Rogers Avenues, San Jose, Ca				Christine Schweigert, CRA, Everett		425-212-5100		cschweigert@CRAworld.com	
PROJECT CONTACT (Hardcopy or PDF Report to)		Eric Morse		SAMPLER NAME (ID CARD)		LAB USE ONLY		CONSULTANT PROJECT NO:	
TELEPHONE		FAX		E-MAIL:				08028-513	
916-925-2913x102		916-925-2891		emorse@blainetech.com					

TURN AROUND TIME (CALENDAR DAYS):

☒ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES :

See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for minimum detection limits

- ☒ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☒ RECEIPT VERIFICATION REQUESTED

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	NWTPH-OX	NWTPH-Dx w/Silica Gel Cleanup	BTEX (8260B)	5 Oxygenates, MTBE, TBA, DIPE, TAME, ETBE (8260B)	EDB, EDC (8260B)	Total Lead (6020)	PCBs (8082)	PAHs (8070 SIM)	VOCs Full list (8260B)	Pest (8080)	NWTPH-VPH	NWTPH-EPH	n-Hexane (9071B)	TEMPERATURE ON RECEIPT °C	Container PID Readings or Laboratory Notes	
		DATE	TIME		HCL	HN03	H2SO4	NONE	OTHER																	
	AGW-1	10/24/08	1115	W	X						X	X	X	X	X											
	AGW-2		1105	W	X						X	X	X	X	X											
	AGW-3		1125	W	X						X	X	X	X	X											
	AGW-4			W	X						X	X	X	X	X											
	AGW-5		1050	W	X						X	X	X	X	X											

Requisitioned by: (Signature)	Received by: (Signature)	Date:	Time:
Requisitioned by: (Signature)	Received by: (Signature)	Date:	Time:
Requisitioned by: (Signature)	Received by: (Signature)	Date:	Time:

WELLHEAD INSPECTION FORM

Client: Shell Site: 95995044 Date: 10/28/08
Job #: 081028513 Technician: SL Page 1 of 1

[illegible]

Notes:

WELL GAUGING DATA

~~Project #~~

081028-513

~~Date~~

10/28/08

Client

Shell

Site

13138 Interurban Tkw-18

[illegible]

SHELL WELL MONITORING DATA SHEET

BTS #: 081028-5L3	Site: 95995044
Sampler: GL	Date: 10/28/08
Well I.D.: AGW-1	Well Diameter: 2 3 4 6 8
Total Well Depth (TD): 19.40	Depth to Water (DTW): 13.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ~~Bailer~~ Disposable Bailer Positive Air Displacement Electric Submersible

Water: ~~Peristaltic~~ Extraction Pump Other

Sampling Method: ~~Bailer~~ Disposable Bailer Extraction Port Dedicated Tubing

Other:

(Gals.) X = Gals.			Well Diameter	Multiplier	Well Diameter	Multiplier
I Case Volume	Specified Volumes	Calculated Volume	1"	0.04	4"	0.65
			2"	0.16	6"	1.47
			3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1115	58.7	6.25	694	11		

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 10/28/08 Sampling Time: 1115 Depth to Water:

Sample I.D.: AGW-1 Laboratory: STL SPL Other: Cal Science

Analyzed for: TPH-G BTEX MTBE TPH-D Org's 1,2-DCA EDB Other: See col

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Org's 1,2-DCA EDB Other:

D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 081028-5L5	Site: 95995044
Sampler: GL	Date: 10/28/08
Well I.D.: AGW-2	Well Diameter: 2 3 (4) 6 8
Total Well Depth (TD): 19.42	Depth to Water (DTW): 12.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ~~Bailer~~ ~~Disposable Bailer~~ ~~Positive Air Displacement~~ ~~Electric Submersible~~ ~~Water~~ ~~Peristaltic~~ ~~Extraction Pump~~ Other: ~~Other~~

Sampling Method: ~~Bailer~~ ~~Disposable Bailer~~ ~~Extraction Port~~ ~~Dedicated Tubing~~ Other: Other:

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Case Volume (Gals.) X Specified Volumes = Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1105	57.1	6.26	812	15		

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 10/28/08 Sampling Time: 1105 Depth to Water:

Sample I.D.: AGW-2 Laboratory: STL SPL Other: Calscience

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other: See col

EB I.D. (if applicable): @ Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 081028-SL3	Site: 95995044
Sampler: GL	Date: 10/28/08
Well I.D.: AGW-3	Well Diameter: 2 3 4 6 8
Total Well Depth (TD): 19.40	Depth to Water (DTW): 13.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ☒ Bailer ☐ Disposable Bailer ☐ Positive Air Displacement ☐ Electric Submersible

Water: ☒ Peristaltic ☐ Extraction Pump ☐ Other

Sampling Method: ☒ Bailer ☐ Disposable Bailer ☐ Extraction Port ☐ Dedicated Tubing

Other:

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other:	radius ² * 0.163

(Gals.) X	=	Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1125	59.8	6.24	541	15		

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 10/28/08 Sampling Time: 1125 Depth to Water:

Sample I.D.: AGW-3 Laboratory: STL SPL Other: Calscience

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other: See col

EB I.D. (if applicable): @ Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>081028-SL3</u>	Site: <u>95995044</u>
Sampler: <u>GL</u>	Date: <u>10/28/08</u>
Well I.D.: <u>AGW-4</u>	Well Diameter: 2 3 4 6 8 <u> </u>
Total Well Depth (TD): <u>20.20</u>	Depth to Water (DTW): <u>14.35</u>
Depth to Free Product: <u>14.33</u>	Thickness of Free Product (feet): <u> </u>
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ~~Bailer~~

~~Disposable Bailer~~
~~Positive Air Displacement~~
~~Electric Submersible~~

~~Waterma~~
~~Peristaltic~~
~~Extraction Pump~~
 Other:

Sampling Method: ~~Bailer~~

~~Disposable Bailer~~
~~Extraction Port~~
~~Dedicated Tubing~~

Other:

(Gals.) X = Gals.			Well Diameter	Multiplier	Well Diameter	Multiplier
1 Case Volume	Specified Volumes	Calculated Volume	1"	0.04	4"	0.65
			2"	0.16	6"	1.47
			3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
						<u>Att encountered in Bailer</u>
						<u>→ measured w/ TP</u>
						<u>No Sample</u>

Did well dewater? Yes No	Gallons actually evacuated:
Sampling Date: <u>10/28/08</u>	Sampling Time: <u> </u> Depth to Water: <u> </u>
Sample I.D.: <u>AGW-</u>	Laboratory: STL SPL Other: <u>Cal Science</u>
Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other: <u>See col</u>	
EB I.D. (if applicable): <u> </u> @ <u> </u> Time	Duplicate I.D. (if applicable): <u> </u>
Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other: <u> </u>	
D.O. (if req'd): Pre-purge: <u> </u> mg/L	Post-purge: <u> </u> mg/L
O.R.P. (if req'd): Pre-purge: <u> </u> mV	Post-purge: <u> </u> mV

SHELL WELL MONITORING DATA SHEET

BTS #: 081028-SLS	Site: 95995044
Sampler: GL	Date: 10/28/08
Well I.D.: AGW-5	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 19.91	Depth to Water (DTW): 1407
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: ~~Bailer~~
 Disposable Bailer
 Positive Air Displacement
 Electric Submersible

~~Water~~
 Peristaltic
 Extraction Pump
 Other

Sampling Method: ~~Bailer~~
 Disposable Bailer
 Extraction Port
 Dedicated Tubing

Other:

(Gals.) X = Gals.			Well Diameter	Multiplier	Well Diameter	Multiplier
1 Case Volume	Specified Volumes	Calculated Volume	1"	0.04	4"	0.65
			2"	0.16	6"	1.47
			3"	0.37	Other	radius * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1050	57.9	6.09	678	14		

Did well dewater? Yes No Gallons actually evacuated:

Sampling Date: 10/28/08 Sampling Time: 1050 Depth to Water:

Sample I.D.: AGW-5 Laboratory: STL SPL Other: Cal Science

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other: See COL

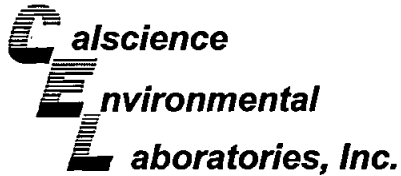
EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxy's 1,2-DCA EDB Other:

D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV

APPENDIX B

LABORATORY ANALYSIS REPORT



November 13, 2008

Eric Morse
Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject: **Calscience Work Order No.: 08-10-2637**
Client Reference: **13138 Interurban Ave., S. Tukwilla, WA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/30/2008 and analyzed in accordance with the attached chain-of-custody.

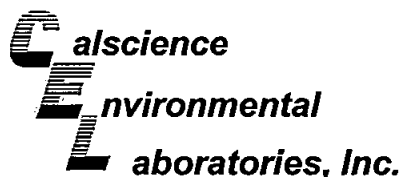
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Jessie Kim", written over a horizontal line.

Calscience Environmental
Laboratories, Inc.
Jessie Kim
Project Manager



Analytical Report



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: NWTPh-Gx

Project: 13138 Interurban Ave., S. Tukwilla, WA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AGW-1	08-10-2637-1-C	10/28/08 11:15	Aqueous	GC 24	10/30/08	10/30/08 21:27	081030B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	38-134	

AGW-2	08-10-2637-2-C	10/28/08 11:05	Aqueous	GC 24	10/30/08	10/30/08 23:07	081030B01
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	81	38-134	

AGW-3	08-10-2637-3-C	10/28/08 11:25	Aqueous	GC 24	10/30/08	10/30/08 23:41	081030B01
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	200	100	1		ug/L

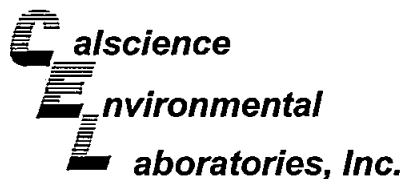
Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	81	38-134	

AGW-5	08-10-2637-4-C	10/28/08 10:50	Aqueous	GC 24	10/30/08	10/31/08 00:14	081030B01
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	78	38-134	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: NWTPH-Gx

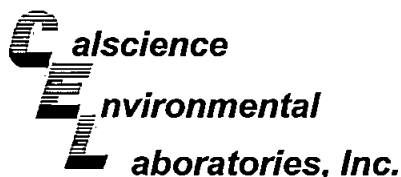
Project: 13138 Interurban Ave., S. Tukwilla, WA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-743-44	N/A	Aqueous	GC 24	10/30/08	10/30/08 19:47	081030B01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	100	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	82	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: 13138 Interurban Ave., S. Tukwilla, WA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AGW-1	08-10-2637-1-B	10/28/08 11:15	Aqueous	GC/MS LL	11/06/08	11/06/08 20:42	081106L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	8.8	1.0	1	
Ethylbenzene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	63	10	1	
Toluene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
o-Xylene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	100	82-130			1,2-Dichloroethane-d4	96	75-141		
Toluene-d8	98	83-113			1,4-Bromofluorobenzene	100	70-118		

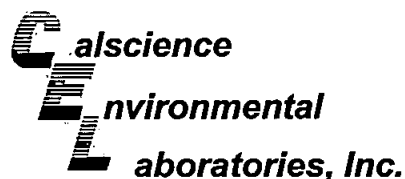
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AGW-2	08-10-2637-2-B	10/28/08 11:05	Aqueous	GC/MS LL	11/06/08	11/06/08 21:09	081106L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Toluene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
o-Xylene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	100	82-130			1,2-Dichloroethane-d4	98	75-141		
Toluene-d8	98	83-113			1,4-Bromofluorobenzene	99	70-118		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AGW-3	08-10-2637-3-B	10/28/08 11:25	Aqueous	GC/MS LL	11/06/08	11/06/08 21:36	081106L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Toluene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
o-Xylene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	102	82-130			1,2-Dichloroethane-d4	101	75-141		
Toluene-d8	101	83-113			1,4-Bromofluorobenzene	102	70-118		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: 13138 Interurban Ave., S. Tukwilla, WA

Page 2 of 2

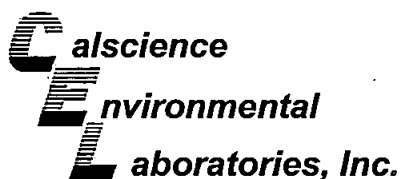
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AGW-5	08-10-2637-4-A	10/28/08 10:50	Aqueous	GC/MS LL	11/06/08	11/06/08 22:03	081106L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Toluene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
o-Xylene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	104	82-130			1,2-Dichloroethane-d4	101	75-141		
Toluene-d8	103	83-113			1,4-Bromofluorobenzene	98	70-118		

Method Blank	099-10-006-27,413	N/A	Aqueous	GC/MS LL	11/06/08	11/06/08 16:11	081106L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Toluene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
p/m-Xylene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
o-Xylene	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	102	82-130			1,2-Dichloroethane-d4	101	75-141		
Toluene-d8	103	83-113			1,4-Bromofluorobenzene	96	70-118		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Quality Control - Spike/Spike Duplicate



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

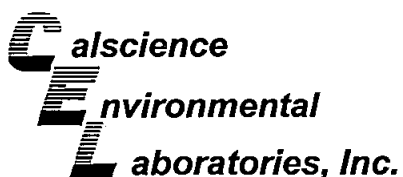
Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: NWTPH-Gx

Project 13138 Interurban Ave., S. Tukwilla, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
AGW-1	Aqueous	GC 24	10/30/08	10/30/08	081030S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	89	88	68-122	1	0-18	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

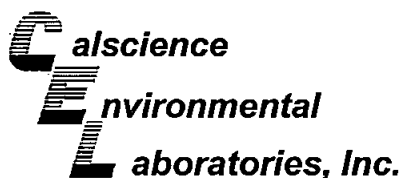
Date Received: 10/30/08
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: EPA 8260B

Project 13138 Interurban Ave., S. Tukwilla, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-11-0212-1	Aqueous	GC/MS LL	11/06/08	11/06/08	081106S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	97	98	88-118	1	0-7	
Carbon Tetrachloride	96	96	67-145	1	0-11	
Chlorobenzene	99	100	88-118	0	0-7	
1,2-Dibromoethane	101	102	70-130	1	0-30	
1,2-Dichlorobenzene	101	104	86-116	2	0-8	
1,1-Dichloroethene	95	95	70-130	1	0-25	
Ethylbenzene	101	104	70-130	2	0-30	
Toluene	96	98	87-123	2	0-8	
Trichloroethene	93	95	79-127	2	0-10	
Vinyl Chloride	93	93	69-129	1	0-13	
Methyl-t-Butyl Ether (MTBE)	39	46	71-131	1	0-13	3
Tert-Butyl Alcohol (TBA)	75	56	36-168	4	0-45	
Diisopropyl Ether (DIPE)	103	103	81-123	0	0-9	
Ethyl-t-Butyl Ether (ETBE)	103	103	72-126	0	0-12	
Tert-Amyl-Methyl Ether (TAME)	105	106	72-126	1	0-12	
Ethanol	88	79	53-149	10	0-31	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: N/A
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: NWTPH-Gx

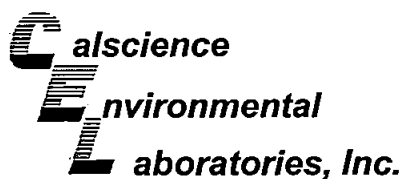
Project: 13138 Interurban Ave., S. Tukwilla, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-743-44	Aqueous	GC 24	10/30/08	10/30/08	081030B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	90	89	78-120	1	0-10	

RPD - Relative Percent Difference, CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



Quality Control - LCS/LCS Duplicate



Blaine Tech Services, Inc.
1680 Rogers Avenue
San Jose, CA 95112-1105

Date Received: N/A
Work Order No: 08-10-2637
Preparation: EPA 5030B
Method: EPA 8260B

Project: 13138 Interurban Ave., S. Tukwilla, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-10-006-27,413	Aqueous	GC/MS LL	11/06/08	11/06/08	081106L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	95	99	84-120	78-126	4	0-8	
Carbon Tetrachloride	92	97	63-147	49-161	5	0-10	
Chlorobenzene	96	99	89-119	84-124	4	0-7	
1,2-Dibromoethane	99	101	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	100	100	89-119	84-124	0	0-9	
1,1-Dichloroethene	93	99	77-125	69-133	6	0-16	
Ethylbenzene	100	103	80-120	73-127	3	0-20	
Toluene	95	98	83-125	76-132	3	0-9	
Trichloroethene	97	98	89-119	84-124	2	0-8	
Vinyl Chloride	86	88	63-135	51-147	2	0-13	
Methyl-t-Butyl Ether (MTBE)	99	101	82-118	76-124	3	0-13	
Tert-Butyl Alcohol (TBA)	99	104	46-154	28-172	5	0-32	
Diisopropyl Ether (DIPE)	100	101	81-123	74-130	1	0-11	
Ethyl-t-Butyl Ether (ETBE)	100	102	74-122	66-130	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	103	105	76-124	68-132	2	0-10	
Ethanol	83	86	60-138	47-151	4	0-32	

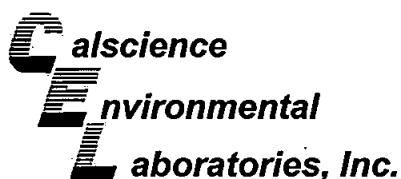
Total number of LCS compounds : 16

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Glossary of Terms and Qualifiers



Work Order Number: 08-10-2637

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Page 12

LAB (LOCATION)
 CALSCIENCE ()
 SPL Houston ()
 XENCO ()
 TEST AMERICA ()
 OTHER ()



Shell Oil Products Chain Of Custody Record

Please Check Appropriate Box

☒ ENV. SERVICES	☐ MOTIVA RETAIL	☐ SHELL RETAIL
☐ MOTIVA SD&M	☐ CONSULTANT	☐ LUBES
☐ SHELL PIPELINE	☐ OTHER _____	

Print Bill To Contact Name: **Carol Compagna**

INCIDENT # (ENV. SERVICES) **9 5 9 9 5 0 4 4**

PO # _____ SAP # _____

DATE: **10/28/08**

PAGE: **1** of **1**

SAMPLING COMPANY: **Blaine Tech Services**

ADDRESS: **1680 Rogers Avenues, San Jose, Ca**

PROJECT CONTACT (hardcopy or PDF Report to): **Eric Morse**

TELEPHONE: **916-925-2913x102** FAX: **916-925-2891** EMAIL: **emorse@blainetech.com**

SITE ADDRESS: Street and City: **13138 Interurban Ave S, Tukwilla**

State: **WA** LOCAL ID NO: **NA**

EDF DELIVERABLE TO (Name, Company, Office Location): **Christine Schweigert, CRA, Everett**

PHONE NO: **425-212-5100** EMAIL: **cschweigert@CRAworld.com**

CONSULTANT PROJECT NO.: **08028-SL3**

TURN AROUND TIME (CALENDAR DAYS):

☒ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS

☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SAMPLER NAME(S) (if any): **S. LANE**

LAB USE ONLY: **08-10-2637**

SPECIAL INSTRUCTIONS OR NOTES :

See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for minimum detection limits

☒ SHELL CONTRACT RATE APPLIES

☐ STATE REIMBURSEMENT RATE APPLIES

☐ EDD NOT NEEDED

☒ RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	NWTPH-GX	NWTPH-DX	BTEX (8260)	5 Oxygenat DIPE, TAME	EDB, EDC (	Total Lead	PCBs (8082)	PAHs (8070	VOCs Full I	Pest (8080)	NWTPH-VPI	NWTPH-EPI	n-Hexane (5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Relinquished by: (Signature)	Received by: (Signature) _____	Date: _____	Time: _____
Relinquished by: (Signature) _____	Received by: (Signature) _____	Date: _____	Time: _____
Relinquished by: (Signature) Federal 866863765215, 5204	Received by: (Signature)	Date: 10/30/08	Time: 1000

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Blaine Tech

DATE: 10/30/08

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature 3.0 °C + 1.8°C (CF) = 4.8 °C ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Initial: YF

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present

Initial: YF

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present

Initial: RN

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	☒	☐	☐
Sampler's name indicated on COC.....	☒	☐	☐
Sample container label(s) consistent with COC.....	☒	☐	☐
Sample container(s) intact and good condition.....	☒	☐	☐
Correct containers and volume for analyses requested.....	☒	☐	☐
Proper preservation noted on sample label(s).....	☒	☐	☐
Volatile analysis container(s) free of headspace.....	☒	☐	☐
Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve ☐ EnCores® ☐ TerraCores® ☐ _____

Water: ☐ VOA ☒ VOA³h ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBpo₄ ☐ 1AGB ☐ 1AGBna₂

☐ 1AGBs ☐ 500AGB ☐ 500AGBs ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 500PB ☐ 500PBna ☐ 250PB

☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PBsterile ☐ 100PBna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Summa® ☐ _____

Checked/Labeled by: RN

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Reviewed by: WJC

Preservative: h:HCL n:HNO₃ na₂:Na₂S₂O₃ na:NaOH po₄:H₃PO₄ s:H₂SO₄ znna:ZnAc₂+NaOH

Scanned by: RN

APPENDIX C

HISTORICAL GROUNDWATER MONITORING DATA

Historical Groundwater Data: Cumulative Summary of Groundwater Elevations
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number/ TOC Elevation	Date of Measurement	DTW (feet)	DTFP (feet)	FPT (feet)	SWL (feet)	Change in SWL (feet)
AGW-1 96.38	4/23/1997	9.63	0.00	0.00	86.75	—
	7/14/1997	12.20	0.00	0.00	84.18	-2.57
	10/22/1997	12.31	0.00	0.00	84.07	-0.11
	1/22/1998	10.30	0.00	0.00	86.08	2.01
	4/9/1998	12.04	0.00	0.00	84.34	-1.74
	7/14/1998	12.51	0.00	0.00	83.87	-0.47
	5/11/1999	13.17	0.00	0.00	83.21	-0.66
	11/3/1999	14.49	0.00	0.00	81.89	-1.32
	5/13/2000	11.90	0.00	0.00	84.48	2.59
	10/21/2000	12.55	0.00	0.00	83.83	-0.65
	4/12/2001	11.81	0.00	0.00	84.57	0.74
	10/9/2001	13.23	0.00	0.00	83.15	-1.42
	5/7/2002	11.63	0.00	0.00	84.75	1.60
AGW-2 95.47	4/23/1997	9.76	0.00	0.00	85.71	—
	7/14/1997	11.30	0.00	0.00	84.17	-1.54
	10/22/1997	11.36	0.00	0.00	84.11	-0.06
	1/22/1998	9.40	0.00	0.00	86.07	1.96
	4/9/1998	11.18	0.00	0.00	84.29	-1.78
	7/14/1998	11.67	0.00	0.00	83.80	-0.49
	5/11/1999	12.25	0.00	0.00	83.22	-0.58
	11/3/1999	13.53	0.00	0.00	81.94	-1.28
	5/13/2000	11.03	0.00	0.00	84.44	2.50
	10/21/2000	11.64	0.00	0.00	83.83	-0.61
	4/12/2001	10.92	0.00	0.00	84.55	0.72
	10/9/2001	12.35	0.00	0.00	83.12	-1.43
	5/7/2002	—	—	—	—	—
AGW-3 96.39	4/23/1997	9.50	0.00	0.00	86.89	—
	7/14/1997	12.28	0.00	0.00	84.11	-2.78
	10/22/1997	12.35	0.00	0.00	84.04	-0.07
	1/22/1998	10.25	0.00	0.00	86.14	2.10
	4/9/1998	12.02	0.00	0.00	84.37	-1.77
	7/14/1998	12.49	0.00	0.00	83.90	-0.47
	5/11/1999	13.18	0.00	0.00	83.21	-0.69
	11/3/1999	14.60	0.00	0.00	81.79	-1.42
	5/13/2000	9.01	0.00	0.00	87.38	5.59
	10/21/2000	12.51	0.00	0.00	83.88	-3.50
	4/12/2001	11.72	0.00	0.00	84.67	0.79
	10/9/2001	13.19	0.00	0.00	83.20	-1.47
	5/7/2002	11.66	0.00	0.00	84.73	1.53

Historical Groundwater Data: Cumulative Summary of Groundwater Elevations
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number/ TOC Elevation	Date of Measurement	DTW (feet)	DTFP (feet)	FPT (feet)	SWL (feet)	Change in SWL (feet)
AGW-4 97.61	4/23/1997	10.95	0.00	0.00	86.66	—
	7/14/1997	13.70	0.00	0.00	83.91	-2.75
	10/22/1997	13.43	0.00	0.00	84.18	0.27
	1/22/1998	11.53	0.00	0.00	86.08	1.90
	4/9/1998	13.58	0.00	0.00	84.03	-2.05
	7/14/1998	14.02	0.00	0.00	83.59	-0.44
	5/11/1999	14.46	0.00	0.00	83.15	-0.44
	11/3/1999	15.88	0.00	0.00	81.73	-1.42
	5/13/2000	13.14	0.00	0.00	84.47	2.74
	10/21/2000	13.81	0.00	0.00	83.80	-0.67
	4/12/2001	13.00	0.00	0.00	84.61	0.81
	10/9/2001	14.48	0.00	0.00	83.13	-1.48
	5/7/2002	12.87	0.00	0.00	84.74	1.61
AGW-5 97.35	4/23/1997	10.52	0.00	0.00	86.83	—
	7/14/1997	13.25	0.00	0.00	84.10	-2.73
	10/22/1997	13.35	0.00	0.00	84.00	-0.10
	1/22/1998	11.20	0.00	0.00	86.15	2.15
	4/9/1998	13.00	0.00	0.00	84.35	-1.80
	7/14/1998	13.48	0.00	0.00	83.67	-0.48
	5/11/1999	14.19	0.00	0.00	83.16	-0.71
	11/3/1999	15.56	0.00	0.00	81.79	-1.37
	5/13/2000	12.87	0.00	0.00	84.48	2.69
	10/21/2000	13.45	0.00	0.00	83.90	-0.58
	4/12/2001	12.71	0.00	0.00	84.64	0.74
	10/9/2001	14.17	0.00	0.00	83.18	-1.46
	5/7/2002	12.62	0.00	0.00	84.73	1.55

TOC = Top of casing.
DTW = Depth to water.
DTFP = Depth to free product
FPT = Free product thickness.
SWL = Static water level.
— = Not monitored.

Historical Groundwater Data: Cumulative Summary of Groundwater Sample Analytical Results
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number	Sample Date	BTEX (µg/L)				TPH-G (µg/L)	MTBE (µg/L)
		Benzene	Toluene	Ethyl-benzene	Total Xylenes		
AGW-1	4/23/1997	728	113	0.65	47.5	439	--
	7/14/1997	425	53	ND	44.6	960	--
	10/22/1997	320	31.1	ND	13.9	ND	--
	1/22/1998	752	53.5	ND	28.1	ND	--
	4/9/1998	371	58.1	ND	ND	ND	--
	7/14/1998	309	16.8	ND	9.51	ND	--
	5/11/1999	429	8.75	<5.0	22.9	<500	<50
	11/3/1999	207	1.78	<0.5	7.86	75.1	--
	5/13/2000	262	0.96	0.87	8.15	<250	--
	10/21/2000	130	<2.50	<2.50	8.12	362	--
	4/12/2001	55.3	<0.500	<0.500	2.08	120	<1.00
	10/9/2001	1.91	<0.500	<0.500	6.34	96.0	<0.500
	5/7/2002	6.16	<0.500	0.706	15.1	116	--
AGW-2	4/23/1997	ND	ND	ND	ND	ND	--
	7/14/1997	ND	ND	ND	ND	ND	--
	10/22/1997	ND	ND	ND	ND	ND	--
	1/22/1998	ND	ND	ND	ND	ND	--
	4/9/1998	ND	ND	ND	ND	ND	--
	7/14/1998	ND	ND	ND	ND	ND	--
	5/11/1999	--	--	--	--	--	--
	11/3/1999	--	--	--	--	--	--
	5/13/2000	--	--	--	--	--	--
	10/21/2000	--	--	--	--	--	--
	4/12/2001	--	--	--	--	--	--
	10/9/2001	--	--	--	--	--	--
	5/7/2002	--	--	--	--	--	--
AGW-3	4/23/1997	12.8	0.591	ND	6.76	ND	--
	7/14/1997	38.9	1.6	0.504	18	363	--
	10/22/1997	6.35	1.14	ND	11.4	83.9	--
	1/22/1998	16.5	1.06	ND	5.68	65.9	--
	4/9/1998	12.2	ND	ND	12.4	ND	--
	7/14/1998	ND	1.24	ND	11.2	79.5	--
	5/11/1999	5.65	0.93	<0.5	10.4	<50	<25
	11/3/1999	<3.38	1.51	<0.5	3.79	72.1	--
	5/13/2000	14.6	1.69	0.70	9.3	92.1	--
	10/21/2000	<2.53	<0.660	<0.500	2.46	189	--
	4/12/2001	0.978	0.752	<0.500	3.58	83.9	<1.00
	10/9/2001	1.60	<0.500	<0.500	2.16	242	--
	5/7/2002	3.37	0.651	<0.500	4.28	258	--

Historical Groundwater Data: Cumulative Summary of Groundwater Sample Analytical Results
Texaco-Branded Station SAP No. 120598
13138 Interurban Avenue South, Tukwila, Washington

Well Number	Sample Date	BTEX (µg/L)				TPH-G (µg/L)	MTBE (µg/L)
		Benzene	Toluene	Ethyl-benzene	Total Xylenes		
AGW-4	4/23/1997	--	--	--	--	--	--
	7/14/1997	--	--	--	--	--	--
	10/22/1997	--	--	--	--	--	--
	1/22/1998	--	--	--	--	--	--
	4/9/1998	--	--	--	--	--	--
	7/14/1998	--	--	--	--	--	--
	5/11/1999	9,830	10,500	3,440	22,200	129,000	<2,500
	11/3/1999	8,280	5,600	2,320	13,800	86,300	--
	5/13/2000	9,000	4,550	2,560	15,100	74,300	--
	10/21/2000	8,930	3,830	2,320	13,200	68,700	--
	4/12/2001	4,090	634	1,070	5,650	28,100	<1.00
	10/9/2001	9,570	4,200	3,520	20,900	100,000	<0.500
	5/7/2002	8,010	1,500	2,370	12,600	70,600	--
AGW-5	4/23/1997	ND	ND	ND	ND	ND	--
	7/14/1997	ND	ND	ND	ND	ND	--
	10/22/1997	ND	ND	ND	ND	ND	--
	1/22/1998	ND	ND	ND	ND	ND	--
	4/9/1998	ND	ND	ND	ND	ND	--
	7/14/1998	ND	ND	ND	ND	ND	--
	5/11/1999	--	--	--	--	--	--
	11/3/1999	--	--	--	--	--	--
	5/13/2000	--	--	--	--	--	--
	10/21/2000	--	--	--	--	--	--
	4/12/2001	--	--	--	--	--	--
	10/9/2001	--	--	--	--	--	--
	5/7/2002	--	--	--	--	--	--
Current Quarter Quality Assurance/Quality Control Samples							
AGW-4 (Duplicate)		9,410	1,760	2,820	14,800	74,300	--
Trip Blank		<0.500	<0.500	<0.500	<1.00	<50.0	--

µg/L = Micrograms per liter; approximate parts per billion.

-- = Not sampled or not analyzed.

TPH-G = Analytical Method changed to NW-TPH-Gx in 2000.

Benzene, toluene, ethylbenzene, and total xylene (BTEX) analysis by EPA 8021B.

ND = Not detected at a concentration above laboratory method reporting limit as previously reported by others.

The exact laboratory method reporting limits were not available to SECOR.

Historical Groundwater Data: Summary of Volatile Organic Compounds Analytical Results
Texaco Station SAP No. 120598
13138 Interurban Avenue, Tukwila, WA

Well Number	Sample Date	Ethanol (mg/L)	1,2-Dibromoethane (mg/L)	1,2-Dichloroethane (mg/L)	Diisopropyl Ether (mg/L)	Ethyl tert-butyl ether (mg/L)	Methyl tert-butyl ether (mg/L)	tert-Amyl Methyl Ether (mg/L)	tert-Butyl Alcohol (mg/L)
AGW-1	10/09/01	--	--	--	<1.00	<1.00	<0.500	2.21	<50.0
AGW-4	10/09/01	--	--	--	<1.00	<1.00	<0.500	<1.00	<50.0

µg/L = Micrograms per liter; approximate parts per billion.

-- = Not sampled or not analyzed.



**CONESTOGA-ROVERS
& ASSOCIATES**

526 Commerce Center - Building B
1420 80th Street SW, Suite A
Everett, Washington 98203
Telephone: (425) 212-5100 Fax: (425) 212-5199
www.CRAworld.com

TRANSMITTAL

DATE: March 11, 2009 REFERENCE NO.: 241811
PROJECT NAME: 13138 Interurban Ave., Tukwila, WA
TO: Carrie Pederson
Department of Ecology
3190 160th Ave. SE
Bellevue, WA 98008-5452

Please find enclosed: ☐ Draft ☒ Final
☐ Originals ☐ Other
☐ Prints
Sent via: ☒ Mail ☐ Same Day Courier
☐ Overnight Courier ☒ Other Livelinek

QUANTITY	DESCRIPTION
1	Groundwater Monitoring Report - First Quarter 2009

☒ As Requested ☐ For Review and Comment
☐ For Your Use ☐
☐

COMMENTS:

Copy to: Ms. Carol Campagna, Shell Oil
Products US
Completed by: Andy Leung Signed: 
[Please Print]

Filing: Correspondence File