

TOSCO 6380  
 Bellingham  
 LUST 471259

DATE: March 6, 2008

VCP NW1487



**GROUNDWATER MONITORING REPORT**

Facility No.: 256380 Address: 200 South 36th Street, Bellingham, Washington  
 ConocoPhillips Site Manager: Michael Noll (RM&R 1571)  
 Consultant / Contact Person: SECOR International Inc. / Leslie Bond  
 Primary Agency/Regulatory ID No.: Washington State Department of Ecology / Site ID No. 8394  
 SECOR Project No: 01CP.01571.40

**WORK PERFORMED THIS QUARTER(S) [4th - 2007]:**

- On December 3, 2007, SECOR personnel monitored, purged, and sampled eight wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8) of the existing network of eight groundwater monitoring wells (MW-1 through MW-8).
- Groundwater samples were collected using a peristaltic pump, with dedicated polyethylene tubing in the well casing and a new section of silicon tubing in the pump head. Complete groundwater monitoring, purging, and sampling procedures are provided in Attachment B.
- Samples were submitted to Lancaster Laboratories for analysis of gasoline range hydrocarbons (TPH-g) per Northwest Method NWTPH-Gx; diesel range (TPH-d) and heavy oil range (TPH-o) hydrocarbons per Northwest Method NWTPH-Dx, modified with an acid/silica gel cleanup; benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert butyl ether (MTBE) per United States Environmental Protection Agency (USEPA) Method 8260B. The laboratory analytical report is presented in Attachment A.

**DATA SUMMARY THIS QUARTER:**

Frequency of Sampling Events:	<u>Quarterly</u>	(03/07,06/07,09/07,12/07)
Depth to Groundwater:	<u>4.64 ft. (MW-5)</u>	(Measured Feet Below)
	<u>7.51 ft. (MW-8)</u>	Top of Well Casing/Well ID)
Groundwater Gradient:	<u>Southwest</u>	(Flow Direction)
	<u>0.035 feet per foot</u>	(Magnitude)
Maximum TPH-G Concentrations:	<u>400 µg/L (MW-7)</u>	(ppb / well ID)
Maximum TPH-D Concentrations:	<u>970 µg/L (MW-7)</u>	(ppb / well ID)
Maximum TPH-O Concentrations:	<u>290 µg/L (MW-8)</u>	(ppb / well ID)
Maximum Benzene Concentration:	<u>None Detected</u>	(ppb / well ID)
Maximum Dissolved Lead Concentration:	<u>Not Analyzed</u>	(ppb / well ID)
Measurable Free Product Detected:	<u>No</u>	(Yes - ID well(s)/No)
Free Product Recovered This Quarter:	<u>None</u>	(Gallons)
Cumulative Free Product Recovered to Date:	<u>None</u>	(Gallons)
Water Wells or	<u>One Water Well</u>	(Type)
Surface Waters w/in 2,000 ft:	<u>Connelly Creek</u>	
Radius and Respective	<u>1,600 ft. West</u>	(Respective Distance
Direction From Site:	<u>1,000 ft. Southwest</u>	& Direction)
Current Remedial Action:	<u>NA</u>	(SVE/AS/P&T/NA etc.)
Permits for Discharge:	<u>None</u>	(NPDES, POTW, etc.)

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## **DISCUSSION:**

- The groundwater samples were received by Lancaster Laboratories on December 4, 2007. Based on a review of the laboratory reports, it appears that the submitted water samples were analyzed within the specified holding times and that Lancaster followed their appropriate quality assurance/quality control (QA/QC) procedures during analysis.
- TPH-g was detected at a concentration greater than the laboratory reporting limit (RL) in the groundwater sample collected from well MW-7 (400 micrograms per liter [ $\mu\text{g/L}$ ]). TPH-g was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- TPH-d was detected at a concentration greater than the Model Toxics Control Act (MTCA) Method A cleanup level in the groundwater sample collected from well MW-7 (970  $\mu\text{g/L}$ ). TPH-d was detected at a concentration greater than the RL, but less than the MTCA Method A cleanup level, in the groundwater sample collected from well MW-5 (99  $\mu\text{g/L}$ ). TPH-d was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- TPH-o was detected at a concentration greater than the RL, but less than the MTCA Method A cleanup level, in the groundwater samples collected from wells MW-7 and MW-8 (140  $\mu\text{g/L}$  and 290  $\mu\text{g/L}$ , respectively). TPH-o was not detected at concentrations greater than the RLs in the remaining groundwater samples collected this quarter.
- BTEX constituents were not detected at concentrations greater than the RLs in the groundwater samples collected this quarter.
- MTBE was detected at a concentration greater than the RL, but less than MTCA Method A cleanup level, in the groundwater sample collected from well MW-1 (0.6  $\mu\text{g/L}$ ). MTBE was not detected at a concentration greater than the RLs in the remaining groundwater samples collected this quarter.
- No drums were left on site.

## **WORK PROPOSED FOR NEXT QUARTER [1st - 2008]:**

- Measure depth to water, purge, and sample eight groundwater monitoring wells (MW-1 through MW-8). Submit groundwater samples for analysis for NWTPH-Gx, NWTPH-Dx, BTEX, and MTBE.

## **ATTACHMENTS:**

Figure 1: Site Location Map

Figure 2: Site Plan with Groundwater Elevations (12/3/07)

Figure 3: Site Plan with Groundwater Analytical Results (12/3/07)

Table 1: Summary of Groundwater Elevations and Sample Analytical Results

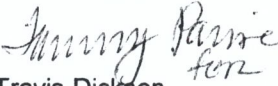
Table 2: Cumulative Summary of Groundwater Elevations and Sample Analytical Results

Attachment A: Laboratory Analytical Report and Chain-of-Custody Record


Attachment B: SECOR Monitoring Well Gauging, Purging and Sampling Procedures; Groundwater Monitoring Field Data Records

Attachment C: Limitations and Certifications for Non-phase I Reports

Prepared By:

  
Travis Dickson  
Project Scientist

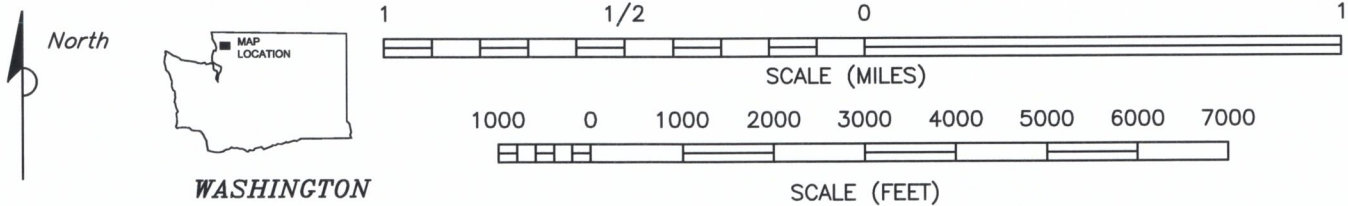
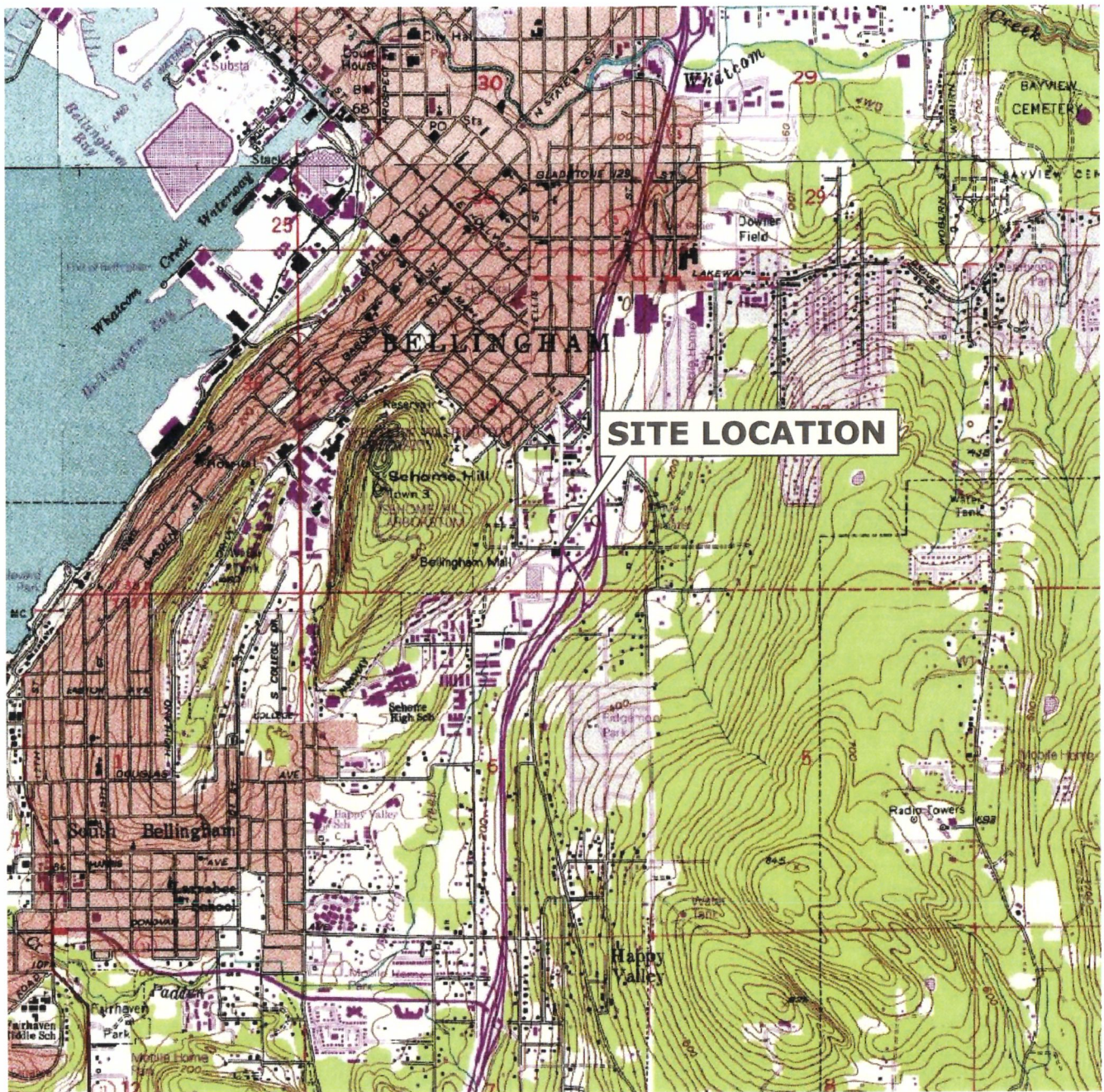
Reviewed By:

  
Joseph Rounds  
Senior Project Manager


TD/JR:po

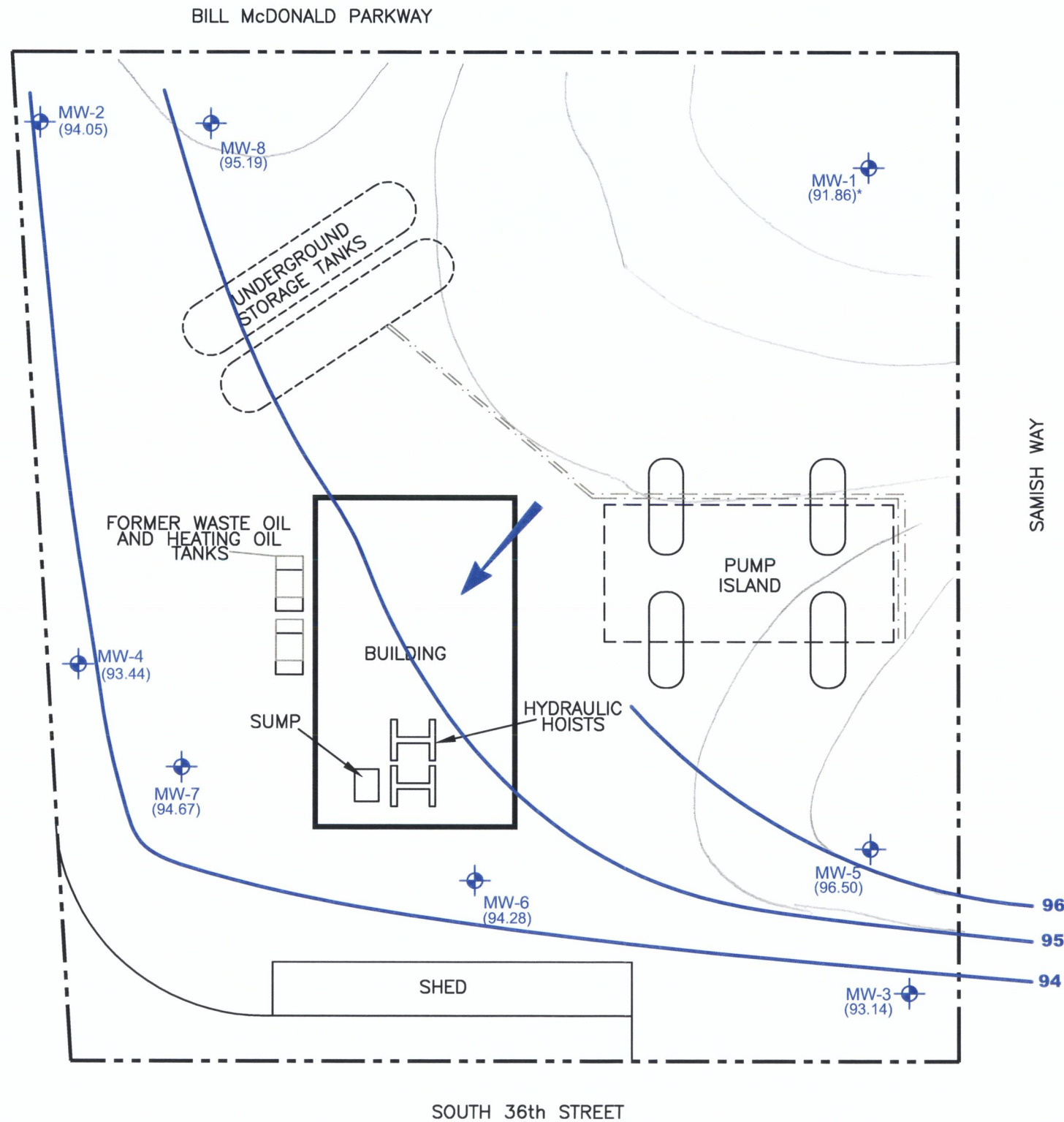
cc: LUST Coordinator, Washington State Department of Ecology - Bellevue, WA  
Mr. Victor Boulos, Keith Oil Corporation

## FIGURES



REFERENCE: USGS 7.5 MINUTE QUADRANGLE; BELLINGHAM SOUTH, WASHINGTON; 1972

 <b>SECOR</b> 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	FOR: <b>ConocoPhillips</b> FACILITY NO 256380 (RM & R 1571) 200 SOUTH 36th STREET BELLINGHAM, WASHINGTON		<b>SITE LOCATION MAP</b>		FIGURE: <b>1</b>
	JOB NUMBER: 01CP.01571.07	DRAWN BY: JCR	CHECKED BY:	APPROVED BY:	DATE: 9/24/07



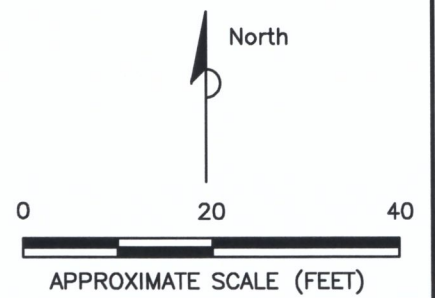
**LEGEND**

- MONITORING WELL LOCATION
- SITE BOUNDARY
- GROUNDWATER**
- (70.60) GROUNDWATER ELEVATION (FEET)
- INFERRED GROUNDWATER FLOW DIRECTION
- 94 — GROUNDWATER ELEVATION CONTOUR (FEET)

\* WELLS MW-1 NOT USED IN CONTOURING DUE TO AN ANOMALY

**NOTES:**

- 1). ALL LOCATIONS ARE APPROXIMATE.



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**SOURCE:**  
 BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC.  
 (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP--  
 06/10/03, PLATE 1, DATED 07/08/03, PROJECT  
 NO. 31065. CADD FILE 31065.13.DWG

 <b>SECOR</b> 12034 134th COURT, SUITE 102 REDMOND, WASHINGTON PHONE: (425) 372-1600 FAX: (425) 372-1650	FOR: <b>ConocoPhillips</b> FACILITY NO. 256380 (RM & R 1571) 200 SOUTH 36th STREET BELLINGHAM, WASHINGTON		<b>SITE PLAN WITH GROUNDWATER          ELEVATIONS          (12/03/07)</b>		FIGURE: <b>2</b>
	JOB NUMBER: 01CP.01571.41	DRAWN BY: EMS	CHECKED BY: PO	APPROVED BY: JR	DATE: 1/23/08

MW-8	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	<75	--	<76	<76
TPHo	<94	--	<95	290
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-2	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	<76	--	<76	<75
TPHo	<95	--	<95	<94
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-1	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	--	<50	<50	<50
TPHd	--	--	<76	<400
TPHo	--	--	<95	<500
B	--	<0.5	<0.5	<0.5
T	--	<0.7	<0.7	<0.7
E	--	<0.8	<0.8	<0.8
X	--	<0.8	<0.8	<0.8
MTBE	--	1	0.5	0.6
Pb	--	--	--	--

MW-4	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	83	--	170	<76
TPHo	<95	--	<95	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	0.6	<0.5
Pb	--	--	--	--




MW-7	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	340	210	250	400
TPHd	870	--	1,000	970
TPHo	<94	--	160	140
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	0.7	0.8	0.8	<0.5
Pb	--	--	--	--

MW-6	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	<76	--	<76	<76
TPHo	<95	--	<95	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

MW-5	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	<76	--	<76	99
TPHo	<94	--	<95	<95
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	0.6	<0.5	<0.5
Pb	--	--	--	--

MW-3	3/7/07	6/1/07	9/6/07	12/03/07
TPHg	<48	<50	<50	<50
TPHd	<76	--	<76	<75
TPHo	<95	--	<95	<94
B	<0.5	<0.5	<0.5	<0.5
T	<0.7	<0.7	<0.7	<0.7
E	<0.8	<0.8	<0.8	<0.8
X	<0.8	<0.8	<0.8	<0.8
MTBE	<0.5	<0.5	<0.5	<0.5
Pb	--	--	--	--

**LEGEND**

-  MONITORING WELL LOCATION
-  SITE BOUNDARY
-  INFERRED GROUNDWATER FLOW DIRECTION

**ANALYTES**

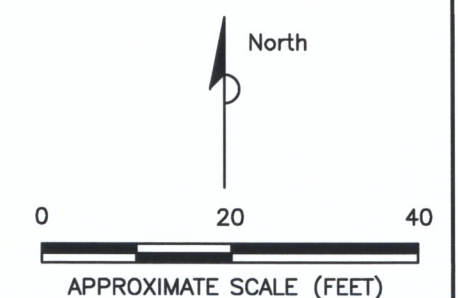
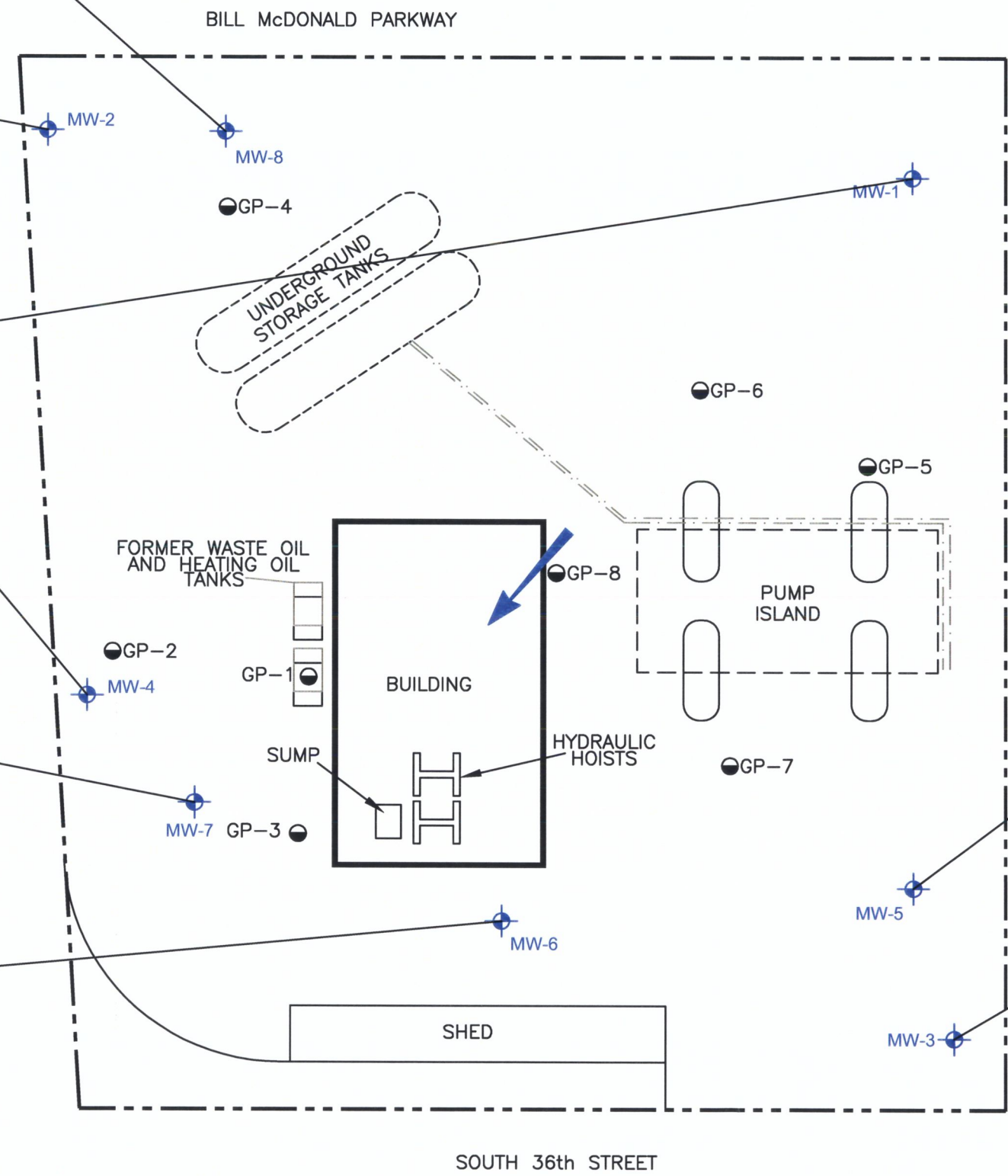
WELL ID	ANALYTES
TPHg	GASOLINE RANGE HYDROCARBONS
TPHd	DIESEL RANGE HYDROCARBONS
TPHo	HEAVY OIL RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYL BENZENE
X	TOTAL XYLENES
MTBE	METHYL TERT-BUTYL ETHER

UNITS IN MICROGRAMS PER LITER (µg/L)

- < LESS THAN LABORATORY REPORTING LIMITS
- ND NOT DETECTED AT OR ABOVE THE LABORATORY METHOD DETECTION LIMIT
- NOT ANALYZED OR NOT APPLICABLE



**NOTES:**

- 1). ALL LOCATIONS ARE APPROXIMATE



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	JOB NUMBER: 01CP.01571.41	DRAWN BY: EMS	CHECKED BY: PO
		DATE: 1/23/08	

## **TABLES**

**TABLE 1  
GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**

ConocoPhillips Facility No. 256380 (RM&R 1571)  
200 South 36th Street  
Bellingham, Washington

Well Name	Sample Date	Elevation Data		Total Petroleum Hydrocarbons			Aromatic Hydrocarbons					Lead
		Depth to Water	GW Elevation	Gasoline Range (ug/L)	Diesel Range (ug/L)	Heavy Range (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	Total Pb (ug/L)
MW-1	03/07/07	Unable to sample; Public Works truck parked over well.										
98.49	06/01/07	5.47	93.02	<50	--	--	<0.5	<0.7	<0.8	<0.8	1	--
	09/06/07	6.01	92.48	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	0.5	--
	12/03/07	6.63	91.86	<50	<400*	<500*	<0.5	<0.7	<0.8	<0.8	0.6	--
MW-2	03/07/07	7.80	92.94	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
100.74	06/01/07	8.38	92.36	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	9.06	91.68	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	12/03/07	6.69	94.05	<50	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-3	03/07/07	4.42	93.42	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
97.84	06/01/07	4.94	92.90	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	5.43	92.41	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	12/03/07	4.70	93.14	<50	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-4	03/07/07	5.81	93.63	<48	83	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
99.44	06/01/07	6.60	92.84	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	7.12	92.32	<50	170	<95	<0.5	<0.7	<0.8	<0.8	0.6	--
	12/03/07	6.00	93.44	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<5.0	--
MW-5	03/07/07	3.48	97.66	<48	<76	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
101.14	06/01/07	4.10	97.04	<50	--	--	<0.5	<0.7	<0.8	<0.8	0.6	--
	09/06/07	4.43	96.71	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	12/03/07	4.64	96.50	<50	99	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-6	03/07/07	5.08	94.66	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
99.74	06/10/07	5.73	94.01	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	6.22	93.52	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	12/03/07	5.46	94.28	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--

**TABLE 1  
GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**

ConocoPhillips Facility No. 256380 (RM&R 1571)  
200 South 36th Street  
Bellingham, Washington

Well Name	Sample Date	Elevation Data		Total Petroleum Hydrocarbons			Aromatic Hydrocarbons					Lead
		Depth to Water	GW Elevation	Gasoline Range (ug/L)	Diesel Range (ug/L)	Heavy Range (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-Benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	Total Pb (ug/L)
MW-7	03/07/07	6.00	93.64	340	<b>870</b>	<94	<0.5	<0.7	<0.8	<0.8	0.7	--
99.64	06/01/07	6.99	92.65	210	--	--	<0.5	<0.7	<0.8	<0.8	0.8	--
	09/06/07	7.47	92.17	250	<b>1,000</b>	160	<0.5	<0.7	<0.8	<0.8	0.8	--
	12/03/07	4.97	94.67	400	<b>970</b>	140	<0.5	<0.7	<0.8	<0.8	<0.5	--
MW-8	03/07/07	6.93	95.77	<48	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--
102.7	06/01/07	7.77	94.93	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--
	09/06/07	8.45	94.25	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--
	12/03/07	7.51	95.19	<50	<76	290	<0.5	<0.7	<0.8	<0.8	<0.5	--
<b>MTCA Method A Cleanup Levels:</b>				<b>1000/800<sup>a</sup></b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1000</b>	<b>700</b>	<b>1000</b>	<b>20</b>	<b>15</b>

**NOTES:**

All concentrations are in micrograms per liter (µg/L)(ppb).

DTW = Depth to water in feet below top of casing.

GW Elev. = Groundwater elevation relative to top of casing elevation.

TPH-g = Gasoline range hydrocarbons by Northwest Method NWTPH-Gx.

TPH-d and TPH-o = Diesel and heavy oil range hydrocarbons, respectively, by Northwest Method NWTPH-Dx.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 5030/8260B.

Total lead by ICP-US EPA Method 6010.

-- = Not Analyzed or Sampled.

< = Less than the stated laboratory reporting limit.

**Bolded** values equal or exceed MTCA Method A Cleanup Levels.

<sup>a</sup> Cleanup levels stated by MTCA Method A for TPH-G are 1000 µg/L when no benzene is present and 800 µg/L when benzene is present.

\* Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

**TABLE 2**  
**CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**  
 ConocoPhillips Facility No. 256380 (RM&R 1571)  
 200 South 36th Street  
 Bellingham, Washington  
 Page 1 of 1

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	Total Pb	Diss Pb	
MW1 TOC Elevation 98.49	6/9/2005	6.10	92.39	<100	<236	<472	<1	<1	<1	<3	1.26	--	<15	
	09/15/05	6.60	91.89	<48	<160	<200	<0.5	<0.5	<0.5	<1.5	--	--	<0.87	
	12/15/05	5.94	92.55	<48	170	110	<0.2	<0.2	<0.2	<0.6	--	--	--	
	03/10/06	5.82	92.67	<48	<76	<95	0.6	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	8.88	89.61	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	1.3	--	--	
	03/07/07	Unable to sample, Public Works truck parked over well.						--	--	--	--	--	--	--
	06/01/07	5.47	93.02	<50	--	--	<0.5	<0.7	<0.8	<0.8	1.0	--	--	
	09/06/07	6.01	92.48	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	0.5	--	--	
	12/03/07	6.63	91.86	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	0.6	--	--	
MW2 TOC Elevation 100.74	06/09/05	8.66	92.08	<100	<238	<475	<1	<1	<1	<3	<1	--	<15	
	09/15/05	5.40	95.34	<48	<75	<94	<0.5	<0.5	<0.5	<1.5	--	--	<0.87	
	12/15/05	8.44	92.30	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	03/10/06	8.28	92.46	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	8.71	92.03	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	<0.3	--	--	
	03/07/07	7.80	92.94	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	06/01/07	8.38	92.36	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	09/06/07	9.06	91.68	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	12/03/07	6.69	94.05	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
MW3 TOC Elevation 97.84	06/09/05	5.25	92.59	<100	<238	<475	<1	<1	<1	<3	<1	--	<15	
	09/15/05	7.20	90.64	<48	<75	<93	<0.5	<0.5	<0.5	<1.5	--	--	<0.87	
	12/15/05	5.09	92.75	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	03/10/06	4.75	93.09	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	5.40	92.44	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	<0.3	--	--	
	03/07/07	4.42	93.42	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	06/01/07	4.94	92.9	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	09/06/07	5.43	92.41	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	12/03/07	4.70	93.14	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
MW4 TOC Elevation 99.44	06/09/05	6.91	92.53	<100	<237	<473	<1	<1	<1	<3	<1	--	<15	
	09/15/05	6.10	93.34	<48	150	<93	<0.5	<0.5	<0.5	<1.5	--	--	<0.87	
	12/15/05	6.73	92.71	<48	180	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	03/10/06	6.28	93.16	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	6.80	92.64	<48	130	<95	<0.2	<0.2	<0.2	<0.6	0.8	--	--	
	03/07/07	5.81	93.63	<48	83	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	06/01/07	6.60	92.84	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	09/06/07	7.12	92.32	<50	170	<95	<0.5	<0.7	<0.8	<0.8	0.6	--	--	
	12/03/07	6.00	93.44	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<5.0	--	--	
MW-5 TOC Elevation 101.14	01/11/06	4.04	NE	<48	<75	<94	1.7	<0.2	<0.2	<0.6	--	<8.4	--	
	03/10/06	3.81	95.63	65	<75	<94	13	0.2	<0.2	<0.6	--	--	--	
	06/30/06	4.46	96.68	57	<76	<95	8.6	<0.2	<0.2	<0.6	<5.0	--	--	
	03/07/07	3.48	97.66	<48	<76	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	06/01/07	4.10	97.04	<50	--	--	<0.5	<0.7	<0.8	<0.8	0.6	--	--	
	09/06/07	4.43	96.71	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	12/03/07	4.64	96.50	<50	99	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
MW-6 TOC Elevation 99.74	01/11/06	4.89	NE	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	<8.4	--	
	03/10/06	5.47	94.27	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	6.50	93.24	<48	<80	<100	<0.2	<0.2	<0.2	<0.6	<0.3	--	--	
	03/07/07	5.08	94.66	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	06/10/07	5.73	94.01	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	09/06/07	6.22	93.52	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
	12/03/07	5.46	94.28	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	
MW-7 TOC Elevation 99.64	01/11/06	6.07	NE	160	780 <sup>b</sup>	<94 <sup>b</sup>	<0.2	<0.2	<0.2	<0.6	2.5	<8.4	--	
	03/10/06	6.71	92.93	140	540	<94	<0.2	<0.2	<0.2	<0.6	--	--	--	
	06/30/06	7.31	92.33	190	1,000	<480	0.2	<0.2	<0.2	<0.6	2	--	--	
	03/07/07	6.00	93.64	340	870	<94	<0.5	<0.7	<0.8	<0.8	0.7	--	--	
	06/01/07	6.99	92.65	210	--	--	<0.5	<0.7	<0.8	<0.8	0.8	--	--	
	09/06/07	7.47	92.17	250	1,000	160	<0.5	<0.7	<0.8	<0.8	0.8	--	--	
	12/03/07	4.97	94.67	400	970	140	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	

**TABLE 2**  
**CUMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS**  
 ConocoPhillips Facility No. 256380 (RM&R 1571)  
 200 South 36th Street  
 Bellingham, Washington  
 Page 1 of 1

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	MTBE	Total Pb	Diss Pb
MW-8 TOC Elevation 102.7	01/11/06	7.00	NE	<48	<76	<95	<0.2	<0.2	<0.2	<0.6	--	<8.4	--
	03/10/06	7.50	95.20	<48	<75	<94	<0.2	<0.2	<0.2	<0.6	--	--	--
	06/30/06	7.97	94.73	<48	<77	<96	<0.2	<0.2	<0.2	<0.6	<0.3	--	--
	03/07/07	6.93	95.77	<48	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--	--
	06/01/07	7.77	94.93	<50	--	--	<0.5	<0.7	<0.8	<0.8	<0.5	--	--
	09/06/07	8.45	94.25	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--
	12/03/07	7.51	95.19	<50	<76	290	<0.5	<0.7	<0.8	<0.8	<0.5	--	--
<b>MTCA Method A Cleanup Levels</b>				1000/800 <sup>a</sup>	500	500	5	1000	700	1000	20	15	15

**EXPLANATION:**

TOC = Top of Casing

All concentrations are in ug/L (ppb).

Wellhead elevations were taken from prior consultants reports.

DTW = Depth to water in feet below top of casing

GW Elev. = Groundwater elevation relative to top of casing elevation

TPH-G = Gasoline range hydrocarbons by Ecology Method NWTPH-Gx

TPH-D and TPH-O = Diesel and heavy oil range hydrocarbons, respectively, by Ecology Method NWTPH-Dx

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes

BTEX = Aromatic compounds by EPA Method 8020, 8021B or 8260B, refer to laboratory reports.

Prior to 12/12/03 Total Pb by EPA Method 6020; Diss Pb = Dissolved lead by EPA Method 6020

After 9/03/03 Total Pb = Total lead by ICP-USEPA Method 6010; Diss Pb = Dissolved lead by ICP-USEPA Method 6010

-- = Not Analyzed or Sampled

< = Less than the stated laboratory reporting limit

Shaded values equal or exceed MTCA Method A Cleanup Levels.

<sup>a</sup> Concentration levels stated by MTCA Method A for TPH-G are 1000 ug/L when no benzene is present and 800 ug/L when benzene is present.

Data collected before 12/12/03 are taken from prior consultants.

<sup>b</sup> = The recovery for the laboratory control sample (LCS) with this sample is below quality control limits. Since no sample remained from a reextraction the data is reported. The observed sample pattern includes #2 fuel/diesel and individual peaks eluting in the diesel organic range (DRO)

**ATTACHMENT A  
LABORATORY ANALYTICAL REPORT  
AND CHAIN-OF-CUSTODY RECORD**

**ANALYTICAL RESULTS**

Prepared for:

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425**SAMPLE GROUP**

The sample group for this submittal is 1067940. Samples arrived at the laboratory on Tuesday, December 04, 2007. The PO# for this group is 4509020542 and the release number is NOLL.

<u>Client Description</u>	<u>Lancaster Labs Number</u>
MW-1 Grab Water Sample	5226220
MW-2 Grab Water Sample	5226221
MW-3 Grab Water Sample	5226222
MW-4 Grab Water Sample	5226223
MW-5 Grab Water Sample	5226224
MW-6 Grab Water Sample	5226225
MW-7 Grab Water Sample	5226226
MW-8 Grab Water Sample	5226227

ELECTRONIC COPY TO	SECOR International	Attn: Alice Larsen
ELECTRONIC COPY TO	SECOR International	Attn: Meredith Redmon
ELECTRONIC COPY TO	SECOR International	Attn: Tammy Parise
ELECTRONIC COPY TO	SECOR International	Attn: Joan Brackin

Questions? Contact your Client Services Representative  
Barbara A Weyandt at (717) 656-2300

Respectfully Submitted,



Christine Dulaney  
Senior Specialist

**Lancaster Laboratories Sample No. WW 5226220**
**MW-1 Grab Water Sample**
**Site# 1571 (256380)**
**200 S. 36th St. - Bellingham, WA**

Collected: 12/03/2007 11:20 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW1

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	400.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	500.	ug/l	1
Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.						
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	0.6	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	12/10/2007 19:38	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	12/06/2007 16:03	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/08/2007 09:44	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007 16:03	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/08/2007 09:44	Stephanie A Selis	1



# Analysis Report

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Lancaster Laboratories Sample No. WW 5226220

**MW-1 Grab Water Sample**

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 11:20 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

**BELW1**

02135 Extraction - DRO Water  
Special

ECY 97-602 NWT PH-Dx  
06/97

1 12/08/2007 09:20 Denise L Trimby

1

**Lancaster Laboratories Sample No. WW 5226221**
**MW-2 Grab Water Sample**
**Site# 1571 (256380)**
**200 S. 36th St. - Bellingham, WA**

Collected: 12/03/2007 11:44 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW2

I 5 E W

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	75.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	94.	ug/l	1
08273	TPH by NWTTPH-Gx waters					
01645	TPH by NWTTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTTPH-Dx(water) w/SiGel	ECY 97-602 NWTTPH-Dx modified	1	12/10/2007 20:17	Matthew E Barton	1
08273	TPH by NWTTPH-Gx waters	ECY 97-602 NWTTPH-Gx modified	1	12/06/2007 16:33	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/08/2007 10:06	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007 16:33	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/08/2007 10:06	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTTPH-Dx 06/97	1	12/08/2007 09:20	Denise L Trimby	1



# Analysis Report

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Lancaster Laboratories Sample No. WW 5226221

MW-2 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 11:44 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

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BELW2



# Analysis Report

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Lancaster Laboratories Sample No. WW 5226222

**MW-3 Grab Water Sample**

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:00 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW3

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	75.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	94.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date	Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	12/10/2007	20:36	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	12/06/2007	17:03	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/08/2007	10:28	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007	17:03	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/08/2007	10:28	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	12/08/2007	09:20	Denise L Trimby	1



# Analysis Report

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Lancaster Laboratories Sample No. WW 5226222

MW-3 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:00 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW3



# Analysis Report

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Lancaster Laboratories Sample No. WW 5226223

**MW-4 Grab Water Sample**

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:25 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW4

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTTPH-Gx waters					
01645	TPH by NWTTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date	Time		
02211	TPH by NWTTPH-Dx(water) w/SiGel	ECY 97-602 NWTTPH-Dx modified	1	12/11/2007	09:26	Matthew E Barton	1
08273	TPH by NWTTPH-Gx waters	ECY 97-602 NWTTPH-Gx modified	1	12/06/2007	20:14	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/09/2007	10:21	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007	20:14	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/09/2007	10:21	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTTPH-Dx 06/97	1	12/08/2007	08:00	Ginelle L Feister	1

Lancaster Laboratories Sample No. WW 5226223

MW-4 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:25 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW4



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Lancaster Laboratories Sample No. **WW 5226224**

**MW-5 Grab Water Sample**

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:50 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW5  
I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	99.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date	Time		
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	12/11/2007	09:45	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	12/06/2007	20:44	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/09/2007	10:43	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007	20:44	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/09/2007	10:43	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	12/08/2007	08:00	Ginelle L Feister	1



# Analysis Report

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Page 2 of 2

Lancaster Laboratories Sample No. WW 5226224

MW-5 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 12:50 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

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Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW5

**Lancaster Laboratories Sample No. WW 5226225**
**MW-6 Grab Water Sample**
**Site# 1571 (256380)**
**200 S. 36th St. - Bellingham, WA**

Collected: 12/03/2007 13:10 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW6

I 5E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	N.D.	95.	ug/l	1
08273	TPH by NWTTPH-Gx waters					
01645	TPH by NWTTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTTPH-Dx(water) w/SiGel	ECY 97-602 NWTTPH-Dx modified	1	12/11/2007 10:05	Matthew E Barton	1
08273	TPH by NWTTPH-Gx waters	ECY 97-602 NWTTPH-Gx modified	1	12/06/2007 21:13	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/09/2007 11:06	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007 21:13	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/09/2007 11:06	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTTPH-Dx 06/97	1	12/08/2007 08:00	Ginelle L Feister	1

Lancaster Laboratories Sample No. WW 5226225

MW-6 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 13:10 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW6

**Lancaster Laboratories Sample No. WW 5226226**
**MW-7 Grab Water Sample**
**Site# 1571 (256380)**
**200 S. 36th St. - Bellingham, WA**

Collected: 12/03/2007 13:30 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW7

I 5 E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	970.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	140.	95.	ug/l	1
08273	TPH by NWTPH-Gx waters					
01645	TPH by NWTPH-Gx waters	n.a.	400.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
02211	TPH by NWTPH-Dx(water) w/SiGel	ECY 97-602 NWTPH-Dx modified	1	12/11/2007	19:58	Matthew E Barton	1
08273	TPH by NWTPH-Gx waters	ECY 97-602 NWTPH-Gx modified	1	12/06/2007	21:43	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/10/2007	04:14	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007	21:43	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/10/2007	04:14	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	12/08/2007	08:00	Ginelle L Feister	1

Lancaster Laboratories Sample No. WW 5226226

MW-7 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 13:30 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW7

**Lancaster Laboratories Sample No. WW 5226227**
**MW-8 Grab Water Sample**
**Site# 1571 (256380)**
**200 S. 36th St. - Bellingham, WA**

Collected: 12/03/2007 13:50 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips

5528 NW Doane Ave.

Portland OR 97210

BELW8

I 5 E w

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02211	TPH by NWTTPH-Dx(water) w/SiGel					
02095	Diesel Range Organics	n.a.	N.D.	76.	ug/l	1
02096	Heavy Range Organics	n.a.	290.	95.	ug/l	1
08273	TPH by NWTTPH-Gx waters					
01645	TPH by NWTTPH-Gx waters	n.a.	N.D.	50.	ug/l	1
02300	GC/MS Volatiles					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.7	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.8	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.8	ug/l	1

State of Washington Lab Certification No. C259

Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis		Analyst	Dilution Factor
			Trial#	Date and Time		
02211	TPH by NWTTPH-Dx(water) w/SiGel	ECY 97-602 NWTTPH-Dx modified	1	12/12/2007 10:14	Matthew E Barton	1
08273	TPH by NWTTPH-Gx waters	ECY 97-602 NWTTPH-Gx modified	1	12/06/2007 22:12	Steven A Skiles	1
02300	GC/MS Volatiles	SW-846 8260B	1	12/10/2007 04:36	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2007 22:12	Steven A Skiles	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/10/2007 04:36	Stephanie A Selis	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTTPH-Dx 06/97	1	12/08/2007 08:00	Ginelle L Feister	1

Lancaster Laboratories Sample No. WW 5226227

MW-8 Grab Water Sample

Site# 1571 (256380)

200 S. 36th St. - Bellingham, WA

Collected: 12/03/2007 13:50 by TD

Account Number: 11817

Submitted: 12/04/2007 09:05

Reported: 12/21/2007 at 16:39

Discard: 01/21/2008

ConocoPhillips  
5528 NW Doane Ave.  
Portland OR 97210

BELW8

## Quality Control Summary

 Client Name: ConocoPhillips  
 Reported: 12/21/07 at 04:39 PM

Group Number: 1067940

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 07340A07A TPH by NWTPH-Gx waters	N.D.	50.	ug/l	114	103	75-135	11	30
Batch number: 073410013A Diesel Range Organics Heavy Range Organics	N.D. N.D.	80. 100.	ug/l ug/l	78		61-106		
Batch number: 073410022A Diesel Range Organics Heavy Range Organics	N.D. N.D.	80. 100.	ug/l ug/l	75	70	61-106	7	20
Batch number: L073421AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D. N.D. N.D. N.D. N.D.	0.5 0.5 0.7 0.8 0.8	ug/l ug/l ug/l ug/l ug/l	91 99 99 100 101	91 99 99 99 101	73-119 78-119 85-115 82-119 83-113	0 0 0 1 0	30 30 30 30 30
Batch number: L073431AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D. N.D. N.D. N.D. N.D.	0.5 0.5 0.7 0.8 0.8	ug/l ug/l ug/l ug/l ug/l	91 96 96 96 99	93 95 96 96 99	73-119 78-119 85-115 82-119 83-113	2 1 0 0 0	30 30 30 30 30
Batch number: L073441AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D. N.D. N.D. N.D. N.D.	0.5 0.5 0.7 0.8 0.8	ug/l ug/l ug/l ug/l ug/l	89 94 94 95 97	91 96 96 97 99	73-119 78-119 85-115 82-119 83-113	3 2 2 2 2	30 30 30 30 30

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 07340A07A TPH by NWTPH-Gx waters						UNSPK: P225136			
Batch number: 073410013A Diesel Range Organics Heavy Range Organics						BKG: 5226220	N.D. N.D.	0 (1) 0 (1)	20 20

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

 Client Name: ConocoPhillips  
 Reported: 12/21/07 at 04:39 PM

Group Number: 1067940

### Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup</u> <u>RPD</u> <u>Max</u>
Batch number: L073421AA	Sample number(s): 5226220-5226222 UNSPK: P225109								
Methyl Tertiary Butyl Ether	89		69-127						
Benzene	103		83-128						
Toluene	103		83-127						
Ethylbenzene	103		82-129						
Xylene (Total)	104		82-130						
Batch number: L073431AA	Sample number(s): 5226223-5226225 UNSPK: P226929								
Methyl Tertiary Butyl Ether	90		69-127						
Benzene	100		83-128						
Toluene	100		83-127						
Ethylbenzene	101		82-129						
Xylene (Total)	102		82-130						
Batch number: L073441AA	Sample number(s): 5226226-5226227 UNSPK: 5226227								
Methyl Tertiary Butyl Ether	95	93	69-127	2	30				
Benzene	103	102	83-128	1	30				
Toluene	103	101	83-127	2	30				
Ethylbenzene	103	101	82-129	2	30				
Xylene (Total)	105	103	82-130	2	30				

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: TPH by NWTPH-Gx waters  
 Batch number: 07340A07A  
 Trifluorotoluene-F

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5226220	117
5226221	119
5226222	122
5226223	120
5226224	118
5226225	118
5226226	120
5226227	120
Blank	117
LCS	128
LCSD	124
MS	125

---

Limits: 63-135

 Analysis Name: TPH by NWTPH-Dx(water) w/SiGel  
 Batch number: 073410013A  
 Orthoterphenyl

#### \*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

 Client Name: ConocoPhillips  
 Reported: 12/21/07 at 04:39 PM

Group Number: 1067940

### Surrogate Quality Control

5226220	102
5226221	105
5226222	103
Blank	97
DUP	87
LCS	111

Limits: 50-150

 Analysis Name: TPH by NWTPH-Dx(water) w/SiGel  
 Batch number: 073410022A  
 Orthoterphenyl

5226223	100
5226224	104
5226225	90
5226226	114
5226227	91
Blank	97
LCS	109
LCSD	104

Limits: 50-150

 Analysis Name: GC/MS Volatiles  
 Batch number: L073421AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5226220	110	106	105	98
5226221	108	107	109	99
5226222	108	105	108	99
Blank	108	106	107	99
LCS	107	104	110	105
LCSD	107	105	110	105
MS	107	106	110	105

Limits: 80-116                      77-113                      80-113                      78-113

 Analysis Name: GC/MS Volatiles  
 Batch number: L073431AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5226223	110	106	104	97
5226224	108	106	107	97
5226225	110	107	105	97
Blank	109	107	105	98
LCS	108	106	108	104
LCSD	108	106	108	104
MS	109	107	108	104

Limits: 80-116                      77-113                      80-113                      78-113

 Analysis Name: GC/MS Volatiles  
 Batch number: L073441AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5226226	109	108	104	101
5226227	109	107	107	98

#### \*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: ConocoPhillips  
Reported: 12/21/07 at 04:39 PM

Group Number: 1067940

### Surrogate Quality Control

Blank	111	107	104	98
LCS	109	106	108	103
LCSD	110	105	108	104
MS	108	106	108	102
MSD	110	107	107	102
Limits:	80-116	77-113	80-113	78-113

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



## Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers	Inorganic Qualifiers
<b>A</b> TIC is a possible aldol-condensation product	<b>B</b> Value is <CRDL, but ≥IDL
<b>B</b> Analyte was also detected in the blank	<b>E</b> Estimated due to interference
<b>C</b> Pesticide result confirmed by GC/MS	<b>M</b> Duplicate injection precision not met
<b>D</b> Compound quantitated on a diluted sample	<b>N</b> Spike amount not within control limits
<b>E</b> Concentration exceeds the calibration range of the instrument	<b>S</b> Method of standard additions (MSA) used for calculation
<b>J</b> Estimated value	<b>U</b> Compound was not detected
<b>N</b> Presumptive evidence of a compound (TICs only)	<b>W</b> Post digestion spike out of control limits
<b>P</b> Concentration difference between primary and confirmation columns >25%	<b>*</b> Duplicate analysis not within control limits
<b>U</b> Compound was not detected	<b>+</b> Correlation coefficient for MSA <0.995
<b>X,Y,Z</b> Defined in case narrative	

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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**ATTACHMENT B  
SECOR MONITORING WELL GAUGING, PURGING AND  
SAMPLING PROCEDURES;  
GROUNDWATER MONITORING FIELD DATA RECORDS**

# SECOR

## DAILY FIELD LOG

Page: 1 of 1  
Date: 12-5-07

Client: <b>ConocoPhillips</b>	Site No: <u>256300</u>	Project No: <u>01571</u>
Scope of Work: <u>x</u> Quarter Monitoring/Sampling		
Describe Daily Activities:		
Gauged <u>8</u> monitoring wells.	Number of drums left on site: <u>0</u>	
Purged <u>8</u> monitoring wells.		
Sampled <u>8</u> monitoring wells.		
<u>Field Notes:</u>		
10:00 arrived on-site		
checked in with Meredith + store manager		
Go over HASP, PTW, apply PPE.		
Set up decon.		
10:25 gauged <u>8</u> wells.		
Began sampling		
MW-1 - 11:20	Decon equip + pack up	
MW-2 - 11:40	check in with Meredith.	
MW-3 - 12:00	leave site.	
MW-4 - 12:25		
MW-5 - 12:50		
MW-6 - 1:10		
MW-7 - 1:30		
MW-8 - 1:50		
Arrived on Site: <u>10:00</u>	Departed Site: <u>2:30</u>	
Decontamination Procedures: <b>3-Stage (Alconox Wash, Tap Water Rinse, &amp; Distilled Water Rinse)</b>		
Daily Health and Safety Log Completed?: <u>Yes</u>	Utility Locations Checked?: <u>—</u>	
Important Conversations: <u>none</u>		
Important Changes in Scope of Work: <u>None</u>		
Weather Conditions: <u>Rainy</u>	Subcontractors On Site: <u>—</u>	
SECOR Personnel On Site: <u>Travis Dickson</u>		
Signed: <u>[Signature]</u> <u>[Signature]</u>	Date: <u>12-03-07</u>	

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MW-1

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 40 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: Ray

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 6.63 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.
- E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:
 

	<u>3 Well Vols.</u>	<u>5 Well Vols.</u>	
2" Diameter	0.5 gals/ft	0.82 gals/ft	x feet of water = _____ PV (Gal)
4" Diameter	2.0 gals/ft	3.25 gals/ft	x feet of water = _____ PV (Gal)
6" Diameter	4.4 gals/ft	7.35 gals/ft	x feet of water = _____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 11:09 END: 11:20

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>11:14</u>	<u>C</u>	<u>-8</u>	<u>-195</u>	<u>7.21</u>		<u>20.36</u>	<u>0.631</u>	<u>6.63</u>
2 <sup>nd</sup> Volume:	<u>11:17</u>	<u>C</u>	<u>-7</u>	<u>-180</u>	<u>7.33</u>		<u>21.03</u>	<u>0.659</u>	<u>6.68</u>
3 <sup>rd</sup> Volume:	<u>11:20</u>	<u>C</u>	<u>-5</u>	<u>-110</u>	<u>7.49</u>		<u>21.40</u>	<u>0.710</u>	<u>6.71</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 6.71

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-8</u>	<u>11:20</u>	<u>6-Vials 1 amber</u>	

**COMMENTS:**  
Well full of water

**Casing Capacities:**  
 2-inch hole.....0.16 gal/in ft.  
 4-inch hole.....0.65 gal/in ft.  
 6.5-inch hole.....1.70 gal/in ft.  
 8-inch hole.....2.60 gal/in ft.  
 10-inch hole.....4.10 gal/in ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well: \_\_\_\_\_  
 Original Water Column: \_\_\_\_\_ x 0.80 = \_\_\_\_\_  
 Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. M61-2

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 40 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 6.69 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.
- E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:
 

	3 Well Vols.	5 Well Vols.		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water	= _____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water	= _____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water	= _____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 11:33 END: 11:44

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>11:38</u>	<u>C</u>	<u>6.10</u>	<u>90</u>	<u>6.91</u>		<u>18.91</u>	<u>0.532</u>	<u>6.69</u>
2 <sup>nd</sup> Volume:	<u>11:41</u>	<u>C</u>	<u>6.29</u>	<u>98</u>	<u>6.98</u>		<u>18.76</u>	<u>0.549</u>	<u>6.71</u>
3 <sup>rd</sup> Volume:	<u>11:44</u>	<u>C</u>	<u>6.39</u>	<u>104</u>	<u>7.03</u>		<u>18.31</u>	<u>0.559</u>	<u>6.75</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 6.75

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-2</u>	<u>11:44</u>	<u>6 vials 1 amber</u>	

COMMENTS: Well full of water

- Casing Capacities:
- 2-inch hole.....0.16 gal/in ft.
  - 4-inch hole.....0.65 gal/in ft.
  - 6.5-inch hole.....1.70 gal/in ft.
  - 8-inch hole.....2.60 gal/in ft.
  - 10-inch hole.....4.10 gal/in ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well:

Original Water Column: \_\_\_\_\_ x 0.80 = \_\_\_\_\_

Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MU-3

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 49 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 4.70 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.
- E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:
 

	<u>3 Well Vols.</u>	<u>5 Well Vols.</u>	
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ = _____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water _____ = _____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water _____ = _____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 11:49 END: 12:00

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>11:54</u>	<u>C</u>	<u>6.19</u>	<u>-96</u>	<u>7.21</u>	<u>1</u>	<u>18.32</u>	<u>0.679</u>	<u>4.70</u>
2 <sup>nd</sup> Volume:	<u>11:57</u>	<u>C</u>	<u>6.70</u>	<u>-99.7</u>	<u>7.19</u>	<u>1</u>	<u>18.96</u>	<u>0.710</u>	<u>4.71</u>
3 <sup>rd</sup> Volume:	<u>12:00</u>	<u>C</u>	<u>6.77</u>	<u>-104.3</u>	<u>7.08</u>	<u>1</u>	<u>18.96</u>	<u>0.712</u>	<u>4.76</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 4.76

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MU-3</u>	<u>12:00</u>	<u>6 vols 1 amber</u>	

COMMENTS: MU full of water

- Casing Capacities:
- 2-inch hole.....0.16 gal/lin ft.
  - 4-inch hole.....0.65 gal/lin ft.
  - 6.5-inch hole.....1.70 gal/lin ft.
  - 8-inch hole.....2.60 gal/lin ft.
  - 10-inch hole.....4.10 gal/lin ft.

Recharge Calculation at Time of Sample Collection:

Total Depth of Well:

Original Water Column: \_\_\_\_\_ x 0.80 = -( \_\_\_\_\_ )

Collect sample when Depth to Water measures  
Less than or equal to:

**SECOR**  
**GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MW-4

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 40 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 6.00 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.
- E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:
 

	<u>3 Well Vols.</u>	<u>5 Well Vols.</u>		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ =	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water _____ =	_____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water _____ =	_____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 12:11 END: 12:25

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>12:16</u>	<u>C</u>	<u>709</u>	<u>39</u>	<u>7.00</u>	<u> </u>	<u>18.03</u>	<u>0.550</u>	<u>6.00</u>
2 <sup>nd</sup> Volume:	<u>12:19</u>	<u>C</u>	<u>710</u>	<u>48</u>	<u>7.09</u>	<u> </u>	<u>18.17</u>	<u>0.631</u>	<u>6.01</u>
3 <sup>rd</sup> Volume:	<u>12:22</u>	<u>C</u>	<u>723</u>	<u>53</u>	<u>7.31</u>	<u> </u>	<u>18.21</u>	<u>0.680</u>	<u>6.1</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 6.13

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-4</u>	<u>6 hrs later</u> <u>12:25</u>	<u>→</u>	

**COMMENTS:**  
\_\_\_\_\_  
\_\_\_\_\_

Casing Capacities:  
2-inch hole.....0.16 gal/lin ft.  
4-inch hole.....0.65 gal/lin ft.  
6.5-inch hole.....1.70 gal/lin ft.  
8-inch hole.....2.60 gal/lin ft.  
10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**

Total Depth of Well:  
Original Water Column: \_\_\_\_\_ x 0.80 = ---  
Collect sample when Depth to Water measures  
**Less than or equal to:**

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MLW-5

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: \_\_\_\_\_ °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 4.64 FT. or IN.
- B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.
- C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.
- D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.

**E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:**

	<u>3 Well Vols.</u>	<u>5 Well Vols.</u>	
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water = _____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water = _____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water = _____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 12:38 END: 12:50

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	12:43	C	801	-71	7.20		20.01	0.823	4.64
2 <sup>nd</sup> Volume:	12:47	C	833	-73	7.31		21.02	0.813	4.68
3 <sup>rd</sup> Volume:	12:50	C	861	-79.6	7.33		21.23	0.801	4.71
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 4.71

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MLW-5</u>	<u>12:50</u>	<u>6 vials</u>	
		<u>1 amber</u>	

**COMMENTS:**  
NO bolts  
MLW-5 Full of water

Casing Capacities:  
2-inch hole.....0.16 gal/lin ft.  
4-inch hole.....0.65 gal/lin ft.  
6.5-inch hole.....1.70 gal/lin ft.  
8-inch hole.....2.60 gal/lin ft.  
10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**  
Total Depth of Well: \_\_\_\_\_  
Original Water Column: \_\_\_\_\_ x 0.80 = --(\_\_\_\_\_)  
Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MG-6

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 49 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 5.46 FT. or IN.  
 B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.  
 C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.  
 D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.  
 E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:

	3 Well Vols.	5 Well Vols.		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ =	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water _____ =	_____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water _____ =	_____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 12:56 END: 1:10

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>1:03</u>	<u>C</u>	<u>0.01</u>	<u>-80</u>	<u>7.21</u>	<u> </u>	<u>16.96</u>	<u>0.801</u>	<u>5.46</u>
2 <sup>nd</sup> Volume:	<u>1:04</u>	<u>C</u>	<u>0.35</u>	<u>-81.1</u>	<u>7.18</u>	<u> </u>	<u>17.04</u>	<u>0.796</u>	<u>5.50</u>
3 <sup>rd</sup> Volume:	<u>1:07</u>	<u>C</u>	<u>0.71</u>	<u>-83.6</u>	<u>7.10</u>	<u> </u>	<u>17.68</u>	<u>0.777</u>	<u>5.51</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 5.51

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MG-6</u>	<u>1:10</u>	<u>6 vials</u> <u>1 amber</u>	
_____	_____	_____	_____
_____	_____	_____	_____

**COMMENTS:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well: \_\_\_\_\_  
 Original Water Column: \_\_\_\_\_ x 0.80 = \_\_\_\_\_  
 Collect sample when Depth to Water measures  
Less than or equal to:

# SECOR GROUNDWATER SAMPLING FIELD DATA SHEET

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MW-7  
 FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 49 °F or °C  
 FIELD PERSONNEL: Travis Dickson  
 WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 4.97 FT. or IN.  
 B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.  
 C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.  
 D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.  
 E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes:

	3 Well Vols.	5 Well Vols.		
2" Diameter =	0.5 gals/ft	0.82 gals/ft	x feet of water _____ =	_____ PV (Gal)
4" Diameter =	2.0 gals/ft	3.25 gals/ft	x feet of water _____ =	_____ PV (Gal)
6" Diameter =	4.4 gals/ft	7.35 gals/ft	x feet of water _____ =	_____ PV (Gal)

PURGING METHOD: LOW FLOW DURATION: START: 1:19 END: 1:30

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>1:24</u>	<u>C</u>	<u>819</u>	<u>-109</u>	<u>7.19</u>	<u> </u>	<u>20.67</u>	<u>0.681</u>	<u>4.97</u>
2 <sup>nd</sup> Volume:	<u>1:27</u>	<u>C</u>	<u>803</u>	<u>-103</u>	<u>7.21</u>	<u> </u>	<u>20.03</u>	<u>0.698</u>	<u>5.00</u>
3 <sup>rd</sup> Volume:	<u>1:30</u>	<u>C</u>	<u>781</u>	<u>-101</u>	<u>7.23</u>	<u> </u>	<u>19.79</u>	<u>0.709</u>	<u>5.01</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

**SAMPLES COLLECTED:** Depth to Water at time of sample collection: 5.01

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-7</u>	<u>1:30</u>	<u>6 W105</u>	
		<u>1 amber</u>	

**COMMENTS:** Well full of water

Casing Capacities:  
 2-inch hole.....0.16 gal/lin ft.  
 4-inch hole.....0.65 gal/lin ft.  
 6.5-inch hole.....1.70 gal/lin ft.  
 8-inch hole.....2.60 gal/lin ft.  
 10-inch hole.....4.10 gal/lin ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well: \_\_\_\_\_  
 Original Water Column: \_\_\_\_\_ x 0.80 = \_\_\_\_\_  
 Collect sample when Depth to Water measures \_\_\_\_\_  
 Less than or equal to: \_\_\_\_\_

**SECOR  
GROUNDWATER SAMPLING FIELD DATA SHEET**

SECOR PN: \_\_\_\_\_ ENFOS PO# \_\_\_\_\_ DATE: 12-03-07 WELL NO. MW-8

FACILITY NAME: \_\_\_\_\_ TEMPERATURE: 40 °F or °C

FIELD PERSONNEL: Travis Dickson

WEATHER: \_\_\_\_\_

**FIELD MEASUREMENTS:**

- A. Static Water Level (SWL) below top of casing/piezometer: 7.51 FT. or IN.  
 B. Thickness of Free Product, if present: \_\_\_\_\_ Inches \_\_\_\_\_ FT. or IN.  
 C. Total Depth of well (TD) from top of casing/piezometer: \_\_\_\_\_ FT. or IN.  
 D. Height of Water Column in casing (h = TD - SWL): \_\_\_\_\_ FT. or IN.  
 E. Useful approximate Purge Volumes (PV) per foot of water column for common casing sizes;
- |               |                     |                     |                         |                |
|---------------|---------------------|---------------------|-------------------------|----------------|
|               | <u>3 Well Vols.</u> | <u>5 Well Vols.</u> |                         |                |
| 2" Diameter = | 0.5 gals/ft         | 0.82 gals/ft        | x feet of water _____ = | _____ PV (Gal) |
| 4" Diameter = | 2.0 gals/ft         | 3.25 gals/ft        | x feet of water _____ = | _____ PV (Gal) |
| 6" Diameter = | 4.4 gals/ft         | 7.35 gals/ft        | x feet of water _____ = | _____ PV (Gal) |

PURGING METHOD: LOW FLOW DURATION: START: 1:39 END: 1:50

OBSERVATIONS:	Time	Color	Turbidity	ORP	pH	DO	Temp.	Conduct.	SWL
1 <sup>st</sup> Volume:	<u>1:44</u>	<u>C</u>	<u>621</u>	<u>70</u>	<u>7.19</u>		<u>19.01</u>	<u>0.869</u>	<u>7.51</u>
2 <sup>nd</sup> Volume:	<u>1:47</u>	<u>C</u>	<u>616</u>	<u>66</u>	<u>7.21</u>		<u>19.36</u>	<u>0.835</u>	<u>7.58</u>
3 <sup>rd</sup> Volume:	<u>1:50</u>	<u>C</u>	<u>603</u>	<u>63</u>	<u>7.29</u>		<u>19.44</u>	<u>0.817</u>	<u>7.60</u>
4 <sup>th</sup> Volume:									
Addl. Volumes:									

TOTAL VOLUME OF WATER PURGED FROM WELL: .25 gallons  
 PURGE WATER STORED/DISPOSED OF WHERE/HOW: Taken offsite

SAMPLES COLLECTED: Depth to Water at time of sample collection: 7.64

Sample Number(s)	Time	Size/Number of Container(s)	Preservative
<u>MW-8</u>	<u>1:50</u>	<u>2e 400s 1 amber</u>	
_____	_____	_____	_____
_____	_____	_____	_____

COMMENTS: Well full of water.

Casing Capacities:  
 2-inch hole.....0.16 gal/in ft.  
 4-inch hole.....0.65 gal/in ft.  
 6.5-inch hole.....1.70 gal/in ft.  
 8-inch hole.....2.60 gal/in ft.  
 10-inch hole.....4.10 gal/in ft.

**Recharge Calculation at Time of Sample Collection:**  
 Total Depth of Well: \_\_\_\_\_  
 Original Water Column \_\_\_\_\_ x 0.80 = \_\_\_\_\_  
 Collect sample when Depth to Water measures  
Less than or equal to:

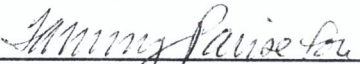


**ATTACHMENT C  
LIMITATIONS AND CERTIFICATIONS  
FOR NON-PHASE I REPORTS**

	<b>LIMITATIONS AND CERTIFICATIONS FOR NON-PHASE I REPORTS</b>	<b>QA/QC-302B</b>	
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