US West
Auburn
Release 4198
VCP NW 2398

APR 05 2011

DEPT OF ECOLOGY
TCP-NWRO

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March 30, 2011

Mr. Thomas Pitts
Qwest Communications Corporation
1600 7th Avenue, Room 712
Seattle, Washington, 98191

Subject: Groundwater Sampling Report, Qwest – Auburn Facility
25 30th Street Northwest
Auburn, WA

Dear Mr. Pitts:

Geosyntec Consultants (Geosyntec) is pleased to submit this Groundwater Sampling Report to Qwest Communications Corporation (Qwest) describing activities performed at the Qwest – Auburn Garage Service Operations Center (the Site). This report covers activities conducted at the Site on 08 February 2011.

SITE ACTIVITIES

Geosyntec conducted depth-to-groundwater measurements at a total of eight groundwater monitoring wells and two former air-injection wells. Table 1 provides the top of well casing elevations and groundwater elevations at each well. Figure 1 provides an illustration of the site groundwater levels.

Groundwater in each well was purged using low-flow technique, with depth-to-groundwater levels and water quality parameters (temperature, pH, oxidation-reduction potential, dissolved oxygen, conductivity and turbidity) monitored throughout purging. Each well was sampled using dedicated polyethylene tubing placed approximately at the mid-point between the bottom of each well and the initial water level. Samples for analytical analysis were taken when water quality parameters stabilized for three consecutive readings spaced at three-minute intervals. A duplicate sample was obtained from former air-injection well AIW-2 for quality assurance/quality control (QA/QC). Attachment A contains copies of the groundwater monitoring well purging and sampling logs. The investigator derived waste (IDW) was transferred into secured 55-gallon drums and stored on-site.

The following laboratory analysis was performed on groundwater samples obtained from each well:

ENTERED 4-29 2011

1. Northwest Total Petroleum Hydrocarbons – Diesel extended range (NWTPH-Dx);
2. Northwest Total Petroleum Hydrocarbons – gasoline range (NWTPH-Gx); and
3. Benzene, toluene ethylbenzene and xylenes (BTEX; EPA Method 8021B).

Silica gel cleanup preparations were performed on samples prior to NWTPH-Dx analysis. The groundwater samples were submitted for analysis to Pace Analytical Services (Seattle, Washington). Attachment B contains a copy of the laboratory analytical report.

Table 2 and Figure 2 provide a summary of the analytical data and a comparison to the Model Toxics Control Act (MTCA) Method A Cleanup Levels for Groundwater. With the exception of the following, each of the chemical concentrations were below the laboratory reporting limits at each of the wells:

- Detectable concentrations of NWTPH-Gx were observed in groundwater monitoring well MW-3 and former air-injection well AIW-2;
- Detectable concentrations of benzene were observed at former air-injection well AIW-2;
- Detectable concentrations of toluene were observed in monitoring wells MW-3, MW-10 and MW-B, and in former air-injection well AIW-2 (duplicate sample only); and
- Detectable concentrations of xylenes were observed in groundwater monitoring well MW-3 (*m&p*–xylene and *o*–xylene), and former air-injection well AIW-2 (*m&p*–xylene only).

Each of the detected chemicals had concentrations below the MTCA Method A Cleanup Levels. NWTPH-Dx, NWTPH-Gx and BTEX were not detected in the trip blanks.

CLOSING

Geosyntec appreciates the opportunity to assist Qwest at this Site. If any questions arise regarding the activities or results discussed in this report, please feel free to contact Brent Miller (206-826-7183) or Chris Walker (206-826-7182).

Sincerely,

Chris Walker, Ph.D.
Engineer

Brent Miller, P.E.
Associate

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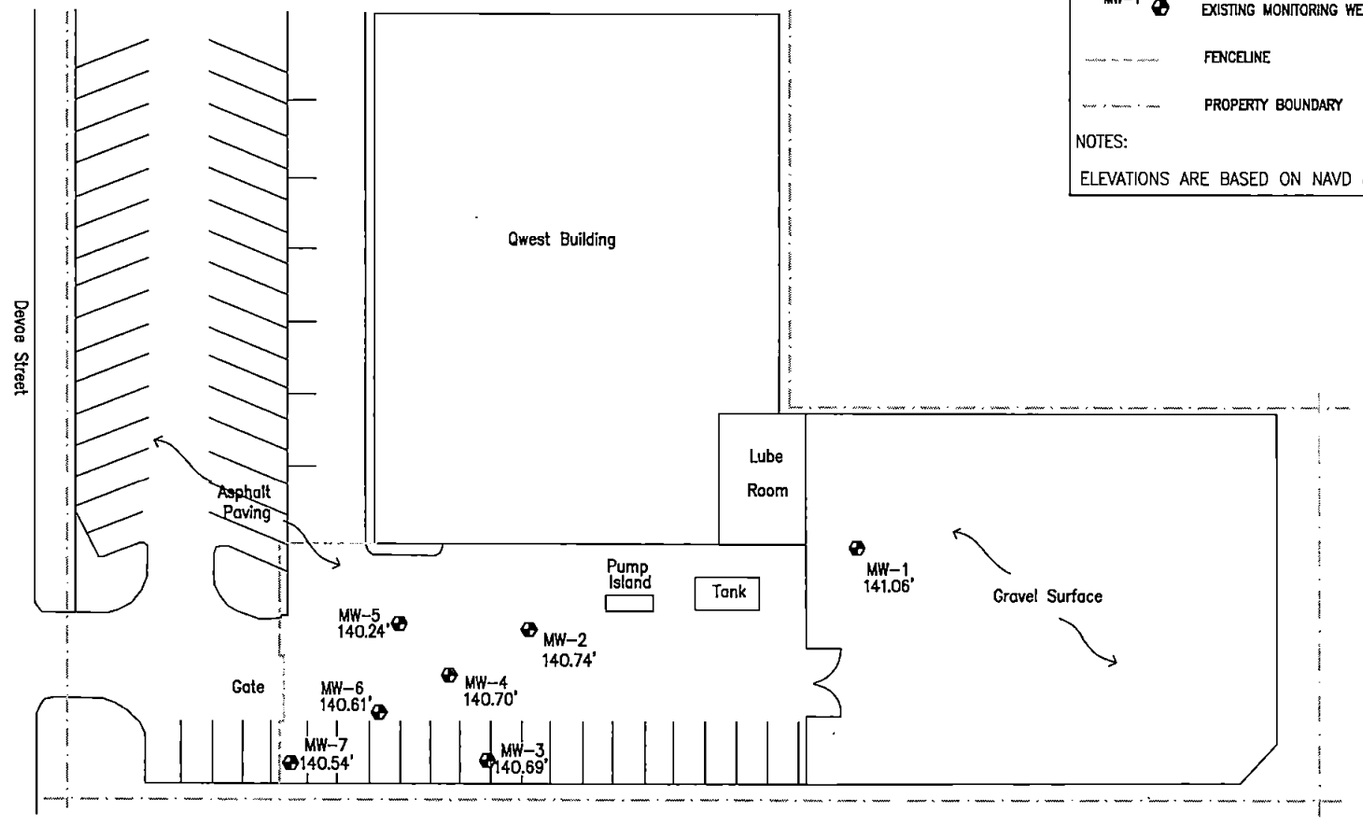
Attachments:

Figure 1: February 2011 Groundwater Elevations
Figure 2: February 2011 Groundwater Analytical Results

Table 1: 1st Quarter 2011 Well Casing and Groundwater Elevations
Table 2: 1st Quarter 2011 Groundwater Sampling Analytical Results

Attachment A: Groundwater Monitoring Well Logs
Attachment B: Laboratory Analytical Report



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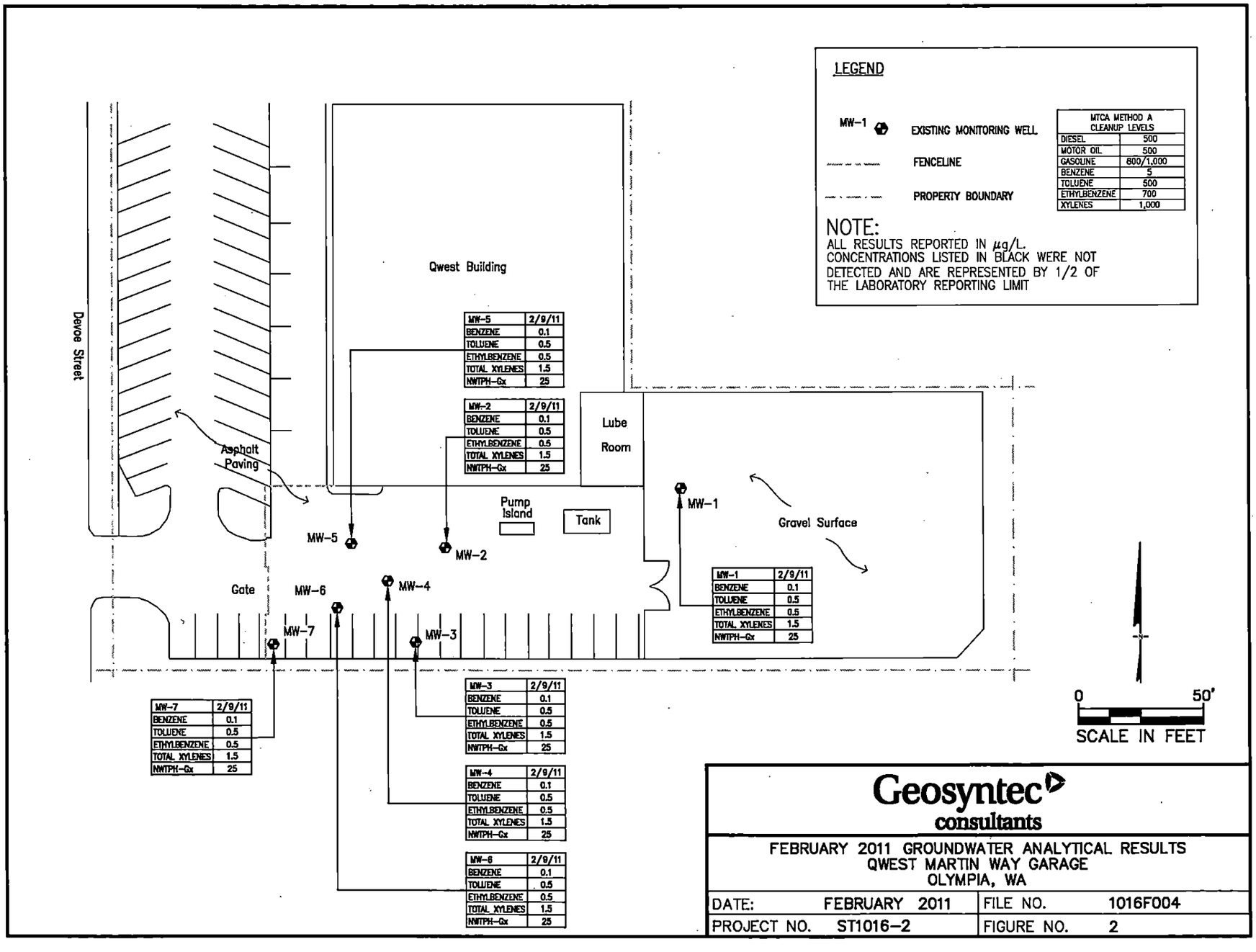
FEBRUARY 2011 GROUNDWATER ELEVATIONS
QWEST MARTIN WAY GARAGE
OLYMPIA, WA

DATE:	FEBRUARY 2011	FILE NO.	1016F003
PROJECT NO.	ST1016-2	FIGURE NO.	1



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FEBRUARY 2011 GROUNDWATER ANALYTICAL RESULTS
QWEST MARTIN WAY GARAGE
OLYMPIA, WA

DATE:	FEBRUARY 2011	FILE NO.	1016F004
PROJECT NO.	ST1016-2	FIGURE NO.	2

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TABLE 1

1st Quarter 2011 Well Casing and Groundwater Elevations
Qwest - Auburn Garage Service Operation Center
Auburn, Washington

MONITORING WELL	WELL CASING ELEVATION[1]	GROUNDWATER ELEVATION[1]
MW-2	55.14	50.95
MW-3	54.98	51.27
MW-9	55.28	51.85
MW-10	55.20	52.08
MW-13	54.65	51.85
MW-A	54.85	51.92
MW-B	55.05	51.62
MW-C	54.94	50.93
AIW-1	55.32	51.39
AIW-2	54.68	51.98

Notes:

1 - Elevations in feet above average mean sea level based on NAVD 88.

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TABLE 2

1st Quarter 2011 Groundwater Sampling Analytical Results
Qwest - Auburn Garage Service Operation Center
Auburn, Washington

ANALYTE[1]	MTCA Method A Cleanup Levels for Groundwater	TRIP BLANK	MW-2	MW-3	MW-9	MW-10	MW-13	MW-A	MW-B	MW-C	AIW-1	AIW-2	
			MW02020811	*MW03020811*	*MW09020811*	*MW10020811*	*MW13020811*	*MWA020811*	*MWB020811*	*MWC020811*	*AIW1020811*	*AIW2020811*	*DUP020811*
NWTPH-Dx													
Diesel range	500	*n.a.*	***38***	***38***	***38***	***38***	***38***	***38***	***38***	***38***	***38***	***38***	***38***
Motor oil range	500	*n.a.*	***190***	***190***	***190***	***190***	***190***	***190***	***190***	***190***	***190***	***190***	***190***
NWTPH-Gx	800/1,000[2]	***25***	***25***	**125**	***25***	***25***	***25***	***25***	***25***	***25***	***25***	**437**	**447**
Benzene	5	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	**2.8**	**3.3**
Ethylebenzene	700	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***
Toluene	1,000	***0.5***	***0.5***	**1.5**	***0.5***	**1.3**	***0.5***	***0.5***	**1.5**	***0.5***	***0.5***	***0.5***	**1.6**
Xylene (Total)	1,000	***1.5***	***1.5***	**3.5**	***1.5***	***1.5***	***1.5***	***1.5***	***1.5***	***1.5***	***1.5***	**2.2**	***1.5***
m&p-xylene	1,000	***1.0***	***1.0***	**2.3**	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	***1.0***	**2.2**	***1.0***
o-xylene	1,000	***0.5***	***0.5***	**1.2**	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***	***0.5***

Notes:

1 - All concentrations are in µg/L. ***Blue, bold, underlined, italicized values*** represent 1/2 of the analytical reporting limit.
2 - Cleanup Level is 800 µg/L if benzene is present and 1,000 µg/L is not present.

Abbreviations:

MTCA - Model Toxics Control Act
NWTPH - Northwest Total Petroleum Hydrocarbons
Dx - Diesel range
Gx - Gasoline range
µg/L - micrograms per liter
n.a. - not analyzed

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-2
PROJECT NAME: Qwest - Auburn	SAMPLE ID: MW02 072811
DATE: 7/28/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 13:18

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~ 16'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 250 ml/min
Well Diameter (in.): 2 Max Well Depth (ft): 16.4	Sample Time: 13:46	
Initial Depth to Water (ft): 4.19	Final Depth to Water (ft): 5.70	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
13:32	4000	12	250	6.94	0.141	9.46	49	40.6	5.58	
13:35	4750	12	250	6.93	0.141	7.99	20	44.5	5.83	
13:38	5500	12	250	6.93	0.141	7.98	18	44.2	5.86	
13:41	6250	12	250	6.93	0.141	7.98	15	43.3	5.89	

Total Volume Purged: 6250 mL | Total Time: 23 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

Water in monument; Drained before removing casing cap

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	7/28/11	CRW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-3
PROJECT NAME: Quest - Auburn	SAMPLE ID: MW030208 11
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 8:56

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~9'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 400 mL/MIN
Well Diameter (in.): 2 Max Well Depth (ft): 15.60	Sample Time: 9:20	
Initial Depth to Water (ft): 3.71	Final Depth to Water (ft): 8.44	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
9:10	2800	11.48	200	4.01	0.376	9.49	152	48.1	8.42	
9:13	3400	11.61	200	3.98	0.377	9.41	150	44.2	8.43	
9:16	4000	11.72	200	4.02	0.377	9.36	145	45.0	8.44	

Total Volume Purged: 4000 mL | Total Time: 20 MIN

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/9/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-9
PROJECT NAME: Quest-Auburn	SAMPLE ID: MW09022811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 8:07

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~7'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 300 ml/min
Well Diameter (in.): 4 Max Well Depth (ft): 15.10	Sample Time: 8:34	
Initial Depth to Water (ft): 3.43	Final Depth to Water (ft): 4.28	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
8:20	3900	10.74	300	6.88	0.209	2.03	34	62.7	4.39	Brown, turbid
8:23	4800	10.81	300	6.90	0.209	2.04	34	70.5	4.37	↓
8:26	5700	6.93	300	6.89	0.209	2.00	33	69.5	4.35	
8:29	6600	~~10.99~~ 10.93	300	6.90	0.209	1.98	27	66.3	4.33	↓

Total Volume Purged: 6600 mL | Total Time: 22 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CSW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-10
PROJECT NAME: Quest - Auburn	SAMPLE ID: MW10020811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 14:50

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~11'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 500 mL/min
Well Diameter (in.): 4 Max Well Depth (ft): 15.0	Sample Time: 15:28	
Initial Depth to Water (ft): 3.12	Final Depth to Water (ft):	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
15:18	14000	13.28	500	6.82	0.500	0.44	-98	58.2	3.12	
15:21	15500	13.21	500	6.81	0.495	0.41	-96	51.6	3.12	
15:24	17000	13.24	500	6.81	0.499	0.40	-96	56.5	3.12	

Total Volume Purged: 17000mL | Total Time: 34 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-13
PROJECT NAME: Quest - Auburn	SAMPLE ID: MW13 020811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 10:18

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~10'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 750 mL/min
Well Diameter (in.): 4 Max Well Depth (ft): 16.75	Sample Time: [redacted] 10:45	
Initial Depth to Water (ft): 7.86	Final Depth to Water (ft):	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
10:35	4250	11.57	250	6.01	0.103	8.74	46	58.0	4.15	
10:38	5000	11.59	250	6.00	0.103	8.71	40	62.4	4.20	
10:41	5750	11.56	250	6.10	0.103	8.68	38	56.7	4.24	

Total Volume Purged: 5750 mL | Total Time: 23 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: [redacted] MW1 02811
PROJECT NAME: Quest. Auburn	SAMPLE ID: [redacted] MW1 02811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 13:58
SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter	
Pump Intake Depth: ~9' / Target Purge Rate: **100 - 500 mL/min** / Actual Purge Rate: 350 ml/min	
Well Diameter (in.): 2 / Max Well Depth (ft): 14.30 / Sample Time: 14:40	
Initial Depth to Water (ft): 3.93 / Final Depth to Water (ft): 5.10	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
14:20	5500	13.10	256	–	0.438	0.40	210	246	4.98	
14:23	6250	13.18	250	–	0.440	0.42	210	100	5.28	
14:26	7000	13.17	250	–	0.436	0.48	208	239	5.42	
14:29	~~7250~~ 7500	13.13	250	–	0.435	0.57	207	218	5.40	
14:32	8500		250	–	0.435	0.53	205	220	5.36	

Total Volume Purged: 8500mL / Total Time: 34 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

(E) Mislabeled sample. Will correct on C.O.C. pH not working again.

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/9/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: AMW-2
PROJECT NAME: Quest-Auburn	SAMPLE ID: AMW2Ø2Ø811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 9:30

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~9'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 250 ml/min
Well Diameter (in.): 2 Max Well Depth (ft): 14.75	Sample Time: 10:01	
Initial Depth to Water (ft): 7.30	Final Depth to Water (ft): 7.30	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
9:49	4750	13.12	250	-	0.634	0.39	221	48.8	7.12	
9:52	5500	13.27	250	-	0.632	0.37	218	50.3	7.16	
9:55	6250	13.24	250	-	0.629	0.37	215	53.1	7.19	
9:58	7000	13.21	250	-	0.626	0.36	210	54.5	7.21	

Total Volume Purged: 7000 mL | Total Time: 28 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

· pH meter stopped working

QC Sample Collected? Yes (X) No ( ) If YES, then type of sample and sample ID:

DUPØ2Ø811 @ 16:00

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CRW
Sample Coordinator	2/9/11	

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-A
PROJECT NAME: Quest - Aulon	SAMPLE ID: MWA 02/08/11
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 11:46

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~91	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 250 mL/MIN
Well Diameter (in.): 2 Max Well Depth (ft): 16.0	Sample Time: 12:12	
Initial Depth to Water (ft): 2.93	Final Depth to Water (ft):	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
12:02	4000	10.64	250	7.68	0.407	0.37	-89	10.5	3.01	
12:05	4750	10.53	250	7.82	0.408	0.36	-75	8.9	3.03	
12:08	5500	10.47	250	7.96	0.409	0.35	-83	9.5	3.03	

Total Volume Purged: 5500 mL | Total Time: 22 MIN

Laboratory Analysis: ~~TDS~~ BTEX NWTPH-Gx NWTPH-Dx

Small amount of water in monument. Not over top of casing

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: [redacted] MWB02B11
PROJECT NAME: Quest - Auburn	SAMPLE ID: AJW1 02B11 (X)
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 11:07

SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter

Pump Intake Depth: ~10'	Target Purge Rate: **100 - 500 mL/min**	Actual Purge Rate: 250 ml/min
Well Diameter (in.): 2 Max Well Depth (ft): 17.10	Sample Time: 11:38	
Initial Depth to Water (ft): 3.43	Final Depth to Water (ft): 7.10	

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
11:24	4250	12.71	250	7.95	0.361	1.87	-53	MAX	7.10	
11:27	5000	13.04	256	7.75	0.380	0.56	-46	722	7.10	
11:30	5750	13.00	250	7.60	0.383	0.55	-37	MAX	7.10	
11:33	6500	13	250	7.61	0.383	0.50	-36	MAX	7.10	

Total Volume Purged: 6500 mL | Total Time: 26 min

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

Water above top of casing. Drained + then purge + sample.

(4) MS labeled samples. Will correct on COC

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CBW
Sample Coordinator		

GROUNDWATER MONITORING WELL PURGING AND SAMPLING LOG

	WELL ID: MW-C
PROJECT NAME: Quest - Auburn	SAMPLE ID: MWC020811
DATE: 2/8/11	SAMPLED BY: Chris Walker
PURGING METHOD: **Low-Flow**	PURGE START TIME: 12:22
SAMPLING EQUIPMENT: Barnant Pump; Horbia U-52, Solinst water-level meter	
Pump Intake Depth: ~ 10'	Target Purge Rate: **100 - 500 mL/min** — Actual Purge Rate: 250 mL/min
Well Diameter (in.): 2 Max Well Depth (ft): 16.50	Sample Time: 12:52
Initial Depth to Water (ft): 7.01	Final Depth to Water (ft):

Actual Time	Cumulative Volume (mL)	Temp (°C)	Flow rate (mL/min)	pH	Cond. (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (ft)	Observations
12:38	4000	14.22	250	6.85	0.684	0.55	-171	41.2	8.62	
12:41	4750	14.11	250	6.84	0.684	0.52	-163	28.3	8.61	
12:44	5500	14.13	250	6.84	0.684	0.52	-162	26.9	8.61	
12:47	6250	14.14	250	6.83	0.684	0.49	-161	27.4	8.60	

Total Volume Purged: 6250 mL — Total Time: 25 MIN

Laboratory Analysis: BTEX, NWTPH-Gx, NWTPH-Dx

QC Sample Collected? Yes ( ) No (X) If YES, then type of sample and sample ID:

Parameter	Stabilization Criteria
Drawdown	<0.1 meter (approximately 4 inches)
Temperature	± 5 percent range
pH	± 0.1 pH Units
Conductivity	± 5 percent range
DO	± 10 percent of reading or 0.2 mg/L
ORP	± 10 mV
Turbidity	± 10 percent range or 1 NTU, whichever is greater

QA Check

Field Member	Date	Initials
Sample Collector	2/8/11	CJW
Sample Coordinator		

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February 24, 2011

Chris Walker
Geosyntec Consultants
1700 7th Avenue
Suite 2100
Seattle, WA 98101

RE: Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Dear Chris Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Samples AIW1 and MWB were switched and mislabeled by accident in the field. Per client request prior to analysis Pace has corrected the sample IDs.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea R. Brownfield

Andy Brownfield for
Jennifer Gross
jennifer.gross@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Washington Certification IDs
940 South Harney Street, Seattle, WA 98108
Alaska CS Certification #: UST-025
Alaska Drinking Water VOC Certification #: WA01230
Alaska Drinking Water Micro Certification #: WA01230
California Certification #: 01153CA
Florida/NELAP Certification #: E87617
Oregon Certification #: WA200007
Washington Certification #: C1229

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SAMPLE ANALYTE COUNT

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
256536001	MW02020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536002	MW03020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536003	MW09020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536004	MW10020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536005	MW13020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	LPM	10	PASI-S
256536006	MWA020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536007	AIW1020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536008	MWB020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	LPM	10	PASI-S
256536009	AIW2020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536010	MWC020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S
256536011	DUP020811	NWTPH-Dx	AY1	4	PASI-S
		NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	LPM	10	PASI-S
256536012	TRIP BLANK	NWTPH-Gx	CC	3	PASI-S
		EPA 5030B/8260	ATH	10	PASI-S

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PROJECT NARRATIVE

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Method: NWTPH-Dx
Description: NWTPH-Dx GCS SG
Client: Geosyntec Consultants - WA
Date: February 24, 2011

General Information:
11 samples were analyzed for NWTPH-Dx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: OEXT/3301

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 58399)
  - Diesel Range SG

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/3301

P2: Re-extraction or re-analysis could not be performed due to insufficient sample amount.

- AIW1020811 (Lab ID: 256536007)
  - Diesel Range SG

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PROJECT NARRATIVE

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Method: **NWTPH-Dx**
Description: NWTPH-Dx GCS SG
Client: Geosyntec Consultants - WA
Date: February 24, 2011

Analyte Comments:

QC Batch: OEXT/3301

P2: Re-extraction or re-analysis could not be performed due to insufficient sample amount.

- AIW2020811 (Lab ID: 256536009)
  - Diesel Range SG
- DUP (Lab ID: 58400)
  - Diesel Range SG
- DUP020811 (Lab ID: 256536011)
  - Diesel Range SG
- MW02020811 (Lab ID: 256536001)
  - Diesel Range SG
- MW03020811 (Lab ID: 256536002)
  - Diesel Range SG
- MW09020811 (Lab ID: 256536003)
  - Diesel Range SG
- MW10020811 (Lab ID: 256536004)
  - Diesel Range SG
- MW13020811 (Lab ID: 256536005)
  - Diesel Range SG
- MWA020811 (Lab ID: 256536006)
  - Diesel Range SG
- MWB020811 (Lab ID: 256536008)
  - Diesel Range SG
- MWC020811 (Lab ID: 256536010)
  - Diesel Range SG

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PROJECT NARRATIVE

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Method: **NWTPH-Gx**
Description: NWTPH-Gx GCV
Client: Geosyntec Consultants - WA
Date: February 24, 2011

General Information:
12 samples were analyzed for NWTPH-Gx. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Geosyntec Consultants - WA
Date: February 24, 2011

General Information:
12 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/3845

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- AIW1020811 (Lab ID: 256536007)
  - 1,2-Dichloroethane-d4 (S)
- MWA020811 (Lab ID: 256536006)
  - 1,2-Dichloroethane-d4 (S)
- TRIP BLANK (Lab ID: 256536012)
  - 1,2-Dichloroethane-d4 (S)
  - Dibromofluoromethane (S)

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: MW02020811 **Lab ID: 256536001** Collected: 02/08/11 13:46 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 22:07		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 22:07	64742-65-0	
n-Octacosane (S) SG	98	%	50-150	1	02/14/11 10:40	02/14/11 22:07	630-02-4	
o-Terphenyl (S) SG	96	%	50-150	1	02/14/11 10:40	02/14/11 22:07	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 05:12		
a,a,a-Trifluorotoluene (S)	114	%	50-150	1		02/17/11 05:12	98-08-8	
4-Bromofluorobenzene (S)	92	%	50-150	1		02/17/11 05:12	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 09:54	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 09:54	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 09:54	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 09:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 09:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 09:54	95-47-6	
4-Bromofluorobenzene (S)	97	%	80-120	1		02/11/11 09:54	460-00-4	
Dibromofluoromethane (S)	91	%	80-122	1		02/11/11 09:54	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	80-124	1		02/11/11 09:54	17060-07-0	
Toluene-d8 (S)	101	%	80-123	1		02/11/11 09:54	2037-26-5	

Sample: MW03020811 **Lab ID: 256536002** Collected: 02/08/11 09:20 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 22:24		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 22:24	64742-65-0	
n-Octacosane (S) SG	100	%	50-150	1	02/14/11 10:40	02/14/11 22:24	630-02-4	
o-Terphenyl (S) SG	97	%	50-150	1	02/14/11 10:40	02/14/11 22:24	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	**125**	ug/L	50.0	1		02/17/11 05:59		
a,a,a-Trifluorotoluene (S)	114	%	50-150	1		02/17/11 05:59	98-08-8	
4-Bromofluorobenzene (S)	98	%	50-150	1		02/17/11 05:59	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 10:11	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 10:11	100-41-4	
Toluene	**1.5**	ug/L	1.0	1		02/11/11 10:11	108-88-3	
Xylene (Total)	**3.5**	ug/L	3.0	1		02/11/11 10:11	1330-20-7	
m&p-Xylene	**2.3**	ug/L	2.0	1		02/11/11 10:11	179601-23-1	
o-Xylene	**1.2**	ug/L	1.0	1		02/11/11 10:11	95-47-6	
4-Bromofluorobenzene (S)	97	%	80-120	1		02/11/11 10:11	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: MW03020811 **Lab ID: 256536002** Collected: 02/08/11 09:20 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Dibromofluoromethane (S)	93	%	80-122	1		02/11/11 10:11	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	80-124	1		02/11/11 10:11	17060-07-0	
Toluene-d8 (S)	100	%	80-123	1		02/11/11 10:11	2037-26-5	

Sample: MW09020811 **Lab ID: 256536003** Collected: 02/08/11 08:34 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 22:40		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 22:40	64742-65-0	
n-Octacosane (S) SG	102	%	50-150	1	02/14/11 10:40	02/14/11 22:40	630-02-4	
o-Terphenyl (S) SG	96	%	50-150	1	02/14/11 10:40	02/14/11 22:40	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 06:45		
a,a,a-Trifluorotoluene (S)	113	%	50-150	1		02/17/11 06:45	98-08-8	
4-Bromofluorobenzene (S)	92	%	50-150	1		02/17/11 06:45	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 10:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 10:28	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 10:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 10:28	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 10:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 10:28	95-47-6	
4-Bromofluorobenzene (S)	98	%	80-120	1		02/11/11 10:28	460-00-4	
Dibromofluoromethane (S)	92	%	80-122	1		02/11/11 10:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	80-124	1		02/11/11 10:28	17060-07-0	
Toluene-d8 (S)	100	%	80-123	1		02/11/11 10:28	2037-26-5	

Sample: MW10020811 **Lab ID: 256536004** Collected: 02/08/11 15:28 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 22:57		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 22:57	64742-65-0	
n-Octacosane (S) SG	101	%	50-150	1	02/14/11 10:40	02/14/11 22:57	630-02-4	
o-Terphenyl (S) SG	100	%	50-150	1	02/14/11 10:40	02/14/11 22:57	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 07:08		
a,a,a-Trifluorotoluene (S)	106	%	50-150	1		02/17/11 07:08	98-08-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: MW10020811 **Lab ID: 256536004** Collected: 02/08/11 15:28 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
4-Bromofluorobenzene (S)	88	%	50-150	1		02/17/11 07:08	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 10:45	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 10:45	100-41-4	
Toluene	**1.3**	ug/L	1.0	1		02/11/11 10:45	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 10:45	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 10:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 10:45	95-47-6	
4-Bromofluorobenzene (S)	98	%	80-120	1		02/11/11 10:45	460-00-4	
Dibromofluoromethane (S)	93	%	80-122	1		02/11/11 10:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	103	%	80-124	1		02/11/11 10:45	17060-07-0	
Toluene-d8 (S)	100	%	80-123	1		02/11/11 10:45	2037-26-5	

Sample: MW13020811 **Lab ID: 256536005** Collected: 02/08/11 10:45 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 23:14		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 23:14	64742-65-0	
n-Octacosane (S) SG	102	%	50-150	1	02/14/11 10:40	02/14/11 23:14	630-02-4	
o-Terphenyl (S) SG	95	%	50-150	1	02/14/11 10:40	02/14/11 23:14	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 07:31		
a,a,a-Trifluorotoluene (S)	111	%	50-150	1		02/17/11 07:31	98-08-8	
4-Bromofluorobenzene (S)	92	%	50-150	1		02/17/11 07:31	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/15/11 16:18	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/15/11 16:18	100-41-4	
Toluene	ND	ug/L	1.0	1		02/15/11 16:18	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/15/11 16:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/15/11 16:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/15/11 16:18	95-47-6	
4-Bromofluorobenzene (S)	105	%	80-120	1		02/15/11 16:18	460-00-4	
Dibromofluoromethane (S)	100	%	80-122	1		02/15/11 16:18	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	80-124	1		02/15/11 16:18	17060-07-0	
Toluene-d8 (S)	106	%	80-123	1		02/15/11 16:18	2037-26-5	

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: MWA020811 **Lab ID: 256536006** Collected: 02/08/11 12:12 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/14/11 23:30		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/14/11 23:30	64742-65-0	
n-Octacosane (S) SG	107	%	50-150	1	02/14/11 10:40	02/14/11 23:30	630-02-4	
o-Terphenyl (S) SG	102	%	50-150	1	02/14/11 10:40	02/14/11 23:30	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 07:55		
a,a,a-Trifluorotoluene (S)	113	%	50-150	1		02/17/11 07:55	98-08-8	
4-Bromofluorobenzene (S)	93	%	50-150	1		02/17/11 07:55	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 16:05	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 16:05	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 16:05	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 16:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 16:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 16:05	95-47-6	
4-Bromofluorobenzene (S)	95	%	80-120	1		02/11/11 16:05	460-00-4	
Dibromofluoromethane (S)	122	%	80-122	1		02/11/11 16:05	1868-53-7	
1,2-Dichloroethane-d4 (S)	129	%	80-124	1		02/11/11 16:05	17060-07-0	S3
Toluene-d8 (S)	92	%	80-123	1		02/11/11 16:05	2037-26-5	

Sample: AIW1020811 **Lab ID: 256536007** Collected: 02/08/11 13:38 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/15/11 00:20		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/15/11 00:20	64742-65-0	
n-Octacosane (S) SG	104	%	50-150	1	02/14/11 10:40	02/15/11 00:20	630-02-4	
o-Terphenyl (S) SG	99	%	50-150	1	02/14/11 10:40	02/15/11 00:20	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 08:18		
a,a,a-Trifluorotoluene (S)	111	%	50-150	1		02/17/11 08:18	98-08-8	
4-Bromofluorobenzene (S)	88	%	50-150	1		02/17/11 08:18	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 16:25	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 16:25	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 16:25	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 16:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 16:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 16:25	95-47-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		02/11/11 16:25	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: AIW1020811 **Lab ID: 256536007** Collected: 02/08/11 13:38 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260							
Dibromofluoromethane (S)	108	%	80-122	1		02/11/11 16:25	1868-53-7	
1,2-Dichloroethane-d4 (S)	135	%	80-124	1		02/11/11 16:25	17060-07-0	S3
Toluene-d8 (S)	102	%	80-123	1		02/11/11 16:25	2037-26-5	

Sample: MWB020811 **Lab ID: 256536008** Collected: 02/08/11 14:40 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/15/11 00:36		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/15/11 00:36	64742-65-0	
n-Octacosane (S) SG	99	%	50-150	1	02/14/11 10:40	02/15/11 00:36	630-02-4	
o-Terphenyl (S) SG	95	%	50-150	1	02/14/11 10:40	02/15/11 00:36	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 08:41		
a,a,a-Trifluorotoluene (S)	114	%	50-150	1		02/17/11 08:41	98-08-8	
4-Bromofluorobenzene (S)	94	%	50-150	1		02/17/11 08:41	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/15/11 16:35	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/15/11 16:35	100-41-4	
Toluene	**1.5**	ug/L	1.0	1		02/15/11 16:35	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/15/11 16:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/15/11 16:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/15/11 16:35	95-47-6	
4-Bromofluorobenzene (S)	107	%	80-120	1		02/15/11 16:35	460-00-4	
Dibromofluoromethane (S)	99	%	80-122	1		02/15/11 16:35	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	80-124	1		02/15/11 16:35	17060-07-0	
Toluene-d8 (S)	105	%	80-123	1		02/15/11 16:35	2037-26-5	

Sample: AIW2020811 **Lab ID: 256536009** Collected: 02/08/11 10:01 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/15/11 00:53		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/15/11 00:53	64742-65-0	
n-Octacosane (S) SG	104	%	50-150	1	02/14/11 10:40	02/15/11 00:53	630-02-4	
o-Terphenyl (S) SG	100	%	50-150	1	02/14/11 10:40	02/15/11 00:53	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	**437**	ug/L	50.0	1		02/17/11 09:04		
a,a,a-Trifluorotoluene (S)	113	%	50-150	1		02/17/11 09:04	98-08-8	

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: AIW2020811 **Lab ID: 256536009** Collected: 02/08/11 10:01 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
4-Bromofluorobenzene (S)	118	%	50-150	1		02/17/11 09:04	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	**2.8**	ug/L	1.0	1		02/11/11 17:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 17:06	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 17:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 17:06	1330-20-7	
m&p-Xylene	**2.2**	ug/L	2.0	1		02/11/11 17:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 17:06	95-47-6	
4-Bromofluorobenzene (S)	91	%	80-120	1		02/11/11 17:06	460-00-4	
Dibromofluoromethane (S)	120	%	80-122	1		02/11/11 17:06	1868-53-7	
1,2-Dichloroethane-d4 (S)	121	%	80-124	1		02/11/11 17:06	17060-07-0	
Toluene-d8 (S)	106	%	80-123	1		02/11/11 17:06	2037-26-5	

Sample: MWC020811 **Lab ID: 256536010** Collected: 02/08/11 12:52 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/15/11 01:10		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/15/11 01:10	64742-65-0	
n-Octacosane (S) SG	102	%	50-150	1	02/14/11 10:40	02/15/11 01:10	630-02-4	
o-Terphenyl (S) SG	100	%	50-150	1	02/14/11 10:40	02/15/11 01:10	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 09:27		
a,a,a-Trifluorotoluene (S)	115	%	50-150	1		02/17/11 09:27	98-08-8	
4-Bromofluorobenzene (S)	94	%	50-150	1		02/17/11 09:27	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 17:26	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 17:26	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 17:26	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 17:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 17:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 17:26	95-47-6	
4-Bromofluorobenzene (S)	92	%	80-120	1		02/11/11 17:26	460-00-4	
Dibromofluoromethane (S)	102	%	80-122	1		02/11/11 17:26	1868-53-7	
1,2-Dichloroethane-d4 (S)	120	%	80-124	1		02/11/11 17:26	17060-07-0	
Toluene-d8 (S)	95	%	80-123	1		02/11/11 17:26	2037-26-5	

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ANALYTICAL RESULTS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Sample: DUP020811 **Lab ID: 256536011** Collected: 02/08/11 16:00 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS SG	Analytical Method: NWTPH-Dx Preparation Method: EPA 3510							
Diesel Range SG	ND	mg/L	0.076	1	02/14/11 10:40	02/15/11 01:26		P2
Motor Oil Range SG	ND	mg/L	0.38	1	02/14/11 10:40	02/15/11 01:26	64742-65-0	
n-Octacosane (S) SG	102	%	50-150	1	02/14/11 10:40	02/15/11 01:26	630-02-4	
o-Terphenyl (S) SG	95	%	50-150	1	02/14/11 10:40	02/15/11 01:26	84-15-1	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	**447**	ug/L	50.0	1		02/17/11 09:50		
a,a,a-Trifluorotoluene (S)	116	%	50-150	1		02/17/11 09:50	98-08-8	
4-Bromofluorobenzene (S)	119	%	50-150	1		02/17/11 09:50	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	**3.3**	ug/L	1.0	1		02/15/11 16:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/15/11 16:52	100-41-4	
Toluene	**1.6**	ug/L	1.0	1		02/15/11 16:52	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/15/11 16:52	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/15/11 16:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/15/11 16:52	95-47-6	
4-Bromofluorobenzene (S)	107	%	80-120	1		02/15/11 16:52	460-00-4	
Dibromofluoromethane (S)	98	%	80-122	1		02/15/11 16:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	80-124	1		02/15/11 16:52	17060-07-0	
Toluene-d8 (S)	106	%	80-123	1		02/15/11 16:52	2037-26-5	

Sample: TRIP BLANK **Lab ID: 256536012** Collected: 02/08/11 00:00 Received: 02/09/11 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
Gasoline Range Organics	ND	ug/L	50.0	1		02/17/11 11:47		
a,a,a-Trifluorotoluene (S)	108	%	50-150	1		02/17/11 11:47	98-08-8	
4-Bromofluorobenzene (S)	88	%	50-150	1		02/17/11 11:47	460-00-4	
8260 MSV	Analytical Method: EPA 5030B/8260							
Benzene	ND	ug/L	1.0	1		02/11/11 14:05	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/11/11 14:05	100-41-4	
Toluene	ND	ug/L	1.0	1		02/11/11 14:05	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/11/11 14:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		02/11/11 14:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		02/11/11 14:05	95-47-6	
4-Bromofluorobenzene (S)	89	%	80-120	1		02/11/11 14:05	460-00-4	
Dibromofluoromethane (S)	127	%	80-122	1		02/11/11 14:05	1868-53-7	S3
1,2-Dichloroethane-d4 (S)	131	%	80-124	1		02/11/11 14:05	17060-07-0	S3
Toluene-d8 (S)	87	%	80-123	1		02/11/11 14:05	2037-26-5	

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QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: OEXT/3301 Analysis Method: NWTPH-Dx
QC Batch Method: EPA 3510 Analysis Description: NWTPH-Dx GCS
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004, 256536005, 256536006, 256536007, 256536008, 256536009, 256536010, 256536011

METHOD BLANK: 58398 Matrix: Water
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004, 256536005, 256536006, 256536007, 256536008, 256536009, 256536010, 256536011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range SG	mg/L	ND	0.080	02/14/11 18:16	
Motor Oil Range SG	mg/L	ND	0.40	02/14/11 18:16	
n-Octacosane (S) SG	%	92	50-150	02/14/11 18:16	
o-Terphenyl (S) SG	%	87	50-150	02/14/11 18:16	

LABORATORY CONTROL SAMPLE: 58399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range SG	mg/L	5	1.8	36	51-147	L2
Motor Oil Range SG	mg/L	5	2.0	39	20-160	
n-Octacosane (S) SG	%			60	50-150	
o-Terphenyl (S) SG	%			68	50-150	

SAMPLE DUPLICATE: 58400

Parameter	Units	256544001 Result	Dup Result	RPD	Qualifiers
Diesel Range SG	mg/L	ND	.039J		P2
Motor Oil Range SG	mg/L	ND	ND		
n-Octacosane (S) SG	%	98	104	5	
o-Terphenyl (S) SG	%	98	93	6	

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QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: GCV/2171 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004, 256536005, 256536006, 256536007, 256536008, 256536009, 256536010, 256536011

METHOD BLANK: 58782 Matrix: Water
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004, 256536005, 256536006, 256536007, 256536008, 256536009, 256536010, 256536011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	02/17/11 00:32	
4-Bromofluorobenzene (S)	%	80	50-150	02/17/11 00:32	
a,a,a-Trifluorotoluene (S)	%	99	50-150	02/17/11 00:32	

LABORATORY CONTROL SAMPLE: 58783

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	232	93	50-163	
4-Bromofluorobenzene (S)	%			80	50-150	
a,a,a-Trifluorotoluene (S)	%			90	50-150	

SAMPLE DUPLICATE: 59083

Parameter	Units	256532002 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		
4-Bromofluorobenzene (S)	%	88	88	.3	
a,a,a-Trifluorotoluene (S)	%	107	109	2	

SAMPLE DUPLICATE: 59084

Parameter	Units	256536001 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		
4-Bromofluorobenzene (S)	%	92	94	2	
a,a,a-Trifluorotoluene (S)	%	114	114	.5	

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QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: GCV/2173 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx GCV Water
Associated Lab Samples: 256536012

METHOD BLANK: 58815 Matrix: Water
Associated Lab Samples: 256536012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	02/17/11 11:24	
4-Bromofluorobenzene (S)	%	93	50-150	02/17/11 11:24	
a,a,a-Trifluorotoluene (S)	%	111	50-150	02/17/11 11:24	

LABORATORY CONTROL SAMPLE: 58816

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	250	240	96	50-163	
4-Bromofluorobenzene (S)	%			90	50-150	
a,a,a-Trifluorotoluene (S)	%			107	50-150	

SAMPLE DUPLICATE: 59194

Parameter	Units	256538003 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	ND	ND		
4-Bromofluorobenzene (S)	%	94	91	3	
a,a,a-Trifluorotoluene (S)	%	115	112	2	

SAMPLE DUPLICATE: 59195

Parameter	Units	256585003 Result	Dup Result	RPD	Qualifiers
Gasoline Range Organics	ug/L	69.6	70.9	2	
4-Bromofluorobenzene (S)	%	89	89	.8	
a,a,a-Trifluorotoluene (S)	%	109	109	.5	

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: MSV/3843 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004

METHOD BLANK: 58007 Matrix: Water
Associated Lab Samples: 256536001, 256536002, 256536003, 256536004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/11/11 04:45	
Ethylbenzene	ug/L	ND	1.0	02/11/11 04:45	
m&p-Xylene	ug/L	ND	2.0	02/11/11 04:45	
o-Xylene	ug/L	ND	1.0	02/11/11 04:45	
Toluene	ug/L	ND	1.0	02/11/11 04:45	
Xylene (Total)	ug/L	ND	3.0	02/11/11 04:45	
1,2-Dichloroethane-d4 (S)	%	98	80-124	02/11/11 04:45	
4-Bromofluorobenzene (S)	%	95	80-120	02/11/11 04:45	
Dibromofluoromethane (S)	%	92	80-122	02/11/11 04:45	
Toluene-d8 (S)	%	101	80-123	02/11/11 04:45	

LABORATORY CONTROL SAMPLE: 58008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.5	82	76-127	
Ethylbenzene	ug/L	20	16.9	84	72-125	
m&p-Xylene	ug/L	40	33.7	84	73-126	
o-Xylene	ug/L	20	17.3	87	73-123	
Toluene	ug/L	20	16.6	83	69-125	
Xylene (Total)	ug/L	60	51.0	85	74-124	
1,2-Dichloroethane-d4 (S)	%			100	80-124	
4-Bromofluorobenzene (S)	%			97	80-120	
Dibromofluoromethane (S)	%			98	80-122	
Toluene-d8 (S)	%			100	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58009 58010

Parameter	Units	256532001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	16.5	16.5	82	83	75-124	.2	
Ethylbenzene	ug/L	ND	20	20	17.0	16.9	85	85	76-124	.5	
m&p-Xylene	ug/L		40	40	33.4	33.1	83	83	75-124	.9	
o-Xylene	ug/L		20	20	17.0	16.9	85	85	76-121	.4	
Toluene	ug/L	ND	20	20	16.7	16.5	84	83	75-124	1	
Xylene (Total)	ug/L	ND	60	60	50.4	50.0	84	83	76-123	.7	
1,2-Dichloroethane-d4 (S)	%						99	100	80-124		
4-Bromofluorobenzene (S)	%						95	96	80-120		
Dibromofluoromethane (S)	%						97	97	80-122		
Toluene-d8 (S)	%						99	99	80-123		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
940 South Harney
Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: MSV/3845 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 256536006, 256536007, 256536009, 256536010, 256536012

METHOD BLANK: 58190 Matrix: Water
Associated Lab Samples: 256536006, 256536007, 256536009, 256536010, 256536012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/11/11 13:24	
Ethylbenzene	ug/L	ND	1.0	02/11/11 13:24	
m&p-Xylene	ug/L	ND	2.0	02/11/11 13:24	
o-Xylene	ug/L	ND	1.0	02/11/11 13:24	
Toluene	ug/L	ND	1.0	02/11/11 13:24	
Xylene (Total)	ug/L	ND	3.0	02/11/11 13:24	
1,2-Dichloroethane-d4 (S)	%	110	80-124	02/11/11 13:24	
4-Bromofluorobenzene (S)	%	95	80-120	02/11/11 13:24	
Dibromofluoromethane (S)	%	106	80-122	02/11/11 13:24	
Toluene-d8 (S)	%	92	80-123	02/11/11 13:24	

LABORATORY CONTROL SAMPLE: 58191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.2	91	76-127	
Ethylbenzene	ug/L	20	18.5	93	72-125	
m&p-Xylene	ug/L	40	38.1	95	73-126	
o-Xylene	ug/L	20	18.8	94	73-123	
Toluene	ug/L	20	16.1	80	69-125	
Xylene (Total)	ug/L	60	56.9	95	74-124	
1,2-Dichloroethane-d4 (S)	%			110	80-124	
4-Bromofluorobenzene (S)	%			90	80-120	
Dibromofluoromethane (S)	%			104	80-122	
Toluene-d8 (S)	%			86	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58507 58508

Parameter	Units	256522009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	17.2	17.7	86	88	75-124	3	
Ethylbenzene	ug/L	ND	20	20	18.9	18.1	94	90	76-124	4	
m&p-Xylene	ug/L		40	40	37.4	35.9	93	89	75-124	4	
o-Xylene	ug/L		20	20	18.5	17.6	93	88	76-121	5	
Toluene	ug/L	ND	20	20	18.6	18.2	93	91	75-124	2	
Xylene (Total)	ug/L	ND	60	60	55.9	53.5	93	89	76-123	4	
1,2-Dichloroethane-d4 (S)	%						106	102	80-124		
4-Bromofluorobenzene (S)	%						99	91	80-120		
Dibromofluoromethane (S)	%						97	89	80-122		
Toluene-d8 (S)	%						99	94	80-123		

REPORT OF LABORATORY ANALYSIS

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940 South Harney
Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

QC Batch: MSV/3860 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 256536005, 256536008, 256536011

METHOD BLANK: 58552 Matrix: Water
Associated Lab Samples: 256536005, 256536008, 256536011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/15/11 15:44	
Ethylbenzene	ug/L	ND	1.0	02/15/11 15:44	
m&p-Xylene	ug/L	ND	2.0	02/15/11 15:44	
o-Xylene	ug/L	ND	1.0	02/15/11 15:44	
Toluene	ug/L	ND	1.0	02/15/11 15:44	
Xylene (Total)	ug/L	ND	3.0	02/15/11 15:44	
1,2-Dichloroethane-d4 (S)	%	103	80-124	02/15/11 15:44	
4-Bromofluorobenzene (S)	%	106	80-120	02/15/11 15:44	
Dibromofluoromethane (S)	%	101	80-122	02/15/11 15:44	
Toluene-d8 (S)	%	105	80-123	02/15/11 15:44	

LABORATORY CONTROL SAMPLE: 58553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.7	88	76-127	
Ethylbenzene	ug/L	20	17.9	90	72-125	
m&p-Xylene	ug/L	40	35.8	90	73-126	
o-Xylene	ug/L	20	18.4	92	73-123	
Toluene	ug/L	20	17.9	89	69-125	
Xylene (Total)	ug/L	60	54.2	90	74-124	
1,2-Dichloroethane-d4 (S)	%			99	80-124	
4-Bromofluorobenzene (S)	%			108	80-120	
Dibromofluoromethane (S)	%			106	80-122	
Toluene-d8 (S)	%			106	80-123	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 58672 58673

Parameter	Units	256544004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	ND	20	20	19.8	19.5	99	98	75-124	1	
Ethylbenzene	ug/L	ND	20	20	19.5	19.0	97	95	76-124	2	
m&p-Xylene	ug/L		40	40	38.4	37.8	96	94	75-124	2	
o-Xylene	ug/L		20	20	19.9	19.6	99	98	76-121	2	
Toluene	ug/L	ND	20	20	19.6	19.2	98	96	75-124	2	
Xylene (Total)	ug/L	ND	60	60	58.3	57.4	97	95	76-123	2	
1,2-Dichloroethane-d4 (S)	%						105	102	80-124		
4-Bromofluorobenzene (S)	%						107	106	80-120		
Dibromofluoromethane (S)	%						106	108	80-122		
Toluene-d8 (S)	%						104	104	80-123		

Pace Analytical Services, Inc.
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(206)767-5060

QUALIFIERS

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel Clean-Up

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-S	Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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Seattle, WA 98108
(206)767-5060

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Qwest - Groundwater ST1016-01
Pace Project No.: 256536

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
256536001	MW02020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536002	MW03020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536003	MW09020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536004	MW10020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536005	MW13020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536006	MWA020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536007	AIW1020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536008	MWB020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536009	AIW2020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536010	MWC020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536011	DUP020811	EPA 3510	OEXT/3301	NWTPH-Dx	GCSV/2257
256536001	MW02020811	NWTPH-Gx	GCV/2171		
256536002	MW03020811	NWTPH-Gx	GCV/2171		
256536003	MW09020811	NWTPH-Gx	GCV/2171		
256536004	MW10020811	NWTPH-Gx	GCV/2171		
256536005	MW13020811	NWTPH-Gx	GCV/2171		
256536006	MWA020811	NWTPH-Gx	GCV/2171		
256536007	AIW1020811	NWTPH-Gx	GCV/2171		
256536008	MWB020811	NWTPH-Gx	GCV/2171		
256536009	AIW2020811	NWTPH-Gx	GCV/2171		
256536010	MWC020811	NWTPH-Gx	GCV/2171		
256536011	DUP020811	NWTPH-Gx	GCV/2171		
256536012	TRIP BLANK	NWTPH-Gx	GCV/2173		
256536001	MW02020811	EPA 5030B/8260	MSV/3843		
256536002	MW03020811	EPA 5030B/8260	MSV/3843		
256536003	MW09020811	EPA 5030B/8260	MSV/3843		
256536004	MW10020811	EPA 5030B/8260	MSV/3843		
256536005	MW13020811	EPA 5030B/8260	MSV/3860		
256536006	MWA020811	EPA 5030B/8260	MSV/3845		
256536007	AIW1020811	EPA 5030B/8260	MSV/3845		
256536008	MWB020811	EPA 5030B/8260	MSV/3860		
256536009	AIW2020811	EPA 5030B/8260	MSV/3845		
256536010	MWC020811	EPA 5030B/8260	MSV/3845		
256536011	DUP020811	EPA 5030B/8260	MSV/3860		
256536012	TRIP BLANK	EPA 5030B/8260	MSV/3845		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

256536

Page: 1 of 1

1438759

Section A Required Client Information:

Company: Geosyntec Consultants
Address: 1300 7th Ave #200
SEATTLE WA 98101
Email To: CWALKER@geosyntec
Phone: 206-826-7182 Fax: 206-357-8401
Requested Due Date/TAT: STND

Section B Required Project Information:

Report To: CHRIS WALKER
Copy To: —
—
Purchase Order No.: ST1016-01
Project Name: Quart - Groundwater
Project Number: ST1016

Section C Invoice Information:

Attention: CHRIS WALKER
Company Name: Geosyntec
Address: SAME
Pace Quote Reference:
Pace Project Manager: JEN GROSS
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER ____

Site Location STATE: WA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: BTEX	NWTPH-Gx	NWTPH-Dx	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW1Φ2Φ811	WT	G			2/8/11	13:46	10	7				X						X	X	X		
2	MW3Φ2Φ811						9:30																
3	MW5Φ2Φ811						8:34																
4	MW10Φ2Φ811						11:28																
5	MW13Φ2Φ811						10:45																
6	MWA Φ2Φ811						12:12																
7	MWBΦ2Φ811				13:38		[illegible]																
8	AIW1ΦΦ811						14:40																
9	AIW2Φ2Φ811						10:01																
10	MW11Φ2Φ811						12:52																
11	DUPΦ2Φ811						16:00		↓														
12	TRIP BLANK				—		—		6														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Samples AIW1 + MWB were mislabelled. They should be switched as a note attached to report.	CHRIS WALKER/Geosyntec	2/9/11	1335	Colette Wilkes/PACE	02/09/11	1335	0.8	Y	N	Y
							2.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: CHRIS WALKER
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 02/09/11

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

[redacted]

256536

Sample Container Count

CLIENT: GeoSyntec

COC PAGE 1 of 1
COC ID# 1438759

Pace Analytical

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WGFU	WGKU				Comments
1	6	12													
2	↓	↓													
3															
4															
5															
6															
7															
8															
9															
10															
11															
12	↓	0													Trip Blank? No

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic		JGFU	4oz unpreserved amber wide
AG1U	1liter unpreserved amber glass		BP2U	500mL unpreserved plastic		R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac		U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic		VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic		VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic		VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic		VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial		VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber voa vial		WGFU	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial		WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial		ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved amber vial			
BP2O	500mL NaOH plastic		I	Wipe/Swab			

Sample Condition Upon Receipt

Pace Analytical

Client Name: Geosyntec

Project # 256536

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ Temp. Blank Yes ____ No ____

Thermometer Used 132013 or 101731962 or 276099 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.8, 2.9 Biological Tissue is Frozen: Yes No

Temp should be above freezing ≤ 6°C

Date and Initials of person examining contents: NB 2/9/11

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☐N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12. See client comments on COC.
-Includes date/time/ID/Analysis Matrix: Water				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
Exceptions: VOA, coliform, TOC, O&G				Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blanks Present:	☑Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Chris@GeoSyntec Date/Time: 2/10/11 12:57 - Email

Comments/ Resolution:

Added narrative comment on AIW1 & MW8 / Do Diesel's need silica gel cleanup? Per Chris - Yes run w/ SG. Ok 13:06 2/10/11.

Per client sample ID's were switched on AIW1 & MW8 by Pace. Ok

Project Manager Review: JENNI GROSS Date: 2/10/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)