release 471259
TOSCO 6380
Bellingham

DATE: February 25, 2005

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ConocoPhillips

GROUNDWATER MONITORING REPORT

Site No.: 6380 Address: 200 South 36th Street, Bellingham, Washington
ConocoPhillips Site Manager: Kipp W. Eckert
Consultant / Contact Person: SECOR International Inc. / Alice Larsen
Primary Agency/Regulatory ID No.: Washington State Department of Ecology
SECOR Project No: 01CP.06380.04

WORK PERFORMED THIS QUARTER(S) [4th - 2004]:

- On 12/29/04, SECOR personnel monitored, purged, and sampled four of the existing network of four groundwater monitoring wells (MW-1 through MW-4). Samples were submitted to Severn Trent Laboratories, Inc. (STL) for analysis of gasoline-range hydrocarbons per NWTPH-Gx Method, diesel and motor oil-range hydrocarbons per NWTPH-Dx Method modified with an acid/silica gel cleanup, BTEX per USEPA Method 8021B and dissolved lead per ICP-USEPA Method 6010.

WORK PROPOSED FOR NEXT QUARTER [1st - 2005]:

- Measure depth to water, purge, and sample 4 groundwater monitoring wells (MW-1 through MW-4). Submit groundwater samples to STL for analysis for NWTPH-Gx, NWTPH-Dx, BTEX and total lead.

SUMMARY:

Frequency of Sampling Events:	Quarterly	(03/05,06/05,09/05,12/05)
Depth to Groundwater:	5.42 ft. (MW-1)	(Measured Feet Below
	7.82 ft. (MW-2)	Top of Well Casing)
Groundwater Gradient:	Northwest	(Direction)
	0.002 ft./ft.	(Magnitude)
Maximum TPH-G Concentrations:	None Detected	(ppb / well ID)
Maximum TPH-D Concentrations:	None Detected	(ppb / well ID)
Maximum TPH-O Concentrations:	None Detected	(ppb / well ID)
Maximum Benzene Concentration:	None Detected	(ppb / well ID)
Maximum Dissolved Lead Concentration:	None Detected	(ppb / well ID)
Measurable Free Product Detected:	No	(Yes - ID well(s)/No)
Free Product Recovered This Quarter:	None	(Gallons)
Cumulative Free Product Recovered to Date:	None	(Gallons)
Water Wells or	i.) One Water Well	(Type)
Surface Waters w/in 2,000 ft:	ii.) Connelly Creek	
Radius and Respective	i.) 1600 ft. West	(Respective Distance
Direction From Site:	ii.) 1000 ft. Southwest	& Direction)
Current Remedial Action:	MNA	(SVE/AS/P&T/MNA etc.)
Permits for Discharge:	None	(NPDES, POTW, etc.)

entered
CP
3-21-05

DISCUSSION:

- No gasoline, diesel, or heavy-oil-range-hydrocarbons were detected above the laboratory reporting limits (RLs) in any of the wells sampled.
- No BTEX constituents were detected above the RLs in any of the wells sampled.
- No dissolved lead was detected above the RIs in any of the wells sampled.
- No drums were left on site.

ATTACHMENTS:

Figure 1: Site Location Map
Figure 2: Site Plan with Groundwater Elevations (12/29/04)
Figure 3: Site Plan with and Analytical Results (3/24/04 – 12/29/04)
Table 1: Summary of Cumulative Groundwater Elevations and Sample Analytical Results
Laboratory Analytical Report and Chain of Custody Record
Groundwater Monitoring Field Data Records

Prepared By:

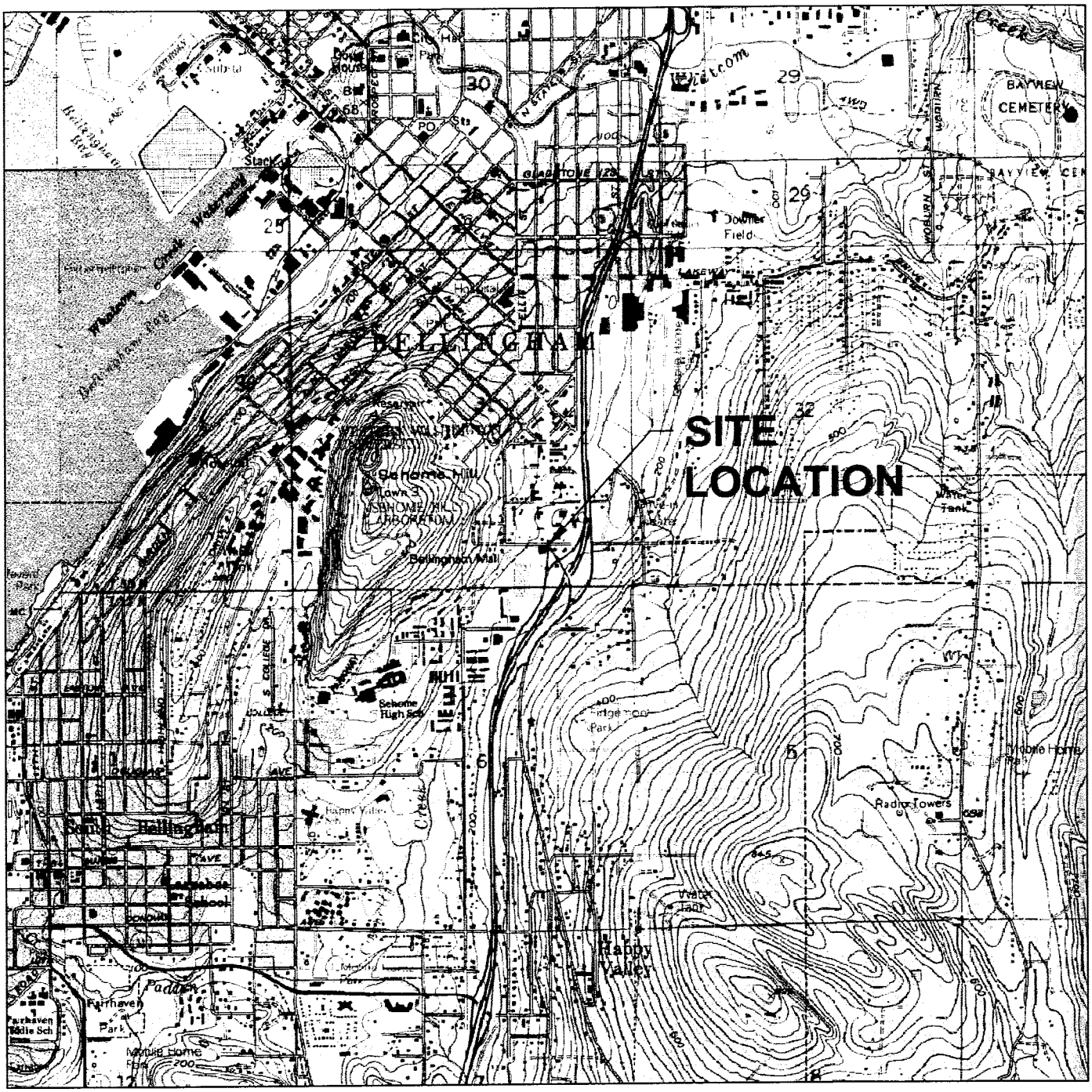
August Welch
Staff Scientist

State of Washington
1663
Licensed Geologist
Doane E. Cafferty

Reviewed By:

Doane E. Cafferty, L.G.
Project Geologist

cc: LUST Coordinator, Washington State Department of Ecology, Northwest Regional Office
Mr. Frank Diehl, Keith Oil Corporation



North

WASHINGTON

1 1/2 0 1

SCALE (MILES)

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE (FEET)

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

12034 134th COURT, SUITE 102
REDMOND, WASHINGTON
PHONE: (425) 372-1600 FAX: (425) 372-1650

PREPARED FOR:
ConocoPhillips
FACILITY NO 6380
200 SOUTH 36th STREET
BELLINGHAM, WASHINGTON

SITE LOCATION MAP

FIGURE: **1**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
01CP.06380.04	S. SIMMONS	MR		2/5/04

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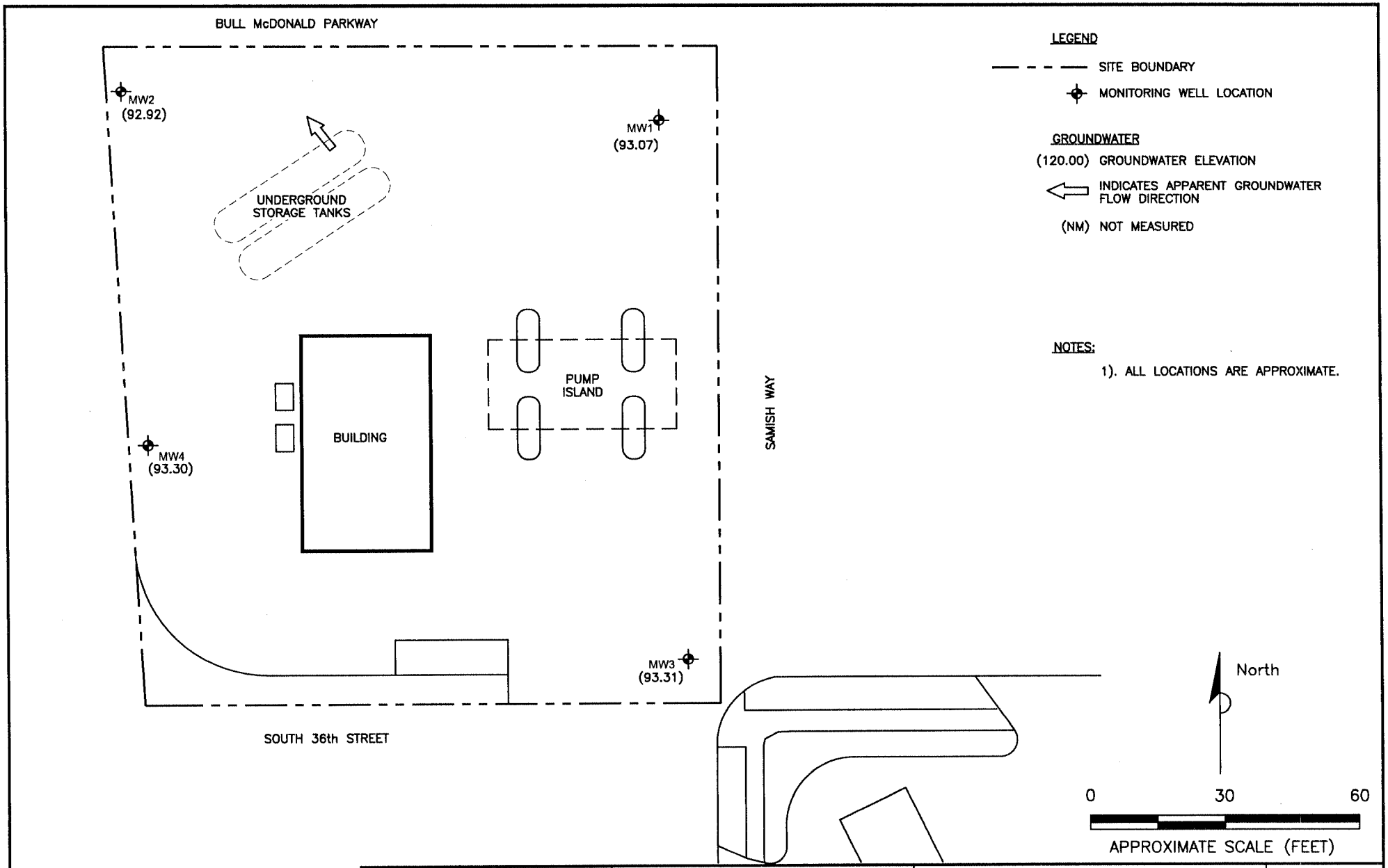

SOURCE:
BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC. (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP– 06/10/03, PLATE 1, DATED 07/08/03, PROJECT NO. 31065. CADD FILE 31065.13.DWG

SECOR
12034 134th COURT, SUITE 102
REDMOND, WASHINGTON
PHONE: (425) 372-1600 FAX: (425) 372-1650

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SITE PLAN WITH GROUNDWATER ELEVATIONS (12/29/04)

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
01CP.06380.04	SS/ARA	MR		1/31/05

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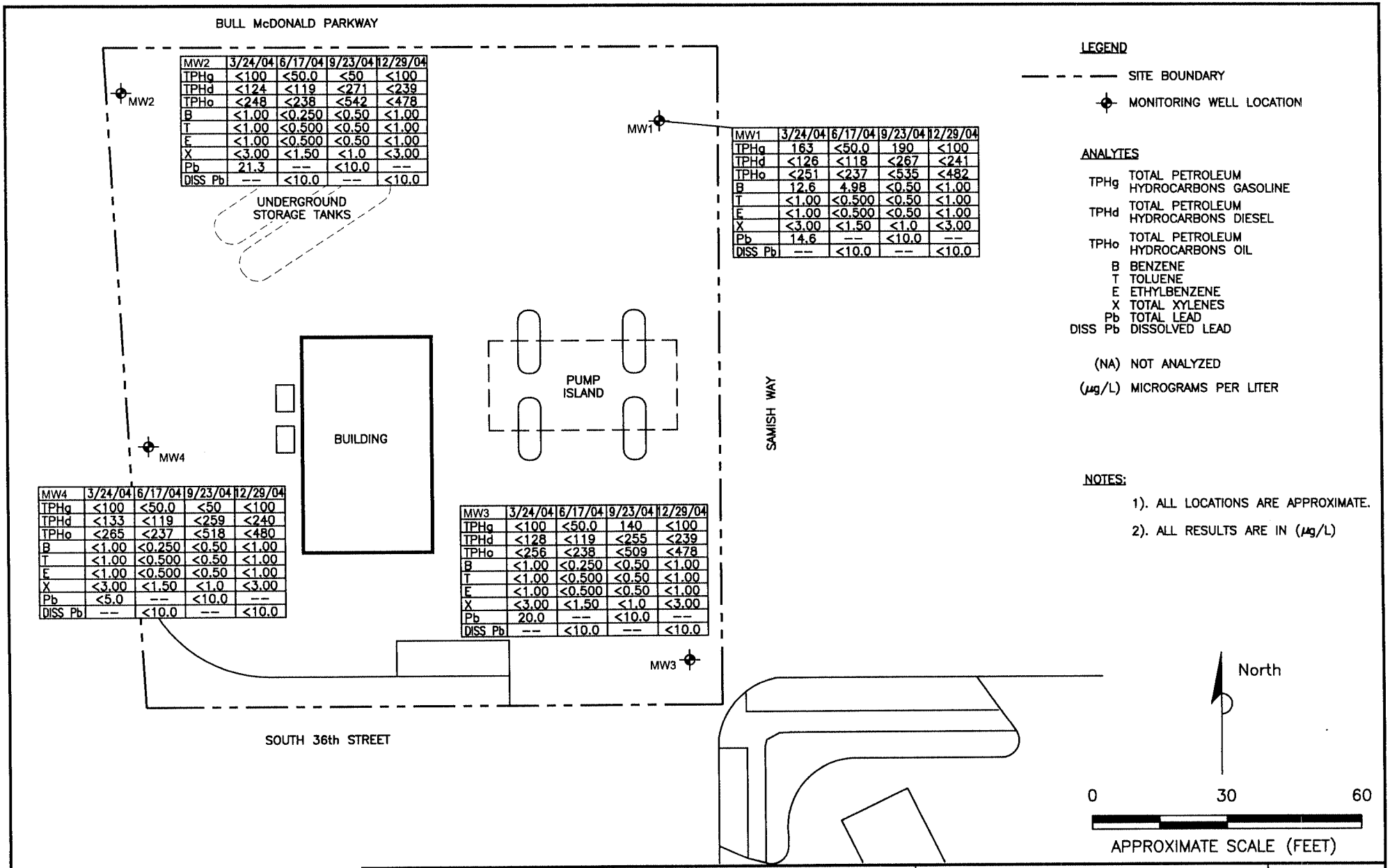

MW2	3/24/04	6/17/04	9/23/04	12/29/04
TPHg	<100	<50.0	<50	<100
TPHd	<124	<119	<271	<239
TPHo	<248	<238	<542	<478
B	<1.00	<0.250	<0.50	<1.00
T	<1.00	<0.500	<0.50	<1.00
E	<1.00	<0.500	<0.50	<1.00
X	<3.00	<1.50	<1.0	<3.00
Pb	21.3	--	<10.0	--
DISS Pb	--	<10.0	--	<10.0

MW1	3/24/04	6/17/04	9/23/04	12/29/04
TPHg	163	<50.0	190	<100
TPHd	<126	<118	<267	<241
TPHo	<251	<237	<535	<482
B	12.6	4.98	<0.50	<1.00
T	<1.00	<0.500	<0.50	<1.00
E	<1.00	<0.500	<0.50	<1.00
X	<3.00	<1.50	<1.0	<3.00
Pb	14.6	--	<10.0	--
DISS Pb	--	<10.0	--	<10.0

MW4	3/24/04	6/17/04	9/23/04	12/29/04
TPHg	<100	<50.0	<50	<100
TPHd	<133	<119	<259	<240
TPHo	<265	<237	<518	<480
B	<1.00	<0.250	<0.50	<1.00
T	<1.00	<0.500	<0.50	<1.00
E	<1.00	<0.500	<0.50	<1.00
X	<3.00	<1.50	<1.0	<3.00
Pb	<5.0	--	<10.0	--
DISS Pb	--	<10.0	--	<10.0

MW3	3/24/04	6/17/04	9/23/04	12/29/04
TPHg	<100	<50.0	140	<100
TPHd	<128	<119	<255	<239
TPHo	<256	<238	<509	<478
B	<1.00	<0.250	<0.50	<1.00
T	<1.00	<0.500	<0.50	<1.00
E	<1.00	<0.500	<0.50	<1.00
X	<3.00	<1.50	<1.0	<3.00
Pb	20.0	--	<10.0	--
DISS Pb	--	<10.0	--	<10.0

LEGEND

SITE BOUNDARY

MONITORING WELL LOCATION

ANALYTES

TPHg TOTAL PETROLEUM HYDROCARBONS GASOLINE

TPHd TOTAL PETROLEUM HYDROCARBONS DIESEL

TPHo TOTAL PETROLEUM HYDROCARBONS OIL

B BENZENE

T TOLUENE

E ETHYLBENZENE

X TOTAL XYLENES

Pb TOTAL LEAD

DISS Pb DISSOLVED LEAD

(NA) NOT ANALYZED

(µg/L) MICROGRAMS PER LITER

NOTES:

1). ALL LOCATIONS ARE APPROXIMATE.

2). ALL RESULTS ARE IN (µg/L)

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

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SITE PLAN WITH ANALYTICAL RESULTS (3/24/04 - 12/29/04)

FIGURE: **3**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
01CP.06380.04	SS/ARA	MR		1/31/05

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TABLE 1
CUMMULATIVE SUMMARY OF GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
ConocoPhillips Site No. 6380
200 South 36th Street
Bellingham, Washington

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Total Pb	Diss Pb
MW1	03/11/99	4.96	93.53	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	2.41	--
TOC Elevation	05/25/99	5.33	93.16	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--
98.49	08/12/99	6.66	91.83	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--
	12/07/99	6.10	92.39	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	6.18	--
	02/10/00	6.10	92.39	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	1.75	--
	02/02/01	5.17	93.32	<50.0	588	<750	**12.4**	1.02	1.10	2.77	--	<1.00
	02/08/02	5.77	92.72	**838**	**1,600**	<500	**128**	2.15	85.4	6.55	7.70	<1.00
	09/20/02	6.27	92.22	197	**1,320**	<588	1.82	<0.500	33.0	<1.00	<1.00	--
	12/04/02	7.05	91.44	373	511	<568	**106**	1.32	1.39	5.41	4.65	--
	03/05/03	5.70	92.79	168	<250	<500	**28.3**	1.70	3.55	5.87	4.90	--
	06/10/03	5.92	92.57	400	<250	<500	**36.9**	2.43	30.5	6.97	**17.1**	--
	09/03/03	6.30	92.19	258	301	<588	1.91	3.22	4.30	5.25	8.72	--
	12/12/03	5.530	92.960	204	**700**	304	2.45	<0.500	<0.500	<1.500	<5.0	--
	03/24/04	6.11	92.38	163	<126	<251	**12.6**	<1.00	<1.00	<3.00	14.6	--
	6/17/2004	5.10	93.39	<50.0	<118	<237	4.98	<0.500	<0.500	<1.50	--	<10.0
	9/23/2004	5.28	93.21	190	<267	<535	<0.50	<0.50	<0.50	<1.0	<10.0	--
	12/29/2004	5.42	93.07	<100	<241	<482	<1.00	<1.00	<1.00	<3.00	--	<10.0
MW2	03/11/99	7.93	92.81	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	**162**	--
TOC Elevation	05/25/99	8.18	92.56	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--
100.74	08/12/99	8.94	91.80	<50.0	281	<750	<0.500	<0.500	<0.500	<1.00	--	--
	12/07/99	8.04	92.70	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	**17.0**	--
	02/10/00	8.32	92.42	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	**49.1**	--
	02/02/01	6.40	94.34	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	<1.00
	02/08/02	7.77	92.97	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	**40.6**	<1.00
	09/20/02	9.23	91.51	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<1.00	--
	12/04/02	9.15	91.59	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	2.89	--
	03/05/03	8.28	92.46	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	**19.8**	--
	06/10/03	8.56	92.18	<50.0	<284	<568	<0.500	1.36	<0.500	2.53	**40.1**	--
	09/03/03	9.13	91.61	<80.0	<298	<595	0.829	1.25	0.519	2.49	**33.3**	--
	12/12/03	8.120	92.620	<50.0	<119	<237	<0.250	<0.500	<0.500	<1.500	<5.0	--
	03/24/04	8.13	92.61	<100	<124	<248	<1.00	<1.00	<1.00	<3.00	**21.3**	
	6/17/2004	8.13	92.61	<50.0	<119	<238	<0.250	<0.500	<0.500	<1.50	--	<10.0
	9/23/2004	8.33	92.41	<50	<271	<542	<0.50	<0.50	<0.50	<1.0	<10.0	--
	12/29/2004	7.82	92.92	<100	<239	<478	<1.00	<1.00	<1.00	<3.00	--	<10.0
MW3	03/11/99	4.93	92.91	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	6.35	--
TOC Elevation	05/25/99	5.19	92.65	210	383	<750	<0.500	<0.500	3.04	3.93	--	--
97.84	08/12/99	5.70	92.14	56.3	<250	<750	<0.500	<0.500	0.732	1.84	--	--
	12/07/99	5.03	92.81	94.7	<250	<750	<0.500	0.598	<0.500	<1.00	4.40	--
	02/10/00	4.92	92.92	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	**17.6**	--
	02/02/01	4.76	93.08	63.0	413	<750	<0.500	<0.500	0.503	<1.00	--	<1.00
	02/08/02	4.59	93.25	91.5	410	<500	<0.500	<0.500	<0.500	<1.00	**22.3**	<1.00
	09/20/02	5.88	91.96	129	372	<500	<0.500	<0.500	<0.500	<1.00	<1.00	--
	12/04/02	5.26	92.58	147	371	<500	<0.500	<0.500	<0.500	<1.00	4.60	--
	03/05/03	4.70	93.14	62.2	<250	<500	<0.500	<0.500	<0.500	<1.00	12.5	--
	06/10/03	5.31	92.53	<50.0	<250	<500	<0.500	0.562	<0.500	<1.00	6.90	--
	09/03/03	5.66	92.18	<80.0	<250	<500	2.12	0.753	<0.500	<1.00	<1.00	--
	12/12/03	4.785	93.055	<50.0	<119	<237	<0.250	<0.500	<0.500	<1.500	<5.0	--
	03/24/04	4.81	93.03	<100	<128	<256	<1.00	<1.00	<1.00	<3.00	**20.0**	--
	6/17/2004	4.97	92.87	<50.0	<119	<238	<0.250	<0.500	<0.500	<1.50	--	<10.0
	9/23/2004	5.03	92.81	140	<255	<509	<0.50	<0.50	<0.50	<1.0	<10.0	--
	12/29/2004	4.53	93.31	<100	<239	<478	<1.00	<1.00	<1.00	<3.00	--	<10.0
MTCA Method A Cleanup Levels				1000/800[a]	500	500	5	1000	700	1000	15	15

TABLE 1

SUMMARY OF CUMMULATIVE GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

ConocoPhillips Site No. 6380

200 South 36th Street

Bellingham, Washington

Well Name	Sample Date	DTW	GW Elev.	TPH-G	TPH-D	TPH-O	B	T	E	X	Total Pb	Diss Pb
MW4	03/11/99	6.39	93.05	<50	<250	<750	<0.500	<0.500	<0.500	<1.00	**29.0**	--
TOC Elevation	05/25/99	6.62	92.82	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--
99.44	08/12/99	7.31	92.13	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	--
	12/07/99	6.37	93.07	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	10.2	--
	02/10/00	6.48	92.96	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	**23.6**	--
	02/02/01	6.37	93.07	<50.0	<250	<750	<0.500	<0.500	<0.500	<1.00	--	<1.00
	02/08/02	6.03	93.41	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	3.30	<1.00
	09/20/02	7.37	92.07	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<1.00	--
	12/04/02	7.03	92.41	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<1.00	--
	03/05/03	6.33	93.11	<50.0	<284	<568	<0.500	<0.500	<0.500	<1.00	6.81	--
	06/10/03	6.99	92.45	<50.0	<250	<500	<0.500	0.687	<0.500	1.26	10.5	--
	09/03/03	7.60	91.84	<80.0	<312	<625	0.620	<0.500	<0.500	<1.00	2.75	--
	12/12/03	6.485	92.955	<50.0	<118	<237	<0.250	<0.500	<0.500	<1.500	<5.0	--
	03/24/04	6.54	92.90	<100	<133	<265	<1.00	<1.00	<1.00	<3.00	<5.0	--
	6/17/2004	5.91	93.53	<50.0	<119	<237	<0.250	<0.500	<0.500	<1.50	--	<10.0
	9/23/2004	6.52	92.92	<50	<259	<518	<0.50	<0.50	<0.50	<1.0	<10.0	--
	12/29/2004	6.14	93.30	<100	<240	<480	<1.00	<1.00	<1.00	<3.00	--	<10.0
Waste Water Effluent	12/12/03	--	--	<50.0	--	--	<0.250	<0.500	<0.500	<1.500	--	--
	03/24/04	--	--	<50.0	--	--	<0.500	<0.500	<0.500	<1.500	--	--
	6/17/2004	--	--	<50.0	--	--	<0.250	<0.500	<0.500	<1.50	--	--
	9/23/2004	--	--	66	--	--	<0.50	<0.50	<0.50	<1.0	--	--
	12/29/2004	--	--	<100	--	--	<1.00	<1.00	<1.00	<3.00	--	<10.0
MTCA Method A Cleanup Levels				1000/800[a]	500	500	5	1000	700	1000	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 = Total Petroleum Hydrocarbons as Gasoline by Ecology Method NWTPH-Gx

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-Dx

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

Prior to 12/12/03; on 6/17/04 and after 9/23/04 BTEX = Aromatic compounds by EPA Method 8020 and 8021B, refer to laboratory reports.

12/12/03, 3/24/04 and 9/23/04 BTEX = Aromatic compounds by EPA Method 5030/8260B, 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.

[a] Concentration 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.

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

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: January 14, 2005

TO: Alice Larsen
SECOR International Inc.
12034 134th Ct. NE, Suite 102
Redmond, WA 98052

PROJECT: 6380-BELLINGHAM

REPORT NUMBER: 125656

TOTAL NUMBER OF PAGES: _____

Enclosed are the test results for five samples received at STL Seattle on December 30, 2004.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Coyner
Project Manager

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
125656-1	MW-1	12-29-04 16:25	Liquid
125656-2	MW-2	12-29-04 15:55	Liquid
125656-3	MW-3	12-29-04 16:05	Liquid
125656-4	MW-4	12-29-04 15:40	Liquid
125656-5	eff 6380	12-29-04 16:40	Liquid

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-1
Lab ID:	125656-01
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Trifluorotoluene	99.8		50	150
1-Chloro-3-fluorobenzene	135	X9	80	120
Bromofluorobenzene	129	X9	80	120
Pentafluorobenzene	143	X9	81	126

Analyte	Result (mg/L)	RL	Flags
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	
	ND	0.001	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-2
Lab ID:	125656-02
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Trifluorotoluene	100		50	150
1-Chloro-3-fluorobenzene	136	X9	80	120
Bromofluorobenzene	130	X9	80	120
Pentafluorobenzene	141	X9	81	126

Analyte	Result (mg/L)	RL	Flags
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	
	ND	0.001	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-3
Lab ID:	125656-03
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	99.4		50	150
1-Chloro-3-fluorobenzene	134	X9	80	120
Bromofluorobenzene	129	X9	80	120
Pentafluorobenzene	140	X9	81	126

Analyte	**Result (mg/L)**	**RL**	**Flags**
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	
	ND	0.001	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-4
Lab ID:	125656-04
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	95.8		50	150
1-Chloro-3-fluorobenzene	129	X9	80	120
Bromofluorobenzene	123	X9	80	120
Pentafluorobenzene	134	X9	81	126

Analyte	**Result (mg/L)**	**RL**	**Flags**
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	
	ND	0.001	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	EFF 6380
Lab ID:	125656-05
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Trifluorotoluene	104		50	150
1-Chloro-3-fluorobenzene	139	X9	80	120
Bromofluorobenzene	134	X9	80	120
Pentafluorobenzene	146	X9	81	126

Analyte	**Result (mg/L)**	**RL**	**Flags**
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	
	ND	0.001	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-1
Lab ID:	125656-01
Date Received:	12/30/2004
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
o-terphenyl	89.7		50	150

Analyte	Result (mg/L)	RL	Flags
#2 Diesel	ND	0.241	
Motor Oil	ND	0.482	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-2
Lab ID:	125656-02
Date Received:	12/30/2004
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	88.8		50	150

Analyte	**Result (mg/L)**	**RL**	**Flags**
#2 Diesel	ND	0.239	
Motor Oil	ND	0.478	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-3
Lab ID:	125656-03
Date Received:	12/30/2004
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
o-terphenyl	93		50	150

Analyte	**Result (mg/L)**	**RL**	**Flags**
#2 Diesel	ND	0.239	
Motor Oil	ND	0.478	

STL Seattle

Client Name:	SECOR International Inc.
Client ID:	MW-4
Lab ID:	125656-04
Date Received:	12/30/2004
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
o-terphenyl	100		50	150

Analyte	Result (mg/L)	RL	Flags
#2 Diesel	ND	0.24	
Motor Oil	ND	0.48	

STL Seattle

Client Name	SECOR International Inc.
Client ID:	MW-1
Lab ID:	125656-01
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
Dilution Factor	1

Dissolved Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	RL	Flags
Lead	ND	0.01	

STL Seattle

Client Name	SECOR International Inc.
Client ID:	MW-2
Lab ID:	125656-02
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
Dilution Factor	1

Dissolved Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	RL	Flags
Lead	ND	0.01	

STL Seattle

Client Name	SECOR International Inc.
Client ID:	MW-3
Lab ID:	125656-03
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
Dilution Factor	1

Dissolved Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	RL	Flags
Lead	ND	0.01	

STL Seattle

Client Name	SECOR International Inc.
Client ID:	MW-4
Lab ID:	125656-04
Date Received:	12/30/04
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
Dilution Factor	1

Dissolved Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	RL	Flags
Lead	ND	0.01	

STL Seattle

Lab ID:	Method Blank - GB4057
Date Received:	-
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
% Solids	-
Dilution Factor	1

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Trifluorotoluene	88.3		50	150
1-Chloro-3-fluorobenzene	121	X9	80	120
Bromofluorobenzene	119		80	120
Pentafluorobenzene	122		81	126

Analyte	Result (mg/L)	RL	Flags
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.001	
m&p-Xylene	ND	0.002	
o-Xylene	ND	0.001	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	GB4057
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
QC Batch ID:	GB4057

GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.	BSD Result (mg/L)	BSD % Rec.	RPD	Flag
Gasoline By NWTPH-G	0	1.25	1.2	95.9	1.18	94.2	-1.8	
Benzene	0	0.0184	0.0195	106	0.0189	103	-2.9	
Toluene	0	0.0884	0.103	117	0.1	113	-3.5	
Ethylbenzene	0	0.0198	0.0207	105	0.02	101	-3.9	
m&p-Xylene	0	0.073	0.0778	107	0.0757	104	-2.8	
o-Xylene	0	0.0286	0.0292	102	0.0285	99.3	-2.7	

STL Seattle

Lab ID:	Method Blank - DW0715
Date Received:	-
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
% Solids	-
Dilution Factor	1

Diesel and Motor Oil by NWTPH-Dx Modified with Acid Silica Gel Cleanup

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
o-terphenyl	110		50	150

Analyte	Result (mg/L)	RL	Flags
#2 Diesel	ND	0.25	
Motor Oil	ND	0.5	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	DW0715
Date Prepared:	1/3/2005
Date Analyzed:	1/4/2005
QC Batch ID:	DW0715

Diesel and Motor Oil by NWTPH-Dx Modified with Acid Silica Gel Cleanup

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.	BSD Result (mg/L)	BSD % Rec.	RPD	Flag
#2 Diesel	0	5	5.43	109	6.04	121	10	
Motor Oil	0	5	5.22	104	5.77	115	10	

STL Seattle

Lab ID:	Method Blank - DP846
Date Received:	-
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
Dilution Factor	1

Dissolved Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	RL	Flags
Lead	ND	0.01	

STL Seattle

Matrix Spike Report

Client Sample ID:	CP-10
Lab ID:	125644-01
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
QC Batch ID:	DP846

Dissolved Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Lead	0	1	0.962	96	

STL Seattle

Duplicate Report

Client Sample ID:	CP-10
Lab ID:	125644-01
Date Prepared:	1/5/05
Date Analyzed:	1/5/05
QC Batch ID:	DP846

Dissolved Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Lead	0	0	NC	

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be ≤ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

RL: Reporting Limit

N: See analytical narrative

ND: Not Detected

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

00023

Chain of Custody Record

STL Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

SEVERN TRENT STL

Client	Project Manager	Date	Chain of Custody Number
SECOR	Alice Larsen	12/24/04	13139
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
	425-372-1600	125656	
City: Redmond	State: WA	Zip Code:	Site Contact:	Lab Contact:
Project Name and Location (State): 6380 - Bellingham	Carrier/Waybill Number:	
Contract/Purchase Order/Quote No.: 1571 SEC001		

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TPH-Dx	BTEX	TPH-Dx	D.S. Pb	Special Instructions/ Conditions of Receipt
MW-1	12/29/04	1625		X			1			4			X	X	X	X	TPH-Dx w/ silica gel cleanup
MW-2	↓	1555		↓			↓			↓			↓	↓	↓	↓	
MW-3		1605															
MW-4		1540					↓			↓			X	X	X	X	
eff 6380	↓	1640		↓						3			X	X			

Cooler: [X] Yes [ ] No Cooler Temp:_____

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [X] Disposal By Lab [ ] Return To Client [ ] Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): [ ] 24 Hours [ ] 48 Hours [ ] 5 Days [X] 10 Days [ ] 15 Days [ ] Other _____

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	Agust Nolan - SECOR	12/30/04	0800	[illegible] STL	12-31-04	10:00
2.	[illegible]	12-30-04	12:35	[illegible]	12/31/04	12:35
3.						

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

STL8274-580 (12/02)

SECOR

DAILY FIELD LOG

Page: 1 of 1
Date: 12/29/2004

Client: ConocoPhillips	Site No: 6380 - Bellingham	Project No: 01CP.06380.04

Scope of Work: x Quarter Monitoring/Sampling **1571SEC001**

Describe Daily Activities:

Gauged 4 monitoring wells.
Purged 4 monitoring wells.
Sampled 4 monitoring wells.

Number of drums left on site: _____

Field Notes:

1400 August Weldr (Aw) on site. Conduct H&S mtg. Set up decon.
1420 Aw measure DTW of MW-1, 2, 3, 4. Purge each well of 3 well volumes.
1605 Sample each well w Peristaltic Pump.
1640 Collect effluent sample from carbon Canister
1700 Aw off-site

Arrived on Site: 1400 Departed Site: 1700

Decontamination Procedures: **3-Stage (Alconox Wash, Tap Water Rinse, & Distilled Water Rinse)**

Daily Health and Safety Log Completed?: Y Utility Locations Checked?: N/A

Important Conversations: —

Important Changes in Scope of Work: —

Weather Conditions: Subcontractors On Site: N/A

SECOR Personnel On Site: August Weld

Signed: August Weld Date: 12/29/05

SECOR

INTERNATIONAL INCORPORATED

MONITORING & SAMPLING LOG

Page ___1___ of___1__

Project Name: 6380 - Bellingham

Date: 12/29/2004

Project Number: 01CP.06380.04

No. of Monitoring Wells Gauge:

SECOR Rep: August Welch

Checked by:

No. of Monitoring Wells Sampled:

MONITORING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Dissolved Oxygen Meter Type/ID: YSI Model 55 # _____ Calibration:_____ ft above mean sea level

Sampling Method: _____Teflon Bailer _____Disposable Bailer ___X___Other: Dedicated Pump Tubing; Peristaltic Pump

Decontamination Method: _____Steam / High Pressure Wash __X_3 Stage (Alconox, Tap & DI rinse) _____Other:_____

MONITORING / SAMPLING DATA

Well I.D.	Previous Quarter DTW	Previous Quarter Gas/Benz (µg/L)	Depth to Floating Product (ft)	Current DTW (ft)	Floating Product Thickness	Total Depth	Samp. Time	Purge Vol. Gasing Elevation[1]	Groundwater Elevation	Corrected Groundwater Elevation[2]	Comments
MW-1				~~7.82~~	5.42	21.8	1425	~~7.8~~			
MW-2				7.82		20.6	1555	7			
MW-3				4.53		20.8	1605	8			
MW-4				6.14		20.3	1540	7			

SAMPLING INFORMATION

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
3 VOAs	N	HCL & Ice	TPH-Gx / BTEX
1 L Amber	N	HCL & Ice	TPH-Dx
16 oz. Plastic	N	HNO3	Total Pb

Notes: 1 = feet from mean sea level

2 = elevation adjusted by adding (.75 x product thickness) to measured water elevation

SECOR
INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No: MW-1

Project Name: 6380 Bellingham

Date: 12/29/2004

Project Number: 01CP.06380.04

Sample Time: 1625

SECOR Rep: August Welch

Checked by:

Sample No:

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___ Vac Truck ___Bailer __X_Submersible Pump ___Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: _____Teflon Bailer _____Disposable Bailer ___x__Other:__Peristaltic_____

Decontamination Method: ___Steam / High Pressure Wash _x__3 Stage (Alconox, Tap & DI rinse) ___Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): (2) 4 6

Depth to Water (DTW_1) (ft): 5.42

Total Well Depth (DTB) (ft):

Water Column:

Floating Product:

Thickness (in):

Casing Volume (gal):

3 Casing Volumes (gal): 8

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	ORP	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
	Started Purging						
		8	N/M	→	→	→	

Maximum Drawdown (DTW_2) (ft) =

Pump Rate (GPM) =

___Fast Recharging Well

___Slow Recharging Well

SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling (DTW_3):

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives		Analytical Parameters
3 VOAs	N	HCl & Ice		TPH-Gx
1 L Amber	N	HCl & Ice		TPH-Dx
16 oz. Plastic	N	HNO3		Total Pb

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \_\_\_\_$$

$$= \_\_\_\_\ \%$$

80% Recharge = _____

SECOR
INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No: MW-2

Project Name: 6380 Bellingham

Date: 12/29/2004

Project Number: 01CP.06380.04

Sample Time: 15-55

SECOR Rep: August Welch

Checked by:

Sample No:

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___ Vac Truck ___Bailer __X_Submersible Pump ___Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: _____Teflon Bailer _____Disposable Bailer ___x__Other:__Peristaltic

Decontamination Method: ___Steam / High Pressure Wash _x__3 Stage (Alconox, Tap & DI rinse) Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): 2 4 6

Depth to Water (DTW_1) (ft): 7.82

Total Well Depth (DTB) (ft):

Water Column:

Floating Product:

Thickness (in):

Casing Volume (gal):

3 Casing Volumes (gal): 7

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	ORP	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
	Started Purging						
		7	N/M	→	→	→	

Maximum Drawdown (DTW_2) (ft) =

Pump Rate (GPM) =

___Fast Recharging Well

___Slow Recharging Well

SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling (DTW_3):

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives		Analytical Parameters
3 VOAs	N	HCl & Ice		TPH-Gx
1 L Amber	N	HCl & Ice		TPH-Dx
16 oz. Plastic	N	HNO3		Total Pb

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \_\_\_\_$$

$$= \_\_\_\_\ \%$$

80% Recharge = _____

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No: MW-3

Project Name: 6380 Bellingham

Date: 12/29/2004

Project Number: 01CP.06380.04

Sample Time: 1605

SECOR Rep: August Welch

Checked by:

Sample No:

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___ Vac Truck ___Bailer __X_Submersible Pump ___Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: _____Teflon Bailer _____Disposable Bailer ___x__Other:__Peristaltic_____

Decontamination Method: ___Steam / High Pressure Wash _x__3 Stage (Alconox, Tap & DI rinse) Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): (2) 4 6

Depth to Water (DTW_1) (ft): 4.53

Total Well Depth (DTB) (ft):

Water Column:

Floating Product:

Thickness (in):

Casing Volume (gal):

3 Casing Volumes (gal): 8

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	ORP	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
	Started Purging						
		8	→	→	→	→	

Maximum Drawdown (DTW_2) (ft) =

Pump Rate (GPM) =

___Fast Recharging Well

___Slow Recharging Well

SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling (DTW_3):

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives		Analytical Parameters
3 VOAs	N	HCl & Ice		TPH-Gx
1 L Amber	N	HCl & Ice		TPH-Dx
16 oz. Plastic	N	HNO3		Total Pb

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)
6	10	2.11 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \_\_\_\_$$

$$= \_\_\_\_\ \%$$

80% Recharge = _____

SECOR
INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No: MW-4
Project Name: 6380 Bellingham
Date: 12/29/2004
Project Number: 01CP.06380.04
Sample Time: 1540
SECOR Rep: August Welch
Checked by:
Sample No:

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___ Vac Truck ___Bailer __X_ Submersible Pump ___Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: _____Teflon Bailer _____Disposable Bailer ___x__Other: Peristaltic

Decontamination Method: ___Steam / High Pressure Wash _x__3 Stage (Alconox, Tap & DI rinse) ___Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): (2) 4 6

Depth to Water (DTW_1) (ft): 6.14

Total Well Depth (DTB) (ft):

Water Column:

Floating Product:

Thickness (in):

Casing Volume (gal):

3 Casing Volumes (gal): 7

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	ORP	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
	Started Purging						
		7	N/M				

Maximum Drawdown (DTW_2) (ft) =

Pump Rate (GPM) =

____Fast Recharging Well

____Slow Recharging Well

SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling (DTW_3):

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives		Analytical Parameters
3 VOAs	N	HCl & Ice		TPH-Gx
1 L Amber	N	HCl & Ice		TPH-Dx
16 oz. Plastic	N	HNO3		Total Pb

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.77 (DTB-DTW_1)
2	10	1.14 (DTB-DTW_1)
4	10	1.50 (DTB-DTW_1)
4	12	1.95 (DTB-DTW_1)
6	10	2.11 (DTB-DTW_1)

Notes:

RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \_\_\_\_$$

$$= \_\_\_\_\ \%$$

80% Recharge = _____