



March 18, 2010

Denis and Mary Rogers  
2809 Lake Avenue  
Snohomish, WA 98290-1006

**Subject: Installation and Sampling of Two Replacement Monitoring Wells in  
Former UST Soil Excavation at Smokey Point Chevron Property  
2804 – 172<sup>nd</sup> Street NE, Marysville, WA**

Dear Mr. and Ms. Rogers:

GeoScience Management, Inc.. (GSM) has coordinated drilling and installing two new groundwater monitoring wells in the former UST excavation area to replace wells which were removed during soil excavation in October 2009. This letter report presents the results of the sampling and analysis of soil and groundwater samples obtained from these two new wells, and well construction details. The purpose of the work was to install groundwater monitoring points in the former excavation area to allow monitoring of groundwater quality in the area during the planned enhanced bioremediation of the site.

### **Site Description**

The site is located at 2804 – 172nd Street NE, Marysville, WA, 98271 (Figure 1). GSM has conducted previous environmental investigations at the former service station and adjacent Madison Development property, resulting in the installation of 18 groundwater monitoring wells. The underground storage tanks, and approximately 1200 tons of contaminated soil were excavated and removed from the site in October 2009. During excavation, existing wells eight were abandoned by a licensed well driller, and then excavated during the cleanup activities.

### **Soil Sampling, Well Installation and Groundwater Sampling**

**Soil Borings and Sampling.** On March 11, 2010, GSM organized the drilling and sampling of two soil borings, designated MW-119 and MW-120, located in front of the former mini-mart store, in the southern portion of the area excavated during the UST removal and soil cleanup conducted in October 2009 (Figure 1). The boring was advanced using a hollow-stem auger (HSA) drill rig operated by Cascade Drilling, Inc. of Woodinville, WA. The HSA rig collected samples in both borings at the 7.5- and 12.5-foot depth intervals. Sample recoveries were between 90 and 100%. Recovered samples were screened in the field using a photoionization detector (PID) calibrated to 100 ppm isobutylene standard.

Soils encountered consisted of consisted of fill materials (quarry spalls and gravelly sand) used as fill in the October 2009 excavation, to a depth of approximately 7 feet below ground. Native fine to course sand was encountered in both borings from approximately 7 feet, to the maximum depth drilled of 14 feet. We encountered groundwater at a depth of approximately 4 feet below ground. Slight hydrocarbon-like odors were encountered during drilling, below a depth of approximately 7 feet.

**Well Installations.** Wells consisted of 2-inch inside diameter schedule 40 PVC, with 20-foot long, 10-slot screens, installed flush with the parking lot surface. Silica sand pack was installed around the screened intervals, with hydrated bentonite chips as a seal. The screened intervals in both wells extend from 14 to 4 feet below ground, which corresponds to the other, existing monitoring wells installed previously on site. As-built diagrams for the borings are included in Attachment A.

**Groundwater Sampling.** On March 12, 2010, GSM developed both new wells using surging and pumping techniques. A stainless steel bailer was used as a surge block to surge the water in each well, and a small submersible pump was then used to evacuate approximately 25 gallons of water from each well. Discharge water in both wells was clear at the end of the development period.

On March 14, 2010, GSM measured the depth to water in each well with an electronic well probe, and then used a small submersible pump to purge and collect groundwater samples. Approximately 3 gallons of water was removed from each well prior to sampling. Pump discharge was maintained at approximately 1/2-gallon per minute. Field readings of pH, temperature and conductivity were recorded during sampling, and samples were not collected until the readings had stabilized to within 10% of the previous reading. Field sampling data sheets recording this information are included in Attachment A. Development and purge water has been stored temporarily on site pending arrangements for off-site disposal.

### **Laboratory Analytical Results**

Soil and groundwater samples were collected in jars provided specifically for this project by the analytical laboratory, placed in a chilled cooler, and transported under chain-of-custody protocols to ALS Laboratory Group in Everett, WA for analysis. ALS performed analysis for gasoline-range hydrocarbons (Method NWTPH-Gx) and benzene, toluene, ethylbenzene and xylenes (EPA Method 8021b) on soil samples from each boring collected from 7.5 and 12.5 feet below ground, and on groundwater samples collected from both completed wells.

ALS reported that the 7.5-foot soil sample from boring MW-119 contained TPH-G at a concentration of 220 mg/kg, with ethylbenzene and xylenes present at concentrations of 0.24 and 4.4 mg/kg, respectively. Benzene and toluene were not detected at the method reporting limits of 0.03 and 0.05 mg/kg, respectively. The TPH-G concentration of 220 mg/kg is slightly above the 100 mg/kg cleanup level under Method A of the Model Toxics Control Act<sup>1</sup> regulation. Soil samples collected at 12.5 feet in MW-119, and at both 7.5 and 12.5 feet in MW-120, did not contain gasoline-range hydrocarbons or BTEX compounds at concentrations above the MTCA Method A levels.

The groundwater sample from well MW-119 contained 5,300 ug/L TPH-G, and 7.6 ug/L, 120 ug/L, 170 ug/L, and 1,000 ug/L BTEX, respectively. The groundwater sample from well MW-120 contained 11,000 ug/L TPH-G, and 18 ug/L, 330 ug/L, 220 ug/L, and 1,500 ug/L BTEX, respectively. The TPH-G, benzene and xylenes concentrations from both wells exceeded the MTCA Method A cleanup levels for groundwater. Laboratory reports are contained in Attachment B.

### **Discussion of Results**

Two new monitoring wells were installed to replace wells which had been excavated during the soil excavation and tank removal in October 2009. Destroyed wells exhibited benzene and gasoline concentrations in September 2009 ranging from 250 ug/L to 1,700 ug/L and 11,000 ug/L and 44,000 ug/L, respectively. The new wells contained benzene and gasoline in groundwater at concentrations of 7.6 ug/L and 18 ug/L, and 5,300 ug/L and 11,000 ug/L, considerably lower than before the removal of contaminated soil. Soil samples collected at depths of 7.5 and 12.5 feet below ground in the new wells did not contain petroleum contamination above the MTCA Method A cleanup levels, with the single exception of gasoline at 7.5 feet in well MW-119, at a concentration of 220 mg/kg. The Method cleanup level for soil is 100 mg/kg. From this data we conclude the excavation of

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<sup>1</sup> Chapter 173-340 WAC, Model Toxics Control Act regulations, Method A Tables

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contaminated soil, and skimming the excavation water surface to remove sheen has resulted in reducing the amount of hydrocarbons in remaining in soil and groundwater significantly.

## Limitations

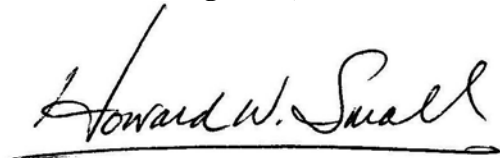
The services described in this report were performed consistent with generally accepted professional consulting principles and practices at the time the work was performed. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

GSM appreciates the opportunity to provide you with consulting services. If you have any questions or require additional information, please call me at (360) 654-0677.

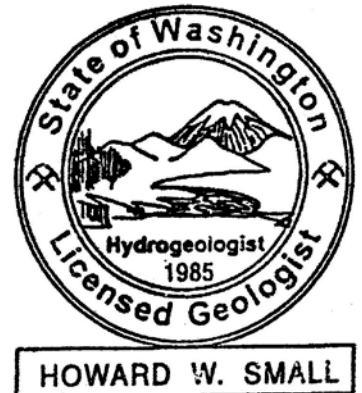
Sincerely,

**GeoScience Management, Inc.**



Howard W. Small, *L.Hg. C.P.G.*  
Principal Geologist

Attachments: Table 1 – Summary of Laboratory Analytical Results  
Figure 1 – Site Plan and Analytical Results  
Attachment A – Boring Logs and Groundwater Sampling Data Sheets  
Attachment B - Laboratory Report #1003075 by ALS Laboratory Group



**Table 1**  
**Summary of Analytical Data**  
**Replacment Monitoring Wells**  
**Smokey Point Chevron Property**  
**2804-172nd Street NE, Marysville, WA**

Sample ID	Collection Date	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Xylenes (ug/L)	TPH-G (ug/L)
<b>Soil Samples</b>						
MW-119-7.5	3/11/2010	ND(<0.03)	ND(<0.05)	0.24	4.4	<b>220</b>
MW-119-12.5	3/11/2010	ND(<0.03)	ND(<0.05)	0.063	ND(<0.2)	ND(<3.0)
MW-120-7.5	3/11/2010	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.2)	ND(<3.0)
MW-120-12.5	3/11/2010	ND(<0.03)	ND(<0.05)	ND(<0.05)	ND(<0.2)	ND(<3.0)
MTCA Method A Cleanup Levels - Soil (mg/kg)		0.03	7	6	9	30 / 100
<b>Groundwater Samples</b>						
MW-119	3/14/2010	<b>7.6</b>	120	170	<b>1,000</b>	<b>5,300</b>
MW-120	3/14/2010	<b>18</b>	330	220	<b>1,500</b>	<b>11,000</b>
MTCA Method A Cleanup Levels - Groundwater (ug/L)		5	1,000	700	1,000	800 / 1,000
Notes:						
BTEX by EPA Methods 8021B.						
Total Petroleum Hydrocarbons as Gasoline, WDOE Method NWTPH-Gx.						
ND means Not Detected at or above the specified analytical method reporting limit.						
Washington State Model Toxics Control Act regulation (MTCA), Chapter 173-303 WAC.						
Gasoline cleanup levels for mixtures with benzene, and without benzene.						
<b>BOLD</b> denotes concentration exceeds MTCA Method A level						

YARD LIGHT - BENCHMARK NW BOLT  
ON TOP OF CONCRETE FOOTING IS  
101.91 FEET (JUST OFF MAP)

ALLEY

APPROXIMATE  
PROPERTY BOUNDARY

LANDSCAPING

172ND STREET NE

171st PLACE NE

REMOVED

REMOVED

ANALYTE	MW-120		WATER
	SOIL-7.5'	SOIL-12.5'	
BENZENE	ND(<0.03)	ND(<0.03)	18
TOLUENE	ND(<0.05)	ND(<0.05)	330
ETHYLBENZENE	ND(<0.05)	ND(<0.05)	220
XYLENES	ND(<0.20)	ND(<0.20)	1,500
GASOLINE	ND(<3.0)	ND(<3.0)	11,000

ANALYTE	MW-119		WATER
	SOIL-7.5'	SOIL-12.5'	
BENZENE	ND(<0.03)	ND(<0.03)	7.6
TOLUENE	ND(<0.05)	ND(<0.05)	120
ETHYLBENZENE	0.24	0.063	170
XYLENES	4.4	ND(<0.20)	1,000
GASOLINE	220	ND(<3.0)	5,300

**EXPLANATION**

- MW-119 ● NEW MONITORING WELL LOCATION BY GSM, MARCH 2010.
- MW-101 ◐ EXISTING MONITORING WELL LOCATION BY GSM.
- MW-2 ⊕ APPROXIMATE LOCATION OF EXISTING MONITORING WELL INSTALLED BY OTHERS (3/4-INCH DIA.)
- MW-101 ✕ MONITORING WELL DESTROYED DURING EXCAVATION OF USTs AND SOIL IN OCTOBER 2009.

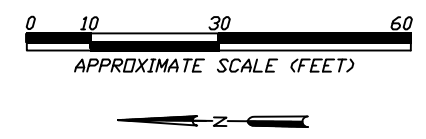
**RESULTS OF LABORATORY ANALYSIS**

ANALYTE	BORING/WELL DESIGNATION		WATER
	SOIL-DEPTH	SOIL-DEPTH	
BENZENE	MG/KG	MG/KG	UG/L
TOLUENE	MG/KG	MG/KG	UG/L
ETHYLBENZENE	MG/KG	MG/KG	UG/L
XYLENES	MG/KG	MG/KG	UG/L
GASOLINE	MG/KG	MG/KG	UG/L

RED DENOTES VALUE EXCEEDS MTCA METHOD A CLEANUP LEVEL

BASE MAP WAS PREPARED FROM EMR REPORT, 1997, AEG REPORT, 2003, AND HAND MEASUREMENTS.

REVISION 03/18/2010



**GEOSCIENCE MANAGEMENT, INC.**  
ENVIRONMENTAL CONSULTING SERVICES  
809 156TH STREET NE  
ARLINGTON, WA 98223

DESIGN HWS  
DRAWN HWS  
DATE MARCH 2010  
JOB No. SMOKEY POINT CHEVRON

SITE PLAN WITH LABORATORY RESULTS  
NEW WELLS IN UST EXCAVATION AREA  
MARCH 2010  
SMOKEY POINT CHEVRON PROPERTY  
2804-172ND STREET NE, MARYSVILLE, WA

FIGURE  
1

Denis and Mary Rogers  
Installation and Sampling of Two Replacement Wells  
Smokey Point Chevron Property  
2804 – 172<sup>nd</sup> Street NE, Marysville, WA  
March 18, 2010

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# **ATTACHMENT A**

## **Soil Boring Logs and Groundwater Sampling Data Sheets**

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# BORING & WELL CONSTRUCTION LOG

# WELL MW-119



**GEO SCIENCE MANAGEMENT, INC.**  
 ENVIRONMENTAL CONSULTING SERVICES  
 809 156TH STREET NE  
 ARLINGTON, WA 98223

Wood-edged concrete pad in planter

Concrete Surface Seal and Steel Monument

Locking, Gasketed PVC Plug Cap

Bentonite Seal Medium chips

Well Pipe  
 2-inch Diameter  
 Flush-threaded,  
 SCH 40 PVC

Well Screen  
 10 feet; 2-inch  
 Diameter 20-  
 Slot PVC

Sand Pack  
 2/12 Colorado  
 Silica Sand

DEPTH (FEET)	SAMPLE ID	BLOW COUNT (PER 6 INCHES)	SAMPLE INTERVAL AND RECOVERY	PID READINGS (PPM)	USCS
0					
1.0 Foot				<1	FILL
3.0 Feet					
4.0 Feet				12/6/09	
5				<1	FILL
7.5 to 9.0	MW-119-7.5'	6		15	
		10			
		12			
		22			
10					SP
12.5 to 14	MW-119-12.5'	8		<1	
		15			
		16			
		31			
15					
20					

**PROJECT**  
 Smokey Point Chevron

**CLIENT**  
 Mary and Denis Rogers

**DRILLING COMPANY**  
 Cascade Drilling, Inc.

**GEOLOGIST**  
 H. W. Small, L.H.G.

**START DATE** 03/11/2010    **END DATE** 03/11/2010

**DRILLING METHOD**  
 Hollow-stem Auger (4.25 ID x 9 OD)

**SAMPLING METHOD**  
 3-in. O.D. Split-Spoon Sampler

**SURFACE COMPLETION**  
 Flush-mount steel monument

Elevation Ground: Not Measured  
 Elevation TOC: Not Measured  
 Total Boring Depth: 14 Feet  
 Depth to Water ATD: 4 Feet

ASPHALT over:

Gray-brown, damp, slightly gravelly, medium to fine SAND (Fill).

Gray, wet, quarry spalls, 2 to 4-inch diameter. (Fill).

Medium dense to dense, gray, wet, fine to coarse SAND (Fill). Slight hydrocarbon-like odor.

Total depth = 14.0 feet.

**Construction Notes:** Installed 2-inch diameter PVC well screen from 14 to 4 feet (see as-built diagram this page). Completed at the ground surface in asphalt with steel, traffic-rated well monument. 5-gallons water added during drilling. Removed 20 gallons during development on 3/12/2010.

# BORING & WELL CONSTRUCTION LOG

# WELL MW-120



**GEO SCIENCE MANAGEMENT, INC.**  
 ENVIRONMENTAL CONSULTING SERVICES  
 809 156TH STREET NE  
 ARLINGTON, WA 98223

**PROJECT**  
Smokey Point Chevron

**CLIENT**  
Mary and Denis Rogers

**DRILLING COMPANY**  
Cascade Drilling, Inc.

**GEOLOGIST**  
H. W. Small, L.H.G.

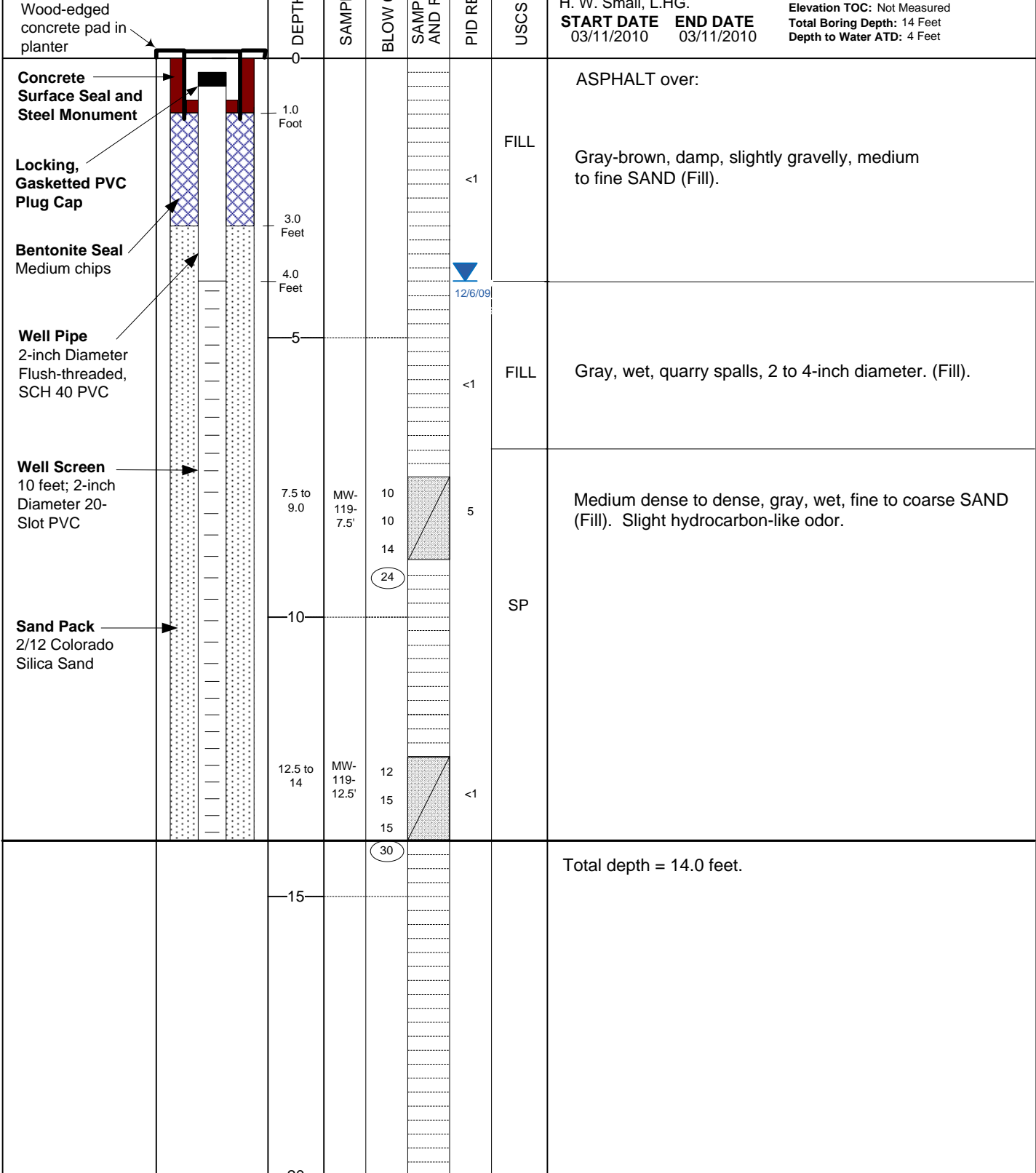
**START DATE** 03/11/2010    **END DATE** 03/11/2010

**DRILLING METHOD**  
Hollow-stem Auger (4.25 ID x 9 OD)

**SAMPLING METHOD**  
3-in. O.D. Split-Spoon Sampler

**SURFACE COMPLETION**  
Flush-mount steel monument

Elevation Ground: Not Measured  
 Elevation TOC: Not Measured  
 Total Boring Depth: 14 Feet  
 Depth to Water ATD: 4 Feet



**Construction Notes:** Installed 2-inch diameter PVC well screen from 14 to 4 feet (see as-built diagram this page). Completed at the ground surface in asphalt with steel, traffic-rated well monument. 5-gallons water added during drilling. Removed 20 gallons during development on 3/12/2010.

# Groundwater Sampling Data Sheet

**Project Name:** Smokey Point Chevron **Project Number:** \_\_\_\_\_

**Client:** Denis and Mary Rogers **Well ID:** MW-119

**Location:** 2804 172nd Street NE, Marysville, WA **Date:** 3/14/2010

**Personnel:** HWSmall **Time:** 1130

**Weather:**             Clear            Overcast             Hot             Warm             Cold   
                           Raining            Snowing             Other:  \_\_\_\_\_

## SAMPLING DATA

<u>3.67</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Depth to water	Units		Measuring point
<u>N/A</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Depth to product	Units		Measuring point
<u>14</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Well depth	Units		Measuring point

**Based on:**     Field Measurements             Well Log

**Well Diameter:**     2-inch (0.17 gal./ft.)             6-inch (1.5 gal./f)             Other: \_\_\_\_\_  
                           4-inch (0.66 gal./ft.)             8-inch (2.6 gal./ft.)

**Casing Volume:**    10.33 feet of water    X 0.17 gallons per foot = 1.76 gallons

**Volume Purged:**    3 gallons

**Purge Method:**             Bailer             Pump             Other/Material: Low flow <0.5L/min

**Well Condition:**             Satisfactory             Other: \_\_\_\_\_

Time	Total Volume Discharged (gal. or L)	Temperature F °	Specific Conductance (MicroSiemens/cm)	pH	TDS (g/L) Turbidity	Dissolved Oxygen (mg/L)	ReDox
<u>11:16</u>	<u>1</u>	<u>63.1</u>	<u>9.21</u>	<u>6.49</u>			
<u>11:25</u>	<u>2</u>	<u>6.04</u>	<u>8.76</u>	<u>6.53</u>			
<u>11:28</u>	<u>3</u>	<u>60.0</u>	<u>8.54</u>	<u>6.41</u>			

**Notes:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Sampler Decontamination:**     Soap/water             Hexane  Methanol             Distilled Water             Other

**Analyses:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Sample ID:** MW-119 **Signature:** Howard W. Small

# Groundwater Sampling Data Sheet

**Project Name:** Smokey Point Chevron **Project Number:** \_\_\_\_\_

**Client:** Denis and Mary Rogers **Well ID:** MW-120

**Location:** 2804 172nd Street NE, Marysville, WA **Date:** 3/14/2010

**Personnel:** HWSmall **Time:** 10:30

**Weather:**       Clear      Overcast       Hot       Warm       Cold   
 Raining      Snowing       Other:  \_\_\_\_\_

## SAMPLING DATA

<u>3.98</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Depth to water	Units		Measuring point
<u>N/A</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Depth to product	Units		Measuring point
<u>14</u>	<u>Feet</u>	Below	<u>Top of PVC Casing, North Side</u>
Well depth	Units		Measuring point

**Based on:**     Field Measurements       Well Log

**Well Diameter:**     2-inch (0.17 gal./ft.)       6-inch (1.5 gal./f)       Other: \_\_\_\_\_  
 4-inch (0.66 gal./ft.)       8-inch (2.6 gal./ft.)

**Casing Volume:**    10.02 feet of water    X 0.17 gallons per foot = 1.70 gallons

**Volume Purged:**    3 gallons

**Purge Method:**       Bailer       Pump       Other/Material: Low flow <0.5L/min

**Well Condition:**       Satisfactory       Other: \_\_\_\_\_

Time	Total Volume Discharged (gal. or L)	Temperature F °	Specific Conductance (MicroSiemens/cm)	pH	TDS (g/L) Turbidity	Dissolved Oxygen (mg/L)	ReDox
<u>10:23</u>	<u>1</u>	<u>65.00</u>	<u>7.05</u>	<u>7.00</u>			
<u>10:26</u>	<u>2</u>	<u>63.50</u>	<u>6.75</u>	<u>6.71</u>			
<u>10:30</u>	<u>3</u>	<u>61.7</u>	<u>6.65</u>	<u>6.64</u>			

**Notes:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Sampler Decontamination:**     Soap/water       Hexane  Methanol       Distilled Water       Other

**Analyses:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Sample ID:** MW-120 **Signature:** Howard W. Small

Denis and Mary Rogers  
Installation and Sampling of Two Replacement Wells  
Smokey Point Chevron Property  
2804 – 172<sup>nd</sup> Street NE, Marysville, WA  
March 18, 2010

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# **ATTACHMENT B**

**Analytical Laboratory Report #1003075  
by ALS Laboratory Group**

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**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.  
809 156th St. NE  
Arlington, WA 98223

DATE: 3/18/2010  
ALS JOB#: 1003075  
DATE RECEIVED: 3/16/2010  
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron  
CLIENT SAMPLE ID: 3/14/2010 MW-119  
ALS SAMPLE #: -01

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	5,300	250	5	UG/L	3/17/2010	DLC
Benzene	EPA-8021	7.6	5.0	5	UG/L	3/17/2010	DLC
Toluene	EPA-8021	120	5.0	5	UG/L	3/17/2010	DLC
Ethylbenzene	EPA-8021	170	5.0	5	UG/L	3/17/2010	DLC
Xylenes	EPA-8021	1,000	15	5	UG/L	3/17/2010	DLC

Chromatogram indicates that it is likely that sample contains weathered gasoline.

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.  
809 156th St. NE  
Arlington, WA 98223

DATE: 3/18/2010  
ALS JOB#: 1003075  
DATE RECEIVED: 3/16/2010  
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron  
CLIENT SAMPLE ID: 3/14/2010 MW-120  
ALS SAMPLE #: -02

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	11,000	500	10	UG/L	3/17/2010	DLC
Benzene	EPA-8021	18	10	10	UG/L	3/17/2010	DLC
Toluene	EPA-8021	330	10	10	UG/L	3/17/2010	DLC
Ethylbenzene	EPA-8021	220	10	10	UG/L	3/17/2010	DLC
Xylenes	EPA-8021	1,500	30	10	UG/L	3/17/2010	DLC

Chromatogram indicates that it is likely that sample contains weathered gasoline.

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.  
809 156th St. NE  
Arlington, WA 98223

DATE: 3/18/2010  
ALS JOB#: 1003075  
DATE RECEIVED: 3/16/2010  
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron  
CLIENT SAMPLE ID: 3/11/2010 MW-119-7.5  
ALS SAMPLE #: -03

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	220	15	5	MG/KG	3/17/2010	DLC
Benzene	EPA-8021	ND	0.030	1	MG/KG	3/16/2010	DLC
Toluene	EPA-8021	ND	0.050	1	MG/KG	3/16/2010	DLC
Ethylbenzene	EPA-8021	0.24	0.050	1	MG/KG	3/16/2010	DLC
Xylenes	EPA-8021	4.4	0.20	1	MG/KG	3/16/2010	DLC

Chromatogram indicates that it is likely that sample contains extremely weathered gasoline.

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT:	Geoscience Management, Inc.	DATE:	3/18/2010
	809 156th St. NE	ALS JOB#:	1003075
	Arlington, WA 98223	DATE RECEIVED:	3/16/2010
		WDOE ACCREDITATION #:	C1336

CLIENT CONTACT: Howard Small  
 CLIENT PROJECT ID: Smokey Point Chevron  
 CLIENT SAMPLE ID: 3/11/2010 MW-119-12.5  
 ALS SAMPLE #: -04

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	ND	3.0	1	MG/KG	3/18/2010	DLC
Benzene	EPA-8021	ND	0.030	1	MG/KG	3/18/2010	DLC
Toluene	EPA-8021	ND	0.050	1	MG/KG	3/18/2010	DLC
Ethylbenzene	EPA-8021	0.063	0.050	1	MG/KG	3/18/2010	DLC
Xylenes	EPA-8021	ND	0.20	1	MG/KG	3/18/2010	DLC

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.	DATE: 3/18/2010
809 156th St. NE	ALS JOB#: 1003075
Arlington, WA 98223	DATE RECEIVED: 3/16/2010
	WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
 CLIENT PROJECT ID: Smokey Point Chevron  
 CLIENT SAMPLE ID: 3/11/2010 MW-120-7.5  
 ALS SAMPLE #: -05

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	ND	3.0	1	MG/KG	3/17/2010	DLC
Benzene	EPA-8021	ND	0.030	1	MG/KG	3/17/2010	DLC
Toluene	EPA-8021	ND	0.050	1	MG/KG	3/17/2010	DLC
Ethylbenzene	EPA-8021	ND	0.050	1	MG/KG	3/17/2010	DLC
Xylenes	EPA-8021	ND	0.20	1	MG/KG	3/17/2010	DLC

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc. DATE: 3/18/2010  
 809 156th St. NE ALS JOB#: 1003075  
 Arlington, WA 98223 DATE RECEIVED: 3/16/2010  
 WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
 CLIENT PROJECT ID: Smokey Point Chevron  
 CLIENT SAMPLE ID: 3/11/2010 MW-120-12.5  
 ALS SAMPLE #: -06

**DATA RESULTS**

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	ND	3.0	1	MG/KG	3/17/2010	DLC
Benzene	EPA-8021	ND	0.030	1	MG/KG	3/17/2010	DLC
Toluene	EPA-8021	ND	0.050	1	MG/KG	3/17/2010	DLC
Ethylbenzene	EPA-8021	ND	0.050	1	MG/KG	3/17/2010	DLC
Xylenes	EPA-8021	ND	0.20	1	MG/KG	3/17/2010	DLC

\* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

\*\* UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.  
809 156th St. NE  
Arlington, WA 98223

DATE: 3/18/2010  
ALS JOB#: 1003075  
DATE RECEIVED: 3/16/2010  
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron

**QUALITY CONTROL RESULTS**

**SURROGATE RECOVERY**

ALS SAMPLE ID	METHOD	SUR ID	% RECV
1003075-01 5X Dilution	NWTPH-GX	TFT	97%
1003075-01 5X Dilution	EPA-8021	TFT	106%
1003075-02 10X Dilution	NWTPH-GX	TFT	115%
1003075-02 10X Dilution	EPA-8021	TFT	105%
1003075-03 5X Dilution	NWTPH-GX	TFT	102%
1003075-03	EPA-8021	TFT	111%
1003075-04	NWTPH-GX	TFT	86%
1003075-04	EPA-8021	TFT	86%
1003075-05	NWTPH-GX	TFT	83%
1003075-05	EPA-8021	TFT	81%
1003075-06	NWTPH-GX	TFT	89%
1003075-06	EPA-8021	TFT	86%

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

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CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron

**QUALITY CONTROL RESULTS**

**BLANK RESULTS**

QC SAMPLE ID	MATRIX	METHOD	ANALYTE	RESULT	UNITS
MBG-031110S	Soil	NWTPH-GX	TPH-Volatile Range	ND(<3.0)	MG/KG
MBG-031210W	Water	NWTPH-GX	TPH-Volatile Range	ND(<50)	UG/L
MB-031110S	Soil	EPA-8021	Benzene	ND(<0.030)	MG/KG
MB-031110S	Soil	EPA-8021	Toluene	ND(<0.050)	MG/KG
MB-031110S	Soil	EPA-8021	Ethylbenzene	ND(<0.050)	MG/KG
MB-031110S	Soil	EPA-8021	Xylenes	ND(<0.20)	MG/KG
MB-031210W	Water	EPA-8021	Benzene	ND(<1.0)	UG/L
MB-031210W	Water	EPA-8021	Toluene	ND(<1.0)	UG/L
MB-031210W	Water	EPA-8021	Ethylbenzene	ND(<1.0)	UG/L
MB-031210W	Water	EPA-8021	Xylenes	ND(<3.0)	UG/L

APPROVED BY:



**CERTIFICATE OF ANALYSIS**

CLIENT: Geoscience Management, Inc.  
809 156th St. NE  
Arlington, WA 98223

DATE: 3/18/2010  
ALS JOB#: 1003075  
DATE RECEIVED: 3/16/2010  
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Howard Small  
CLIENT PROJECT ID: Smokey Point Chevron

**QUALITY CONTROL RESULTS**

**BLANK SPIKE/BLANK SPIKE DUPLICATE RESULTS**

QC BATCH ID	MATRIX	METHOD	ANALYTE	SPIKE AMOUNT	BLANK SPIKE RECOVERY	BLANK SPIKE DUPLICATE RECOVERY	RPD
590	Soil	NWTPH-GX	TPH-Volatile Range	500	78%	77%	1
593	Water	NWTPH-GX	TPH-Volatile Range	500	65%	69%	5
590	Soil	EPA-8021	Benzene	20	101%	101%	1
590	Soil	EPA-8021	Toluene	20	102%	103%	1
590	Soil	EPA-8021	Ethylbenzene	20	99%	99%	1
590	Soil	EPA-8021	Xylenes	60	104%	105%	1
593	Water	EPA-8021	Benzene	20	103%	101%	2
593	Water	EPA-8021	Toluene	20	100%	98%	2
593	Water	EPA-8021	Ethylbenzene	20	98%	97%	2
593	Water	EPA-8021	Xylenes	60	101%	99%	2

APPROVED BY:



**ALS Laboratory Group**  
 8620 Holly Drive, Suite 100  
 Everett, WA 98208  
 Phone (425) 356-2600  
 (206) 292-9059 Seattle  
 (425) 356-2626 Fax  
 http://www.alsenviro.com

# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

1003075

Date 3/16/2010 Page 1 of 1

OTHER (Specify)

PROJECT ID: REPORT TO COMPANY: PROJECT MANAGER: ADDRESS:	ANALYSIS REQUESTED	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?	
PROJECT ID: <del>854</del> <u>Smoking Bin's Chevron</u> REPORT TO COMPANY: <u>GS4</u> PROJECT MANAGER: <u>thru Smuel</u> ADDRESS: _____ PHONE: <u>206 730 0228</u> FAX: _____ PO. NUMBER: _____ E-MAIL: _____ INVOICE TO COMPANY: <u>Henry Rogus</u> ATTENTION: _____ ADDRESS: <u>2809 Lake Ave</u> <u>Stukomick, WA 98272</u>	NWTPH-HCID NWTPH-DX NWTPH-GX BTEX by EPA-8021 MTBE by EPA-8021 <input type="checkbox"/> EPA-8260 <input type="checkbox"/> Halogenated Volatiles by EPA 8260 Volatile Organic Compounds by EPA 8260 EDB / EDC by EPA 8260 SIM (water) EDB / EDC by EPA 8260 (soil) Semivolatile Organic Compounds by EPA 8270 Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM <input type="checkbox"/> PCB <input type="checkbox"/> Pesticides <input type="checkbox"/> by EPA 8081/8082 Metals-MTCA-5 <input type="checkbox"/> RCRA-8 <input type="checkbox"/> Pri Pol <input type="checkbox"/> TAL <input type="checkbox"/> Metals Other (Specify) TCLP-Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-Vol <input type="checkbox"/> Pest <input type="checkbox"/> Herbs <input type="checkbox"/>			
SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. MW-119	3/14	1130	WATER	1
2. MW-120	3/14	1030	"	2
3. MW-119-7.5	3/11	1200	SOIL	3
4. MW-119-12.5	3/11	1210	SOIL	4
5. MW-120-7.5	3/11	095	SOIL	5
6. MW-120-12.5	3/11	1255	SOIL	6
7. _____				
8. _____				
9. _____				
10. _____				

**SPECIAL INSTRUCTIONS**

**SIGNATURES (Name, Company, Date/Time):**

1. Relinquished By: thru Smuel GS4 1340 hrs,

Received By: Shawn Robinson ALS 3/16/10 1:40

2. Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

**TURNAROUND REQUESTED in Business Days\***

Organic, Metals & Inorganic Analysis

Standard  10  5  3  2  1  SAME DAY

Fuels & Hydrocarbon Analysis

Standard  5  3  2  1  SAME DAY

Specify: \_\_\_\_\_

OTHER: \_\_\_\_\_

\* Turnaround request less than standard may incur Rush Charges

LABORATORY COPY