



May 4, 2020

Mr. Thomas Beeks
GLAM Commercial Properties I, LLC
6947 Coal Creek Pkwy SE, Suite 212
Newcastle, WA 98059

**Re: 2020 Annual Environmental Compliance Report
Smokey Point Retail Center
Project No. 150294**

Dear Mr. Beeks:

This letter report was prepared on behalf of GLAM Commercial Properties I, LLC (GLAM), and presents the results of annual compliance monitoring completed by Aspect Consulting, LLC (Aspect) at the Smokey Point Retail Center (the Property) in Marysville, Washington. We conducted one monitoring event during GLAM's fifth year of ownership. The purpose of the compliance monitoring was to verify that concentrations of constituents of concern (COCs) in groundwater are stable or decreasing on the Property, as required by the Property's Environmental Covenant with the Washington State Department of Ecology (Ecology, 2015). Annual compliance monitoring was conducted according to the SoundEarth Strategies, Inc. (SoundEarth) "Compliance Monitoring Plan" (CMP; SoundEarth, 2015a), included in the Environmental Covenant.

Pursuant to our scope of work for Year 5, we completed the following work elements:

- Observed protective cap conditions
- Collected annual groundwater samples in April 2020
- Performed plume stability analyses for benzene and gasoline
- Evaluated indoor air compliance based on groundwater data
- Prepared this report for submittal to Ecology's Voluntary Cleanup Program (VCP)

The results indicate the protective cap is intact, the groundwater plume is stable or shrinking, and indoor air at the Property is in compliance. This report provides a brief description of the Property and its history, describes the sampling events, and discusses our monitoring results and conclusions in further detail.

Property Description and History

The Property is located at 2707 171st Place NE in the City of Marysville, Washington, as shown on Figure 1. The Property is in a commercial area and developed with two retail buildings and a parking lot.



Based on previous explorations completed by GeoScience Management, Inc., soil on the Property generally consists of gravelly, silty sand to at least 15 feet deep (SoundEarth, 2015b).

The north-adjacent property was developed as a retail gas station in the late 1970s and contains petroleum-impacted soil and groundwater due to a past release from underground storage tanks (USTs). The Property contains petroleum-impacted groundwater due to groundwater flow from this north-adjacent source property.

The Property was enrolled in the VCP and underwent an investigation and cleanup by SoundEarth. The cleanup action included injection of oxidizer into groundwater and installation of engineering controls, including a vapor barrier beneath both buildings on the Property to mitigate potential soil vapor concerns, and a 4-inch-thick asphalt cap covering most of the Property to mitigate the potential for direct contact with contaminated material (SoundEarth, 2015b).

SoundEarth presented this information to Ecology in a Cleanup Action Report (SoundEarth, 2015b), and the Property was issued a Property-specific No Further Action (NFA) with Environmental Covenant from Ecology.

Protective Cap Condition

The condition of the asphalt cap and concrete slabs were inspected in April 2020 and consisted of walking the Property to look for evidence of cracking, erosion, animal burrows, ponded water, sloughing, seepage, or other potentially damaging conditions. During the April 2020 inspection, the condition of the cap appeared intact on all areas within the Property boundary. Based on this assessment, the protective cap is still mitigating direct contact with impacted groundwater below the surface.

Groundwater Monitoring

Per the CMP (SoundEarth, 2015a), annual groundwater monitoring is scheduled to take place during the annual period of highest groundwater (typically April). In 2020, groundwater monitoring was completed in April as planned.

Groundwater samples were collected from three existing monitoring wells located within the historical plume area (MW-112, MW-113, and MW-114) and two existing monitoring wells near the downgradient (south) property line (MW-116 and MW-119) (Figure 2).

Two new wells (MW-121 and MW-122) were installed along the western Property boundary in April 2020 as part of ongoing investigation activities related to the source property for the Smokey Point Chevron Site (the Chevron Site), which includes the Property. These well locations are shown on Figure 2. Investigation of the Chevron Site is ongoing under the Washington State Pollution Liability Insurance Agency's (PLIA's) Petroleum Technical Assistance Program (PTAP). These wells were installed by Aspect at the direction of PLIA and with permission from GLAM. The sampling results for these wells are included in this report as a courtesy.

The groundwater sample collection and analysis methods, and analytical results are presented below.

Groundwater Sample Collection and Analysis Methods

Groundwater samples were collected by low-flow sampling techniques, using a peristaltic pump and disposable polyethylene tubing. We measured the static water level in each well prior to well purging and sample collection (Table 1). The field parameters—temperature, pH, electrical conductance (specific conductance), dissolved oxygen, and redox potential—were monitored during purging. Purging continued until the field parameters stabilized, defined as three successive readings where the parameters varied by less than 10 percent, or by less than 0.5 milligrams per liter (mg/L) dissolved oxygen if the readings were below 5 mg/L.

Once purging was complete, groundwater samples were collected by directly filling laboratory-supplied containers from the pump discharge tubing. Groundwater samples were placed in an iced cooler and delivered to Friedman & Bruya, Inc., in Seattle, Washington, under proper chain-of-custody procedures. Samples from all wells were analyzed for the following:

- Gasoline-range total petroleum hydrocarbons (TPH-G) by Method NWTPH-Gx
- Benzene, toluene, ethylbenzene, and xylene (BTEX) compounds by U.S. Environmental Protection Agency (EPA) Method 8260

The results are presented in Table 2, and laboratory certificates of analysis are included in Attachment A.

Groundwater Elevations and Flow Direction

During Year 5, groundwater elevations ranged from 94.97 to 95.73 feet relative to the Property-specific datum. Groundwater elevation contours are shown on Figure 2. Groundwater flow direction during Year 5 was south-southwest, which is consistent with historical measurements.

Groundwater Analytical Results

Year 5 groundwater quality results show continued evidence of natural attenuation, improving groundwater quality, and petroleum constituent concentrations from each well below Model Toxics Control Act (MTCA) Method A Cleanup Levels. Groundwater quality results are shown in Table 2 and summarized below.

Constituents and areas in compliance with MCTA Method A Cleanup Levels:

- TPH-G was detected below the 800 micrograms per liter ($\mu\text{g/L}$) MTCA Method A cleanup level for plume wells MW-112 and MW-114.
- Benzene was detected below the 5 $\mu\text{g/L}$ MTCA Method A cleanup level for plume wells MW-112 and MW-114, and sentinel well MW-116.
- TPH-G and BTEX compounds were not detected at the remaining monitoring wells.

For reference, TPH-G and BTEX compounds were not detected in the two new monitoring wells (MW-121 and MW-122) located along the western Property boundary).

Plume Stability Analyses

Per the CMP (SoundEarth, 2015a), plume stability analyses were performed to evaluate TPH-G and benzene trends in the groundwater plume. A linear regression analysis was used to determine if each plume was expanding, shrinking, or stable. If the linear regression indicated the plume was

stable, the stability of the plume was confirmed using a nonparametric statistical analysis (Mann-Kendall Trend Test [MKTT]). These analyses were performed using Ecology's *Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater* (Ecology, 2007). Module 2 of this tool package is the linear regression, and module 1 of this tool package is the MKTT. Data inputs and analysis outputs for the TPH-G and benzene plumes are included with this report as Attachments B and C, respectively. The results of these analyses are discussed below.

TPH-Gasoline Plume

The TPH-G plume analysis was conducted using groundwater results for samples collected between May 2014 and April 2020. Linear regression analysis of the plume at wells MW-112 and MW-113 indicated the plume is shrinking; therefore, the nonparametric MKTT analysis was not necessary. Linear regression analysis of the plume at well MW-114 indicated the plume is stable. The nonparametric MKTT analysis of the plume at MW-114¹ indicated the plume is shrinking.

Benzene Plume

The benzene plume analysis was conducted using groundwater results for samples collected between May 2014 and April 2020. Linear regression analysis of the plume at wells MW-112, MW-113, and MW-114 indicated the plume is shrinking; therefore, the nonparametric MKTT analysis was not necessary.

Indoor Air Compliance Evaluation

Per the CMP (SoundEarth, 2015a), indoor air compliance is based on the concentrations of TPH-G and benzene at wells MW-113 and MW-114. Section 5.2 of the CMP states, "If the concentrations [...] are greater than two times the historical maximum concentrations for two consecutive sampling events, this will trigger an indoor air sampling event at Building 1." Year 5 results for MW-113 and MW-114 did not have results meeting this criterion; therefore, an indoor air sampling event was not necessary, and the Property is in compliance.

Conclusions and Recommendations

Annual monitoring results collected during 2020 (Year 5) indicate that the residual TPH-G and BTEX concentrations in groundwater on the Property remain below MTCA Method A cleanup levels for the second year in a row. Analysis of the TPH-G and benzene plumes at all plume wells (MW-112, MW-113, and MW-114) indicate the plumes are shrinking.

Following Ecology's 5-year review, the CMP in the Environmental Covenant calls for ongoing monitoring every other year if groundwater results remain stable or shrinking. However, given the demonstrated stability of the plume and two consecutive years of monitoring results below MTCA Method A cleanup levels, we request Ecology's opinion on reducing the monitoring frequency to every 5 years to coincide with Ecology's 5-year review period.

The scope for continued monitoring will remain in accordance with the CMP in the Environmental Covenant and include:

- Observing protective cap conditions

¹ The October 2016 concentration for MW-114 is considered anomalous and was not included in this analysis. When the test was performed including the October 2016 concentration, the result came back as "undetermined."

- Collecting one round of groundwater samples from the plume wells
- Performing plume stability analyses for benzene and gasoline
- Evaluating indoor air compliance based on groundwater data
- Preparing a Compliance Report to document monitoring activities for submittal to Ecology's VCP.

If the groundwater plume remains stable or shrinking at the time of the 5-year review period in 2025, it is recommended that the frequency of ongoing monitoring be re-evaluated in cooperation with Ecology.

References

SoundEarth Strategies, Inc. (SoundEarth), 2015a, Compliance Monitoring Plan, Smokey Point Retail Center, November 11, 2015.

SoundEarth Strategies, Inc. (SoundEarth), 2015b, Cleanup Action Report, Smokey Point Retail Center, June 12, 2015.

Washington State Department of Ecology (Ecology), 2007, Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater, July 2005, updated for Excel version 2007.

Washington State Department of Ecology (Ecology), 2015, Environmental Covenant, 2707 171st Place NE, Marysville, WA, December 4, 2015.

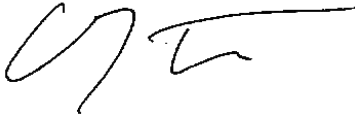
Limitations

Work for this project was performed for the GLAM Commercial Properties I, LLC (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

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Sincerely,

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Attachments

Table 1 – Groundwater Elevation Data

Table 2 – Groundwater Quality Data

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Attachment A – Laboratory Certificates of Analysis

Attachment B – Gasoline Plume Stability Analysis

Attachment C – Benzene Plume Stability Analysis

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TABLES

Table 1. Groundwater Elevation Data

Project No.150294, Smokey Point Retail Center
 Marysville, Washington

Well ID	TOC Elevation (feet)	Sample Date	Sampled By	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-111	100.78	9/27/2006	GeoScience	7.69	93.09
		12/6/2008	GeoScience	5.46	95.32
		9/27/2009	GeoScience	7.29	93.49
		4/11/2011	GeoScience	3.50	97.28
		9/14/2012	SoundEarth	4.83	95.95
		4/5/2013	SoundEarth	5.15	95.63
		1/16/2014	SoundEarth	4.19	96.59
		5/20/2015	SoundEarth	6.05	94.73
		7/22/2016	Aspect	6.25	94.53
		10/18/2019	Aspect	6.28	94.50
1/16/2017	Aspect	4.27	96.51		
7/31/2017	Aspect	6.54	94.24		
MW-112	99.50	12/6/2008	GeoScience	4.21	95.29
		9/27/2009	GeoScience	6.11	93.39
		4/11/2011	GeoScience	2.51	96.99
		9/14/2012	SoundEarth	5.39	94.11
		4/5/2013	SoundEarth	4.02	95.48
		1/16/2014	SoundEarth	3.00	96.50
		5/30/2014	SoundEarth	4.04	95.46
		7/1/2014	SoundEarth	5.00	94.50
		8/7/2014	SoundEarth	5.30	94.20
		5/20/2015	SoundEarth	4.86	94.64
		4/13/2016	Aspect	3.54	95.96
		7/22/2016	Aspect	5.06	94.44
		10/18/2016	Aspect	5.03	
		1/16/2017	Aspect	4.00	95.50
		7/31/2017	Aspect	5.37	94.13
4/17/2018	Aspect	1.37	98.13		
4/16/2019	Aspect	3.34	96.16		
4/3/2020	Aspect	3.80	95.70		
MW-113	100.03	12/6/2008	GeoScience	4.86	95.17
		9/27/2009	GeoScience	6.73	93.30
		4/11/2011	GeoScience	3.18	96.85
		9/14/2012	SoundEarth	5.99	94.04
		4/5/2013	SoundEarth	4.71	95.32
		1/16/2014	SoundEarth	3.58	96.45
		5/30/2014	SoundEarth	4.59	95.44
		8/7/2014	SoundEarth	5.97	94.06
		5/20/2015	SoundEarth	5.46	94.57
		4/13/2016	Aspect	4.12	95.91
		7/22/2016	Aspect	5.68	94.35
		10/18/2016	Aspect	5.65	94.38
		1/16/2017	Aspect	4.61	95.42
		7/31/2017	Aspect	6.03	94.00
4/17/2018	Aspect	1.86	98.17		
4/16/2019	Aspect	3.96	96.07		
4/3/2020	Aspect	4.43	95.60		
MW-114	99.62	12/6/2008	GeoScience	4.71	94.91
		9/27/2009	GeoScience	6.55	93.07
		4/11/2011	GeoScience	3.07	96.55
		9/14/2012	SoundEarth	5.92	93.70
		4/5/2013	SoundEarth	4.65	94.97
		1/16/2014	SoundEarth	3.49	96.13
		5/30/2014	SoundEarth	4.47	95.15
		8/7/2014	SoundEarth	5.83	93.79
		5/20/2015	SoundEarth	5.33	94.29
		4/13/2016	Aspect	4.05	95.57
		7/22/2016	Aspect	5.59	94.03
		10/18/2016	Aspect	5.49	94.13
		1/16/2017	Aspect	4.53	95.09
		7/31/2017	Aspect	5.93	93.69
4/17/2018	Aspect	1.74	97.88		
4/16/2019	Aspect	3.85	95.77		
4/3/2020	Aspect	4.38	95.24		
MW-115	99.9	12/6/2008	GeoScience	4.93	94.97
		9/27/2009	GeoScience	6.49	93.41
		4/11/2011	GeoScience	3.15	96.75
		9/14/2012	SoundEarth	6.08	93.82
		4/5/2013	SoundEarth	4.85	95.05
		1/16/2014	SoundEarth	3.67	96.23
		5/30/2014	SoundEarth	4.65	95.25
		8/7/2014	SoundEarth	6.03	93.87
		5/20/2015	SoundEarth	5.52	94.38
		7/22/2016	Aspect	5.79	94.11
		10/18/2016	Aspect	5.70	94.20
		1/16/2017	Aspect	4.74	95.16
		7/31/2017	Aspect	6.11	93.79
		4/17/2018	Aspect	1.87	98.03
4/16/2019	Aspect	4.04	95.86		
4/3/2020	Aspect	4.56	95.34		

Table 1. Groundwater Elevation Data

Project No.150294, Smokey Point Retail Center
 Marysville, Washington

Well ID	TOC Elevation (feet)	Sample Date	Sampled By	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-116	100.17	12/6/2008	GeoScience	5.30	94.87
		9/27/2009	GeoScience	7.17	93.00
		4/11/2011	GeoScience	3.75	96.42
		9/14/2012	SoundEarth	6.53	93.64
		4/5/2013	SoundEarth	5.28	94.89
		1/16/2014	SoundEarth	4.06	96.11
		5/30/2014	SoundEarth	5.02	95.15
		8/7/2014	SoundEarth	6.42	93.75
		5/20/2015	SoundEarth	5.90	94.27
		4/13/2016	Aspect	4.63	95.54
		7/22/2016	Aspect	6.19	93.98
		10/18/2019	Aspect	6.03	94.14
		1/16/2017	Aspect	5.15	95.02
		7/31/2017	Aspect	6.54	93.63
4/17/2018	Aspect	2.26	97.91		
4/16/2019	Aspect	4.45	95.72		
4/3/2020	Aspect	4.96	95.21		
MW-117	100.65	12/6/2008	GeoScience	5.59	95.06
		9/27/2009	GeoScience	7.45	93.20
		4/11/2011	GeoScience	3.78	96.87
		9/14/2012	SoundEarth	6.78	93.87
		4/5/2013	SoundEarth	5.50	95.15
		1/16/2014	SoundEarth	4.30	96.35
		5/30/2014	SoundEarth	5.27	95.38
		8/7/2014	SoundEarth	6.69	93.96
		5/20/2015	SoundEarth	6.16	94.49
		7/22/2016	Aspect	6.44	94.21
		10/18/2016	Aspect	6.36	94.29
		1/16/2017	Aspect	5.39	95.26
		7/31/2017	Aspect	6.78	93.87
		4/17/2018	Aspect	2.50	98.15
4/16/2019	Aspect	4.69	95.96		
4/3/2020	Aspect	5.20	95.45		
MW-118	100.2	12/6/2008	GeoScience	4.91	95.29
		9/27/2009	GeoScience	6.78	93.42
		4/11/2011	GeoScience	3.19	97.01
		9/14/2012	SoundEarth	6.00	94.20
		4/5/2013	SoundEarth	4.74	95.46
		1/16/2014	SoundEarth	3.61	96.59
		5/30/2014	SoundEarth	4.62	95.58
		8/7/2014	SoundEarth	6.00	94.20
		5/20/2015	SoundEarth	5.50	94.70
		7/22/2016	Aspect	5.73	94.47
		10/18/2016	Aspect	5.72	94.48
		1/16/2017	Aspect	4.65	95.55
		7/31/2017	Aspect	6.63	93.57
		4/17/2018	Aspect	1.87	98.33
4/16/2019	Aspect	3.98	96.22		
4/3/2020	Aspect	4.47	95.73		
MW-119	98.76	5/20/2015	SoundEarth	4.67	94.09
		4/13/2016	Aspect	3.46	95.30
		7/22/2016	Aspect	4.96	93.80
		10/18/2016	Aspect	4.82	93.94
		1/16/2017	Aspect	3.93	94.83
		7/31/2017	Aspect	5.31	93.45
		4/17/2018	Aspect	1.27	97.49
		4/16/2019	Aspect	3.23	95.53
4/3/2020	Aspect	3.79	94.97		
MW-121	100.83	4/3/2020	Aspect	5.56	95.27
MW-122	100.66	4/3/2020	Aspect	5.12	95.54

Notes

Elevations are relative to an arbitrarily chosen site datum.
 BTOC = Below top of casing
 -- = Not measured
 TOC = Top of casing

Table 2. Groundwater Quality Data

Project No.150294, Smokey Point Retail Center
Marysville, Washington

Well ID	Sample Date	Sampled by	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
MTCA Method A Groundwater Cleanup Level (µg/L)			800 ⁽¹⁾	5	1,000	700	1,000
MW-111	9/27/2006	GeoScience	100 U	1 U	1 U	1 U	3 U
	12/6/2008	GeoScience	100 U	1 U	1 U	1 U	3 U
	9/27/2009	GeoScience	100 U	1	1	1 U	3 U
	4/11/2011	GeoScience	4,500	6.9	45	220	130
	9/14/2012	SoundEarth	100 U	1 U	1 U	1 U	3 U
	4/5/2013	SoundEarth	50 U	1 U	1 U	1 U	3 U
MW-112	12/6/2008	GeoScience	100 U	1.5	1.2	1 U	3 U
	9/27/2009	GeoScience	100 U	1 U	1 U	1 U	3 U
	4/11/2011	GeoScience	700	140	54	35	67
	9/14/2012	SoundEarth	180	21	1.6	3.4	5.6
	4/5/2013	SoundEarth	63	25.6	1 U	1 U	2.64
	1/16/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U
	5/30/2014	SoundEarth	4,100	570	280	270	260
	7/1/2014	SoundEarth	1,300	56	22	30	120
	8/7/2014	SoundEarth	5,800	140	97	190	1,000
	5/20/2015	SoundEarth	990	24	10	92	110
	4/13/2016	Aspect	630	2.2	1 U	7.1	2.7
	7/22/2016	Aspect	100 U	0.79	1 U	1 U	2 U
	10/18/2016	Aspect	100 U	0.35 U	1 U	1 U	2 U
	1/16/2017	Aspect	240	17	1 U	1 U	2 U
	7/31/2017	Aspect	120	1	1 U	1 U	2 U
	4/17/2018	Aspect	3,200	4.3	73	110	370
4/16/2019	Aspect	100 U	0.35 U	1 U	1 U	2 U	
4/3/2020	Aspect	440	1.1	8.5	1 U	72	
MW-113	12/6/2008	GeoScience	250	50	1.8	6.9	3 U
	9/27/2009	GeoScience	130	29	4.7	5.6	7.2
	4/11/2011	GeoScience	4,000	70	110	110	260
	9/14/2012	SoundEarth	180	17	20	3.7	17
	4/5/2013	SoundEarth	4,510	118	209	147	792
	1/16/2014	SoundEarth	140	1.9	2.3	4.8	14
	5/30/2014	SoundEarth	100 U	1.8	6.5	2.2	5.1
	8/7/2014	SoundEarth	380	16	13	18	48
	5/20/2015	SoundEarth	210	11	16	7	32
	4/13/2016	Aspect	340	3	1.2	1 U	22.3
	7/22/2016	Aspect	100 U	0.35 U	1 U	1 U	2 U
	10/18/2016	Aspect	160	1.6	1 U	2.6	2 U
	1/16/2017	Aspect	100 U	0.44	1 U	1 U	2 U
	7/31/2017	Aspect	130	13	1 U	1.4	11.3
	4/17/2018	Aspect	100	0.35 U	1.3	1 U	4
4/16/2019	Aspect	100 U	0.35 U	1 U	1.1	2 U	
4/3/2020	Aspect	100 U	0.35 U	1 U	1 U	2 U	
MW-114	12/6/2008	GeoScience	250	28	1 U	1 U	3 U
	9/27/2009	GeoScience	160	15	1.9	1.3	3 U
	4/11/2011	GeoScience	100 U	9.2	1 U	4.5	8.3
	9/14/2012	SoundEarth	120	21	1.1	4.1	3 U
	4/5/2013	SoundEarth	288	59	1 U	13	2.5
	1/16/2014	SoundEarth	100	1.8	2.4	6.6	6.9
	5/30/2014	SoundEarth	190	25	2.2	7	3 U
	8/7/2014	SoundEarth	300	43	2.6	23	3 U
	5/20/2015	SoundEarth	100 U	5.4	2	1 U	3 U
	4/13/2016	Aspect	100 U	12	1 U	1 U	2 U
	7/22/2016	Aspect	170	10	1 U	1 U	2 U
	10/18/2016	Aspect	1,400	37	9.5	71	41.5
	1/16/2017	Aspect	140	11	1 U	4.5	2 U
	7/31/2017	Aspect	310	8.3	1 U	6.9	2 U
	4/17/2018	Aspect	100 U	0.35 U	1 U	1 U	2 U
	4/16/2019	Aspect	100 U	0.85	1 U	1.7	2 U
4/3/2020	Aspect	100	1.7	1 U	3.8	2 U	

Table 2. Groundwater Quality DataProject No.150294, Smokey Point Retail Center
Marysville, Washington

Well ID	Sample Date	Sampled by	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	
MTCA Method A Groundwater Cleanup Level (µg/L)			800 ⁽¹⁾	5	1,000	700	1,000	
MW-115	12/6/2008	GeoScience	540	120	1.1	14	3 U	
	9/27/2009	GeoScience	100 U	180	1 U	10	3 U	
	4/11/2011	GeoScience	100 U	1 U	1 U	1 U	3 U	
	9/14/2012	SoundEarth	100 U	5.2	1.3	1 U	3 U	
	4/5/2013	SoundEarth	50 U	5.75	1 U	5.34	2 U	
	1/16/2014	SoundEarth	390	18	5.6	10	16	
	5/30/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
	8/7/2014	SoundEarth	100 U	1.8	1 U	1 U	3 U	
	5/20/2015	SoundEarth	100 U	1.3	1 U	1 U	3 U	
MW-116	12/6/2008	GeoScience	380	49	1 U	1 U	3 U	
	9/27/2009	GeoScience	100 U	32	1 U	1.2	3 U	
	4/11/2011	GeoScience	100 U	1 U	1 U	1 U	3 U	
	9/14/2012	SoundEarth	100 U	1.1	1 U	1 U	3 U	
	4/5/2013	SoundEarth	50 U	1 U	1 U	1 U	2 U	
	1/16/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
	5/30/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
	8/7/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
		5/20/2015	SoundEarth	100 U	1 U	1 U	1 U	3 U
		4/13/2016	Aspect	100 U	0.35 U	1 U	1 U	2 U
		7/22/2016	Aspect	100 U	0.44	1 U	1 U	2 U
		10/18/2016	Aspect	100 U	1	1 U	1 U	2 U
		1/16/2017	Aspect	100 U	0.35 U	1 U	1 U	2 U
		7/31/2017	Aspect	100 U	0.58	1 U	1 U	2 U
	4/17/2018	Aspect	100 U	0.35 U	1 U	1 U	2 U	
	4/16/2019	Aspect	100 U	0.35 U	1 U	1 U	2 U	
	4/3/2020	Aspect	100 U	0.35	1 U	1 U	2 U	
MW-117	12/6/2008	GeoScience	100	12	1.6	1 U	3 U	
	9/27/2009	GeoScience	100 U	1.4	1	1 U	3 U	
	4/11/2011	GeoScience	100 U	1 U	1 U	1 U	3 U	
	9/14/2012	SoundEarth	100 U	1 U	1 U	1 U	3 U	
	4/5/2013	SoundEarth	50 U	1 U	1 U	1 U	2 U	
	8/7/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
MW-118	12/6/2008	GeoScience	2,400	290	3	20	5.1	
	9/27/2009	GeoScience	100 U	4.1	21	2	14	
	4/11/2011	GeoScience	100 U	1.1	3.1	1.9	5.8	
	9/14/2012	SoundEarth	100 U	1 U	1 U	1 U	3 U	
	4/5/2013	SoundEarth	50 U	1 U	1 U	1 U	2 U	
	5/30/2014	SoundEarth	100 U	1 U	1 U	1 U	3 U	
MW-119	5/20/2015	SoundEarth	100 U	1 U	1.1	1 U	3 U	
	4/13/2016	Aspect	100 U	0.35 U	1 U	1 U	2 U	
	7/22/2016	Aspect	310	1.7	1 U	1 U	2 U	
	10/18/2016	Aspect	140	0.35 U	1 U	1 U	2 U	
	1/16/2017	Aspect	110	1.7	1 U	1 U	2 U	
	7/31/2017	Aspect	100 U	0.35 U	1 U	1 U	2 U	
	4/17/2018	Aspect	100 U	0.35 U	1 U	1 U	1 U	
	4/16/2019	Aspect	100 U	0.35 U	1 U	1 U	2 U	
	4/3/2020	Aspect	100 U	0.35 U	1 U	1 U	2 U	
MW-121	4/3/2020	Aspect	100 U	0.35 U	1 U	1 U	2 U	
MW-122	4/3/2020	Aspect	100 U	0.35 U	1 U	1 U	2 U	

Notes**Bold** values exceed MTCA Method A Groundwater Cleanup Levels for Unrestricted Land Use.

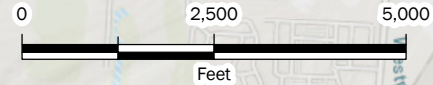
(1) Cleanup level for gasoline with benzene present.

U = Not detected above laboratory reporting limit.

TPH = Total petroleum hydrocarbons

µg/L = micrograms/liter

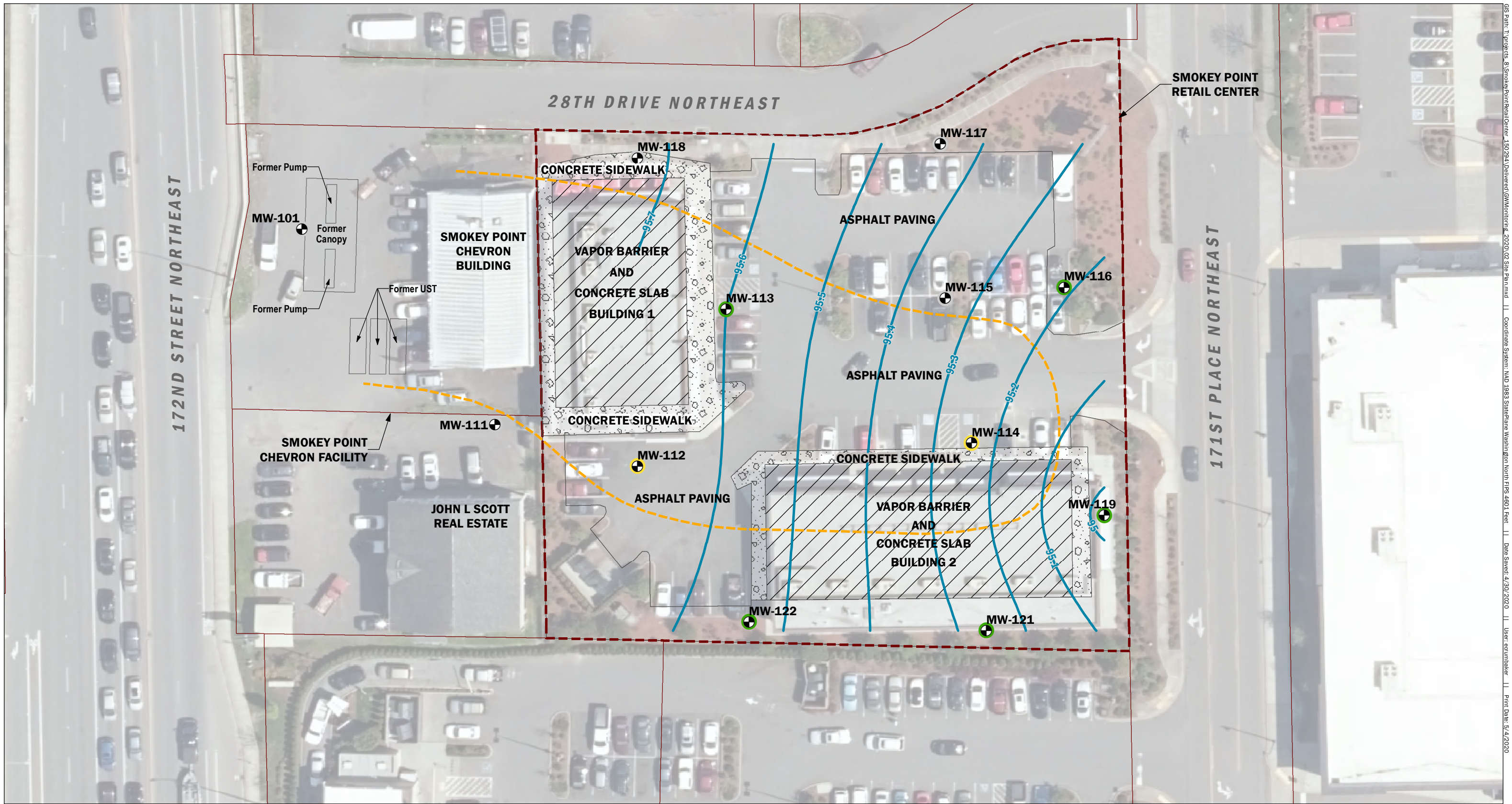
FIGURES












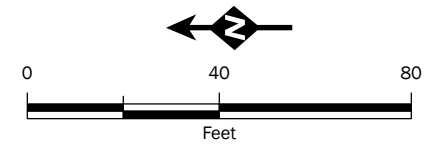
Vicinity Map
 Groundwater Monitoring Report
 Smokey Point Retail Center
 Marysville, Washington

	JUL-2018	BY: AET / RAP	FIGURE NO. 1
	PROJECT NO. 150294	REVISED BY: EAC	


GIS Path: I:\Projects_8\SmokePointRetailCenter_150294\Delivered\GWMonitoring_2018\01_Vicinity Map.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4901 Feet || Date Saved: 7/5/2018 || User: acumhaker || Print Date: 7/5/2018



-  Monitoring Well
-  Detection of TPH-G and/or BTEX below MTCA Method A Groundwater Cleanup Level
-  No detections of TPH-G or BTEX above laboratory reporting limits
-  Not Sampled
-  Groundwater Elevation Contour (April 2020)
-  Historical Extent of Petroleum Benzene Contaminated Groundwater Plume Based on 5µg/L MTCA Method A Groundwater Cleanup Level.
-  Vapor Barrier
-  Property Boundary
-  Snohomish County Parcels



Site Plan
Groundwater Monitoring Report
Smokey Point Retail Center
Marysville, Washington

 Aspect CONSULTING	APR-2020	BY: AET / EAC	FIGURE NO. 2
	PROJECT NO. 150294	REVISED BY: AET/ EAC	

GIS Path: T:\projects_8\SmokeyPointRetailCenter_150294\Deliverables\GIMonitoring_2020\02_SitePlan.mxd | Coordinate System: NAD 1983 StatePlane Washington North FIPS 4901 Feet | Date Saved: 4/30/2020 | User: eorumhake | Print Date: 5/4/2020

ATTACHMENT A

Laboratory Certificates of Analysis

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 10, 2020

Amy Tice, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Ms Tice:

Included are the results from the testing of material submitted on April 3, 2020 from the Smokey Point 150294, F&BI 004045 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0410R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 3, 2020 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Smokey Point 150294, F&BI 004045 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Aspect Consulting, LLC</u>
004045 -01	MW-112-040320
004045 -02	MW-113-040320
004045 -03	MW-116-040320
004045 -04	MW-119-040320
004045 -05	MW-114-040320

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20
Date Received: 04/03/20
Project: Smokey Point 150294, F&BI 004045
Date Extracted: 04/07/20
Date Analyzed: 04/07/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-G_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
MW-112-040320 004045-01	440	105
MW-113-040320 004045-02	<100	98
MW-116-040320 004045-03	<100	99
MW-119-040320 004045-04	<100	100
MW-114-040320 004045-05	100	99
Method Blank 00-673 MB	<100	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-112-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	004045-01
Date Analyzed:	04/06/20	Data File:	040631.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	93	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.1
Toluene	8.5
Ethylbenzene	<1
m,p-Xylene	2.0
o-Xylene	70

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-113-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	004045-02
Date Analyzed:	04/06/20	Data File:	040632.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-116-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	004045-03
Date Analyzed:	04/06/20	Data File:	040633.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-119-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	004045-04
Date Analyzed:	04/06/20	Data File:	040634.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-114-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	004045-05
Date Analyzed:	04/06/20	Data File:	040635.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.7
Toluene	<1
Ethylbenzene	3.8
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Smokey Point 150294
Date Extracted:	04/06/20	Lab ID:	00-773 mb
Date Analyzed:	04/06/20	Data File:	040612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20

Date Received: 04/03/20

Project: Smokey Point 150294, F&BI 004045

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-G_x**

Laboratory Code: 004045-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	109	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20

Date Received: 04/03/20

Project: Smokey Point 150294, F&BI 004045

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 004035-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Benzene	ug/L (ppb)	50	<0.35	104	76-125
Toluene	ug/L (ppb)	50	<1	102	76-122
Ethylbenzene	ug/L (ppb)	50	<1	100	69-135
m,p-Xylene	ug/L (ppb)	100	<2	100	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Benzene	ug/L (ppb)	50	100	104	69-134	4
Toluene	ug/L (ppb)	50	98	103	72-122	5
Ethylbenzene	ug/L (ppb)	50	96	101	77-124	5
m,p-Xylene	ug/L (ppb)	100	96	102	81-112	6
o-Xylene	ug/L (ppb)	50	93	97	81-121	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

001045

SAMPLE CHAIN OF CUSTODY

ME 04/03/20

WY

Report To Amy Tice & Eric Markofer

Company Aspect

Address 710 2nd Ave suite 550

City, State, ZIP Seattle, WA

Phone 316 617.0494 Email

SAMPLERS (signature)

PROJECT NAME

Smoky Point

PO #

150294

REMARKS

INVOICE TO

Project specific RIs? - Yes / No

Page # of

TURNAROUND TIME

Standard turnaround

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Archive samples

Other

Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	BTEX 8260						
MW-117-040320	01A-F	4/3/20	1155	Water	6	X	X							X					
MW-113-040320	02		1240			X								X					
MW-116-040320	03		1340			X								X					
MW-119-040320	04		1355			X								X					
MW-114-040320	05		1450			X								X					

Samples received at 2:00

SIGNATURE

PRINT NAME

COMPANY

Reinquished by:

Received by:

Reinquished by:

Received by:

Daniel Brink

SOAC

ASPECT

FBI

DATE TIME

4/3/20 16:30

4/3/20 16:30

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 10, 2020

Amy Tice, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Ms Tice:

Included are the results from the testing of material submitted on April 3, 2020 from the Smokey Point 170052, F&BI 004044 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Data Aspect, Eric Marhofer
ASP0410R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 3, 2020 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Smokey Point 170052, F&BI 004044 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Aspect Consulting, LLC</u>
004044 -01	MW-121-040320
004044 -02	MW-122-040320

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20
Date Received: 04/03/20
Project: Smokey Point 170052, F&BI 004044
Date Extracted: 04/07/20
Date Analyzed: 04/07/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
MW-121-040320 004044-01	<100	99
MW-122-040320 004044-02	<100	100
Method Blank 00-673 MB	<100	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-121-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 170052
Date Extracted:	04/06/20	Lab ID:	004044-01
Date Analyzed:	04/06/20	Data File:	040629.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-122-040320	Client:	Aspect Consulting, LLC
Date Received:	04/03/20	Project:	Smokey Point 170052
Date Extracted:	04/06/20	Lab ID:	004044-02
Date Analyzed:	04/06/20	Data File:	040630.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Smokey Point 170052
Date Extracted:	04/06/20	Lab ID:	00-773 mb
Date Analyzed:	04/06/20	Data File:	040612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20

Date Received: 04/03/20

Project: Smokey Point 170052, F&BI 004044

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-G_x**

Laboratory Code: 004045-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	109	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/10/20

Date Received: 04/03/20

Project: Smokey Point 170052, F&BI 004044

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260D**

Laboratory Code: 004035-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Benzene	ug/L (ppb)	50	<0.35	104	76-125
Toluene	ug/L (ppb)	50	<1	102	76-122
Ethylbenzene	ug/L (ppb)	50	<1	100	69-135
m,p-Xylene	ug/L (ppb)	100	<2	100	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140
Naphthalene	ug/L (ppb)	50	<1	100	44-164

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Benzene	ug/L (ppb)	50	100	104	69-134	4
Toluene	ug/L (ppb)	50	98	103	72-122	5
Ethylbenzene	ug/L (ppb)	50	96	101	77-124	5
m,p-Xylene	ug/L (ppb)	100	96	102	81-112	6
o-Xylene	ug/L (ppb)	50	93	97	81-121	4
Naphthalene	ug/L (ppb)	50	93	100	64-133	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report To: Amy Tiedt Eric Markster
 Company: Aspect Consulting
 Address: 710 2nd Ave Ste 550
 City, State, ZIP: Seattle, WA, 98104
 Phone: (206) 538-6585 Email: atiedt@aspectconsulting.com

SAMPLERS (signature) *[Signature]*
 PROJECT NAME: Sander's Rent
 REMARKS: 170052
 PO #: AP
 INVOICE TO: AP

TURNAROUND TIME
 Standard Turnaround
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Dispose after 30 days
 Archive Samples
 Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	BTEX BY 8260L	Naphthalene by 8260				
MW-121-041032AD	01A-F	4/3/20	150	WL	6			X						X				
MW-122-041032AD	02	1	135															
						Samples received at 2 °C												

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Relinquished by: <i>[Signature]</i>		Daniel Black		Aspect		4/3/20	16:30
Received by: <i>[Signature]</i>		Soac Lessig		FBI		4/3/20	16:30
Relinquished by:							
Received by:							

ATTACHMENT B

Gasoline Plume Stability Analysis

Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name: Smokey Point Retail Center
 Site Address: Marysville, WA
 Additional Description:

Well (Sampling) Location? MW114
 Level of Confidence (Decision Criteria)? 85%

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

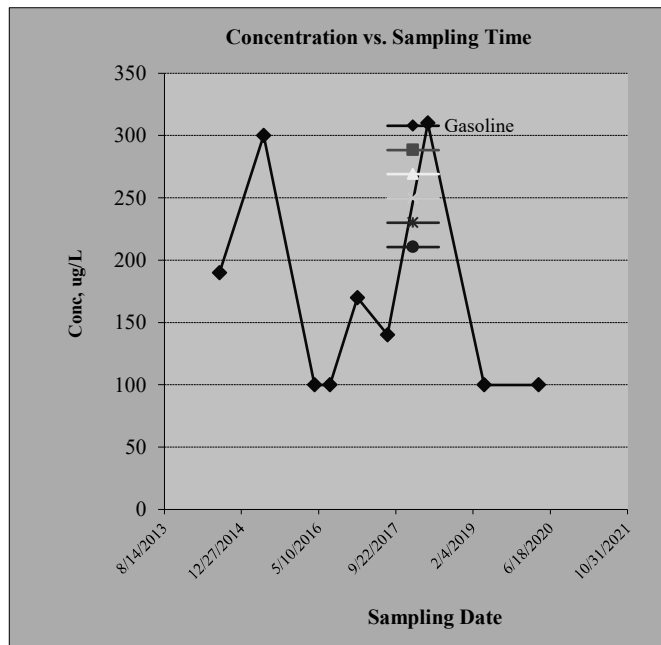
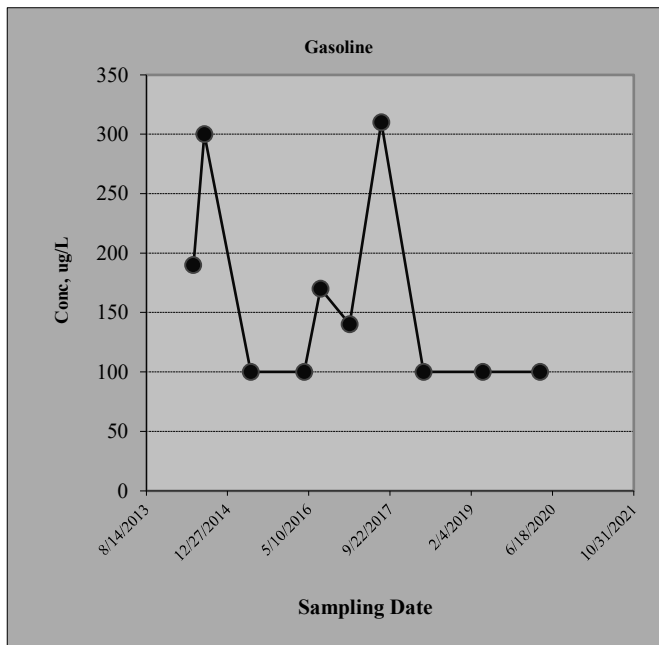
Sampling Event	Date Sampled	Hazardous Substances (unit is ug/L)				
		Gasoline				
#1	5/30/2014	190				
#2	8/7/2014	300				
#3	5/20/2015	100				
#4	4/13/2016	100				
#5	7/22/2016	170				
#6	1/16/2017	140				
#7	7/31/2017	310				
#8	4/17/2018	100				
#9	4/16/2019	100				
#10	4/3/2020	100				
#11						
#12						
#13						
#14						
#15						
#16						

2. Mann-Kendall Non-parametric Statistical Test Results

Hazardous Substance?	Gasoline					
Confidence Level Calculated?	85.40%	NA	NA	NA	NA	NA
Plume Stability?	Shrinking	NA	NA	NA	NA	NA
Coefficient of Variation?		n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	-13	0	0	0	0	0
Number of Sampling Rounds?	10	0	0	0	0	0
Average Concentration?	161.00	NA	NA	NA	NA	NA
Standard Deviation?	82.66	NA	NA	NA	NA	NA
Coefficient of Variation?	0.51	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? Gasoline
 Plume Stability? Shrinking



Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name: Smokey Point Retail Center
 Site Address: Marysville, WA
 Additional Description: _____

Well (Sampling) Location? MW114
 Level of Confidence (Decision Criteria)? 85%

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

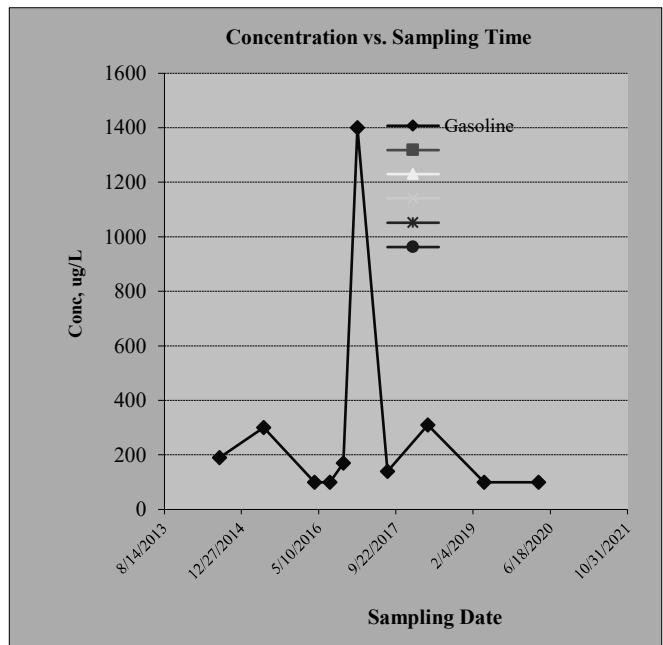
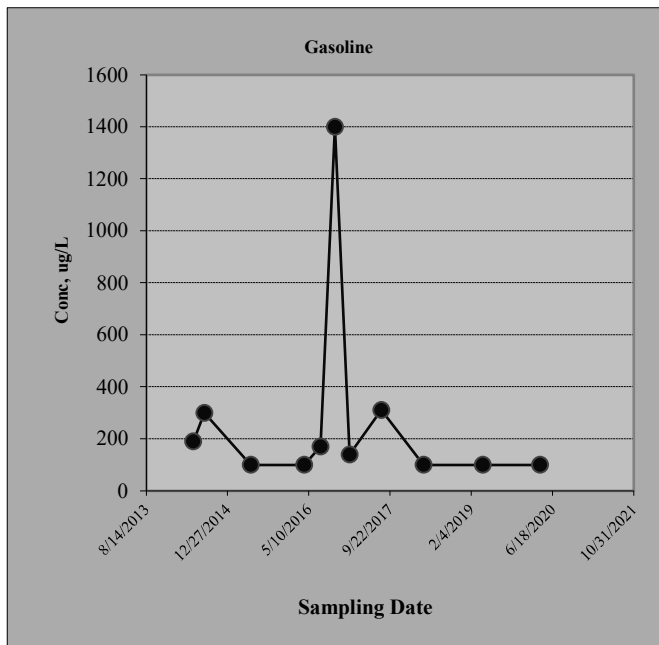
Sampling Event	Date Sampled	Hazardous Substances (unit is ug/L)				
		Gasoline				
#1	5/30/2014	190				
#2	8/7/2014	300				
#3	5/20/2015	100				
#4	4/13/2016	100				
#5	7/22/2016	170				
#6	10/18/2016	1400				
#7	1/16/2017	140				
#8	7/31/2017	310				
#9	4/17/2018	100				
#10	4/16/2019	100				
#11	4/3/2020	100				
#12						
#13						
#14						
#15						
#16						

2. Mann-Kendall Non-parametric Statistical Test Results

Hazardous Substance?	Gasoline					
Confidence Level Calculated?	82.10%	NA	NA	NA	NA	NA
Plume Stability?	Undetermined	NA	NA	NA	NA	NA
Coefficient of Variation?	CV > 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	-13	0	0	0	0	0
Number of Sampling Rounds?	11	0	0	0	0	0
Average Concentration?	273.64	NA	NA	NA	NA	NA
Standard Deviation?	381.71	NA	NA	NA	NA	NA
Coefficient of Variation?	1.39	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? Gasoline
 Plume Stability? Undetermined



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

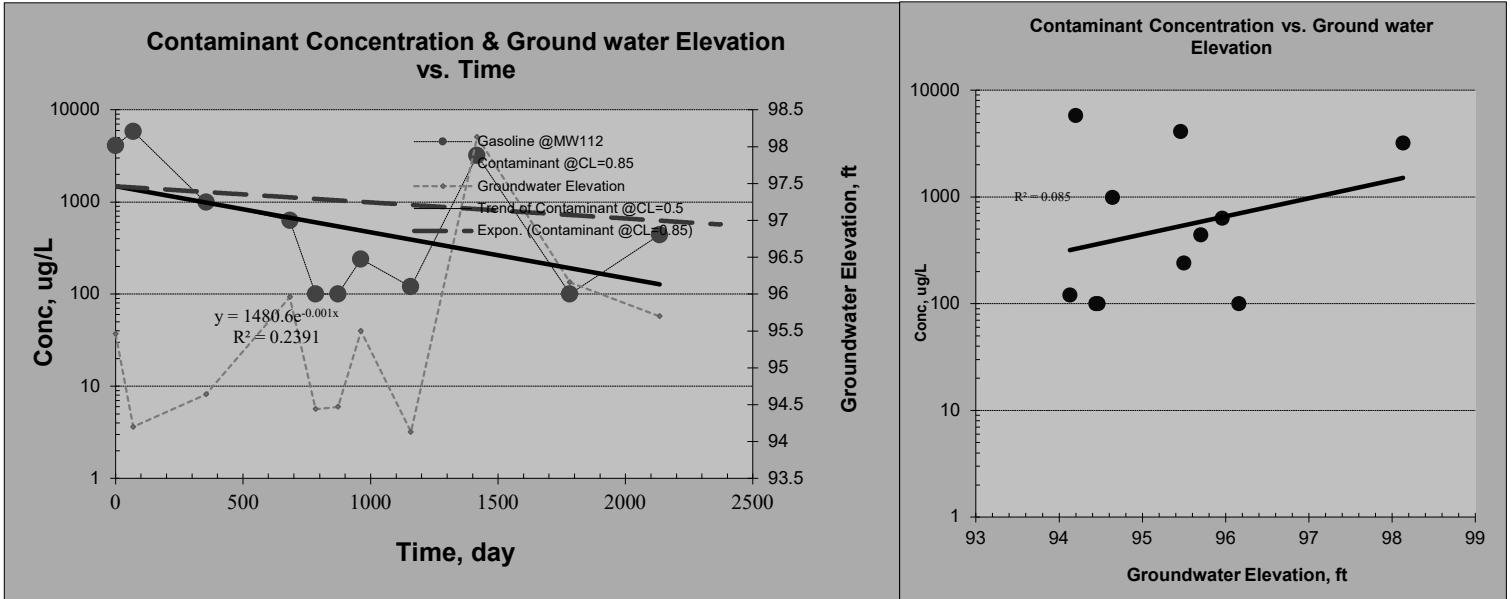
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance: *Gasoline*

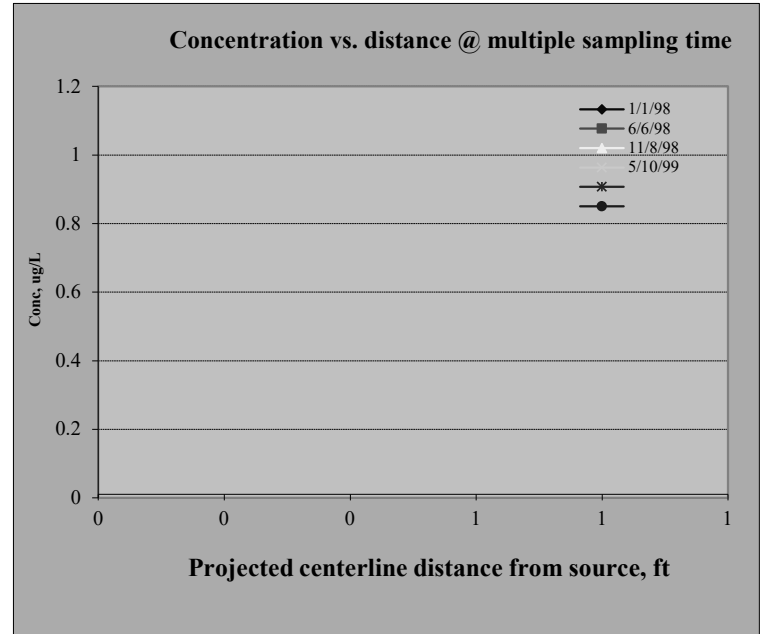
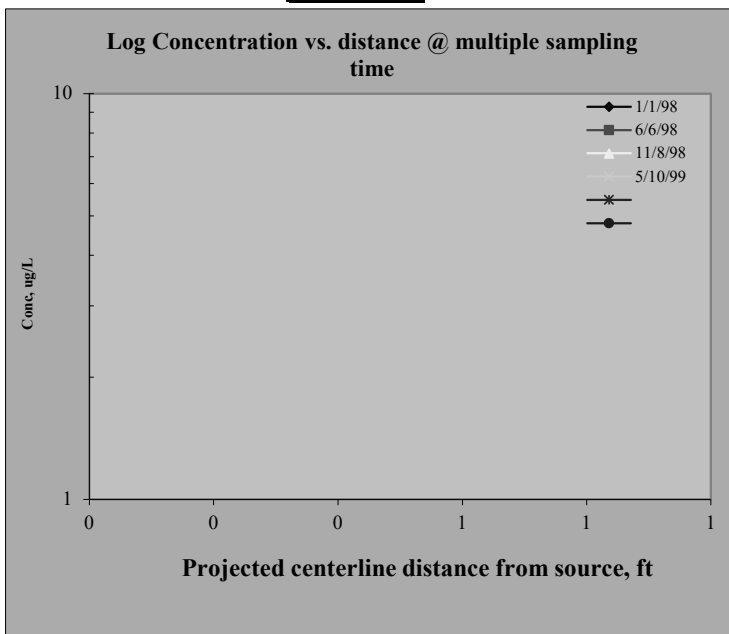
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW112	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	87.310%		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.419 @50% C.L.;	0.147 @85% C.L.	
Half Life for k_{point} , yr	1.654 @50% C.L.;	4.725 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

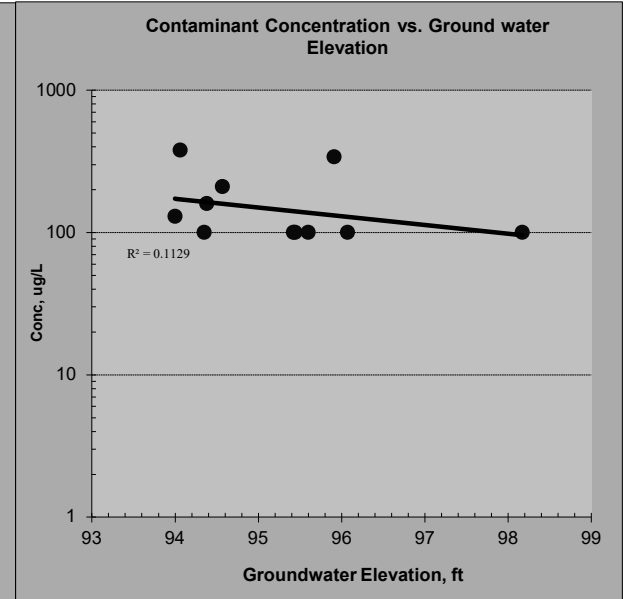
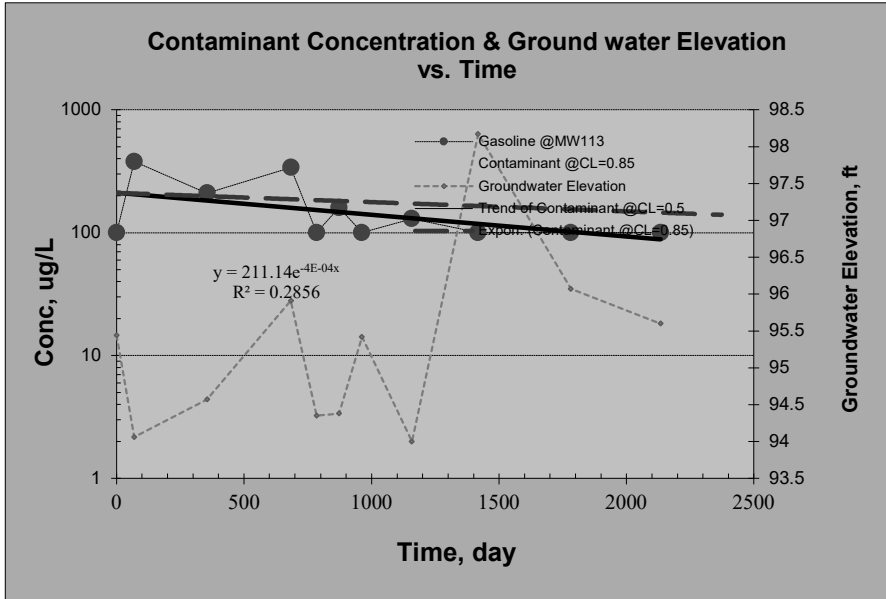
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance: *Gasoline*

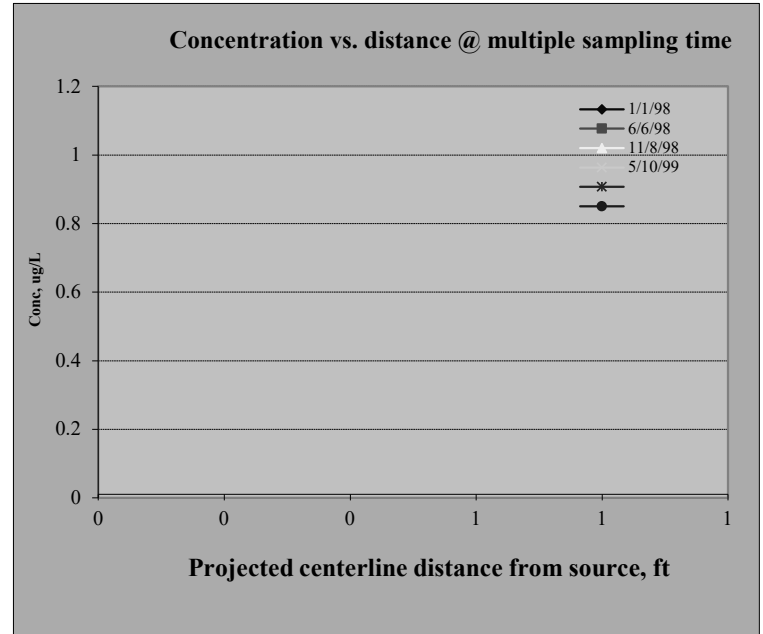
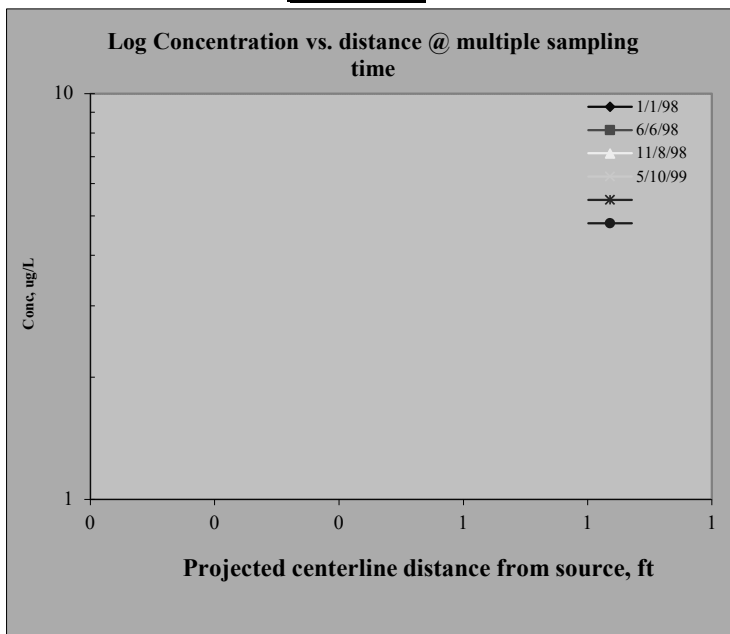
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW113	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	90.963%		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.150 @50% C.L.;	0.063 @85% C.L.	
Half Life for k_{point} , yr	4.634 @50% C.L.;	10.937 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

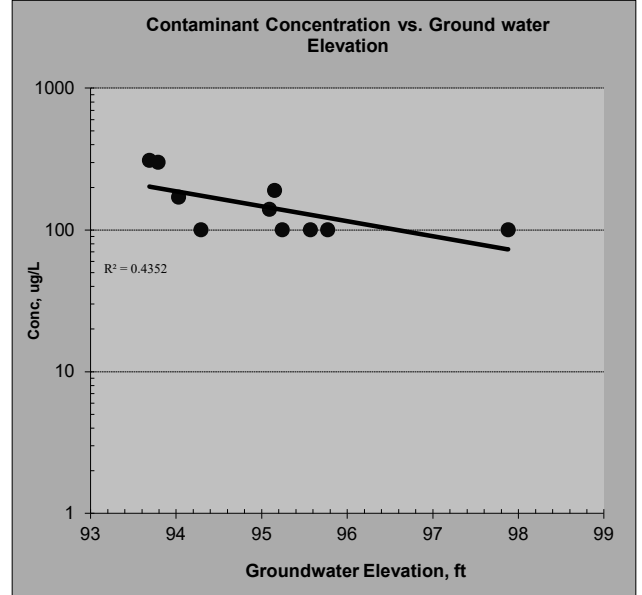
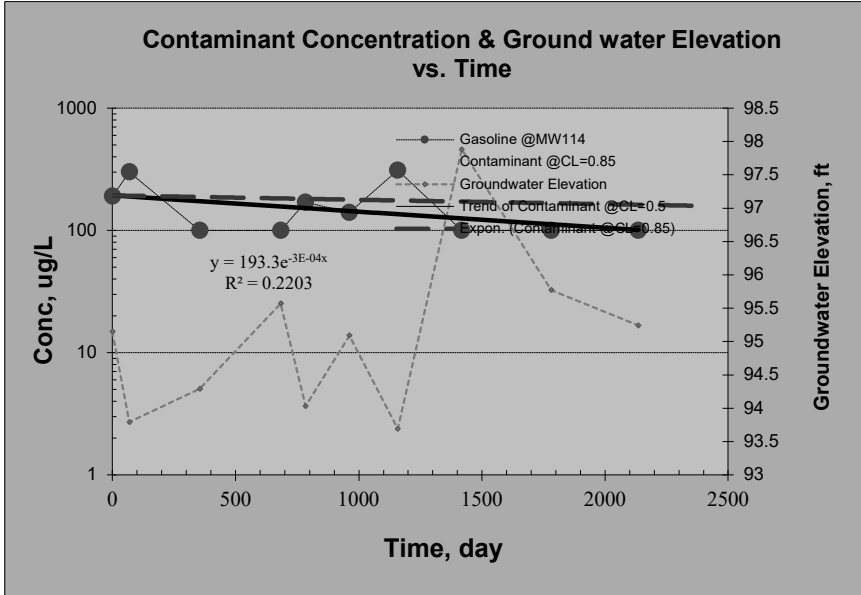
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance: *Gasoline*

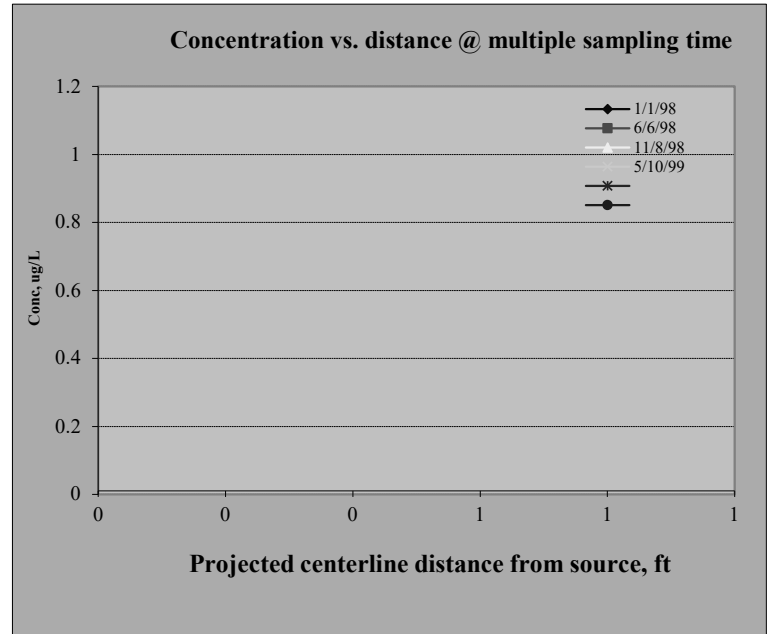
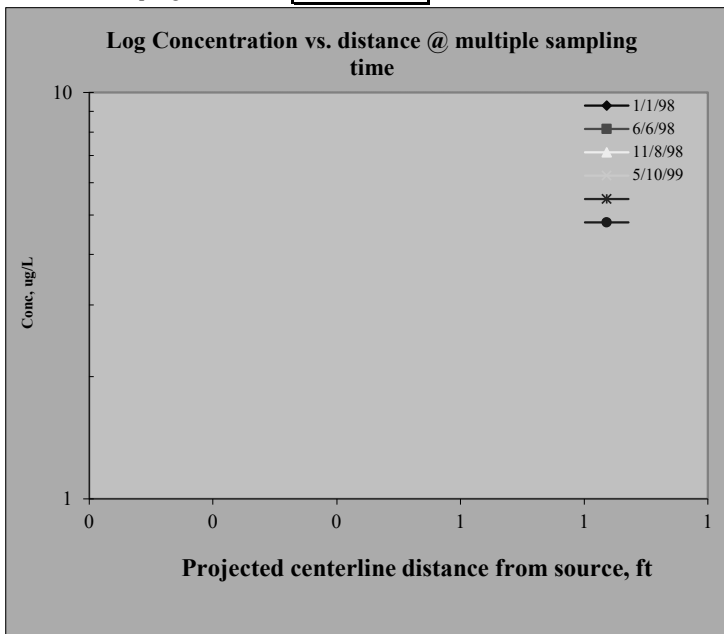
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW114	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	82.892%		
Plume Stability?	Stable	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.111 @50% C.L.;	0.030 @85% C.L.	
Half Life for k_{point} , yr	6.224 @50% C.L.;	23.170 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

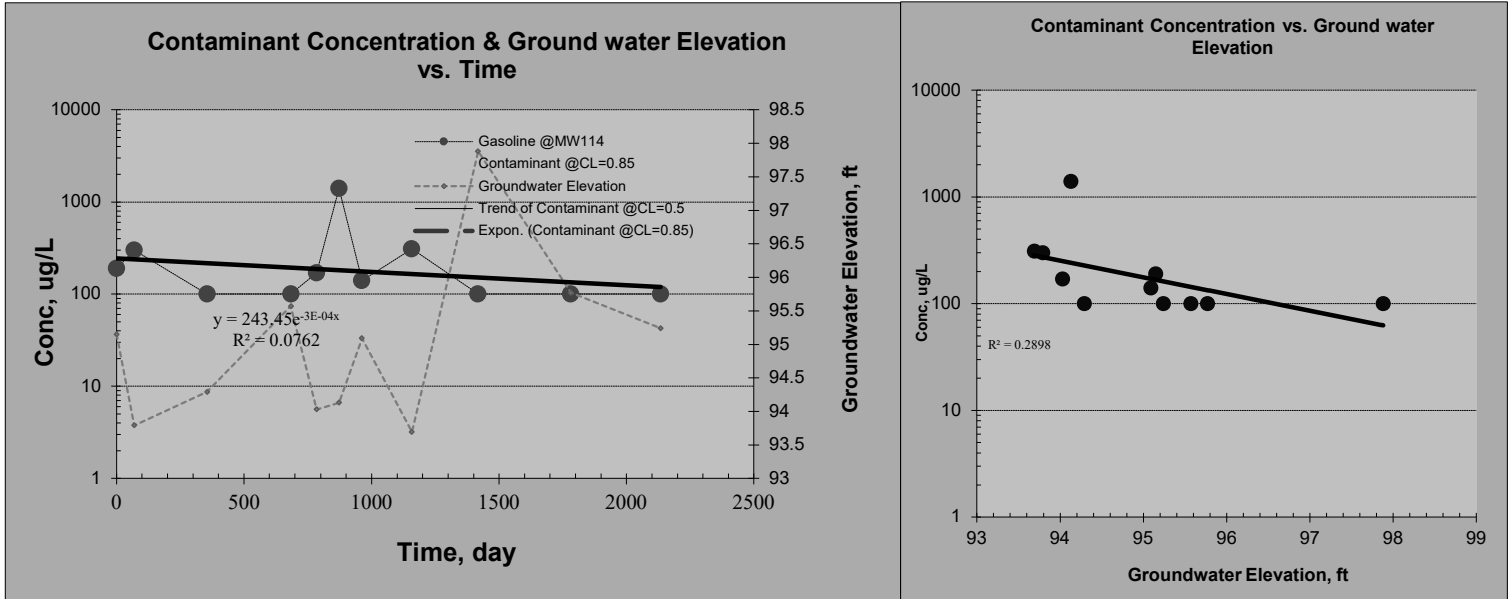
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance: *Gasoline*

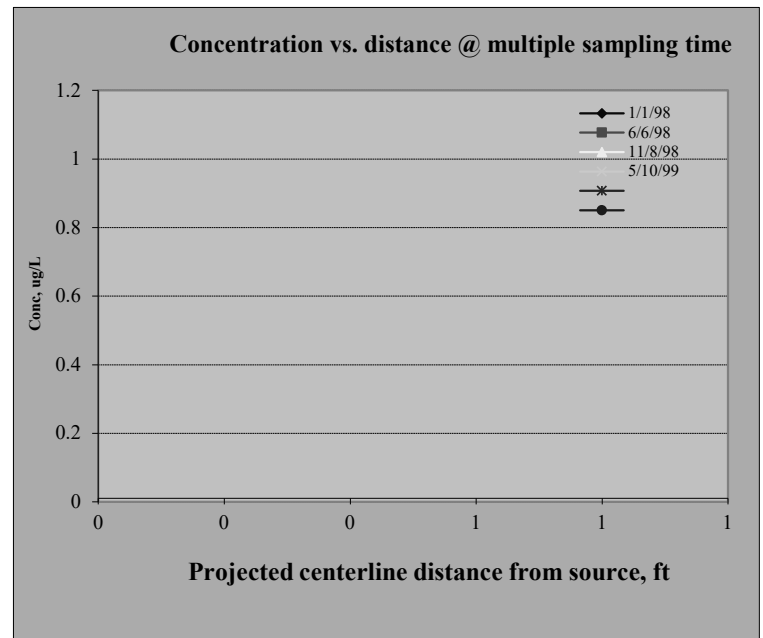
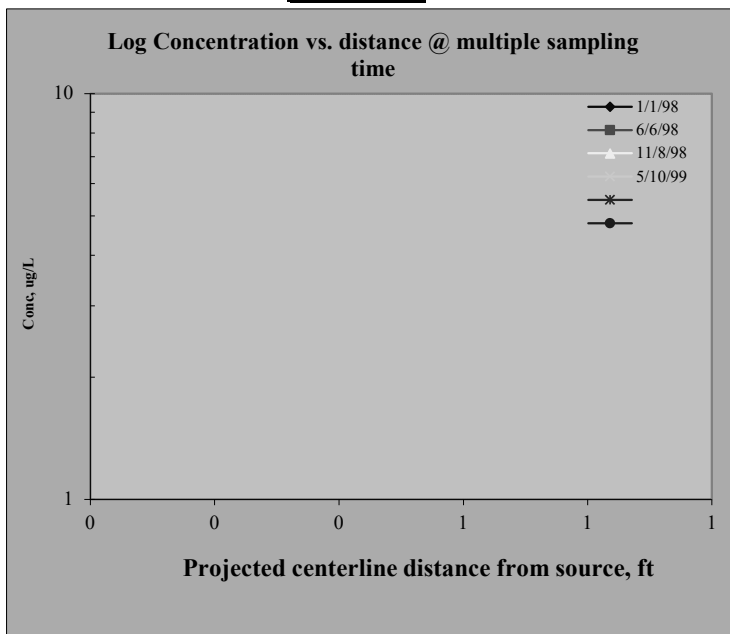
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW114	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	58.870%		
Plume Stability?	UD	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	NA	@50% C.L.;	NA @85% C.L.
Half Life for k_{point} , yr	NA	@50% C.L.;	NA @85% C.L.



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



ATTACHMENT C

Benzene Plume Stability Analysis

Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

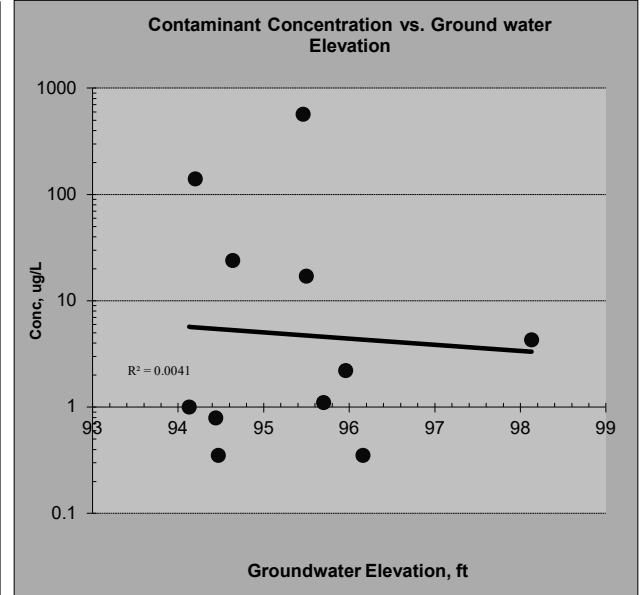
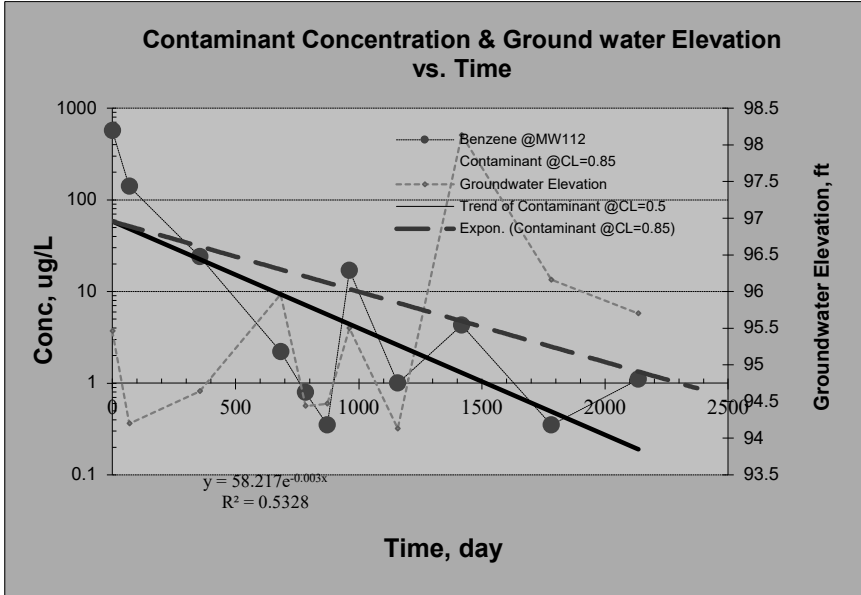
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance *Benzene*

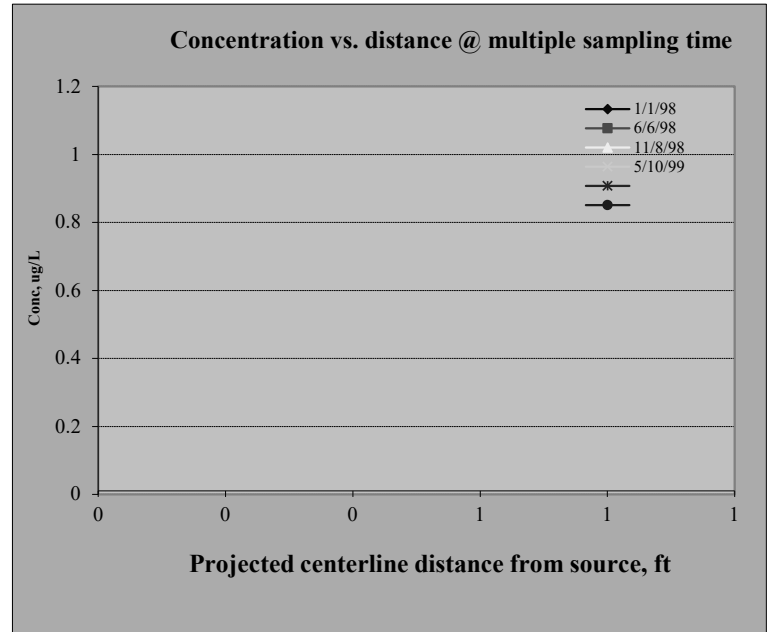
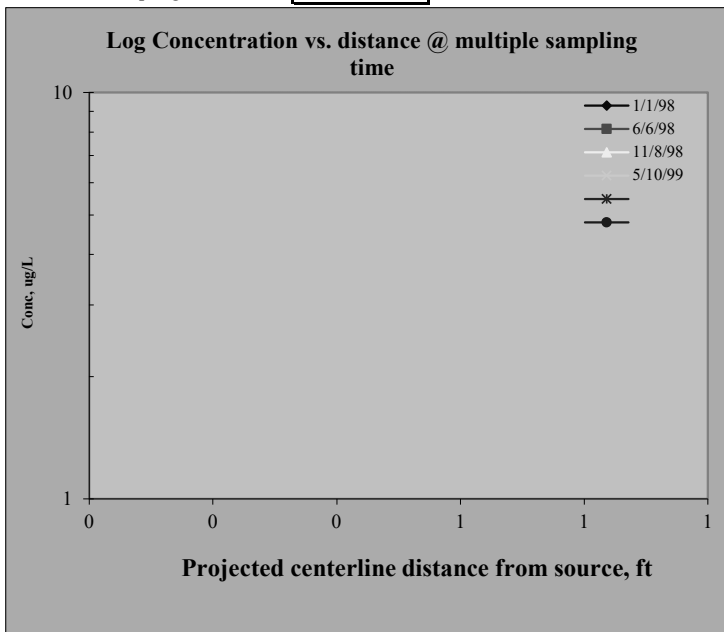
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW112	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	98.923%		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.979 @50% C.L.;	0.645 @85% C.L.	
Half Life for k_{point} , yr	0.708 @50% C.L.;	1.075 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

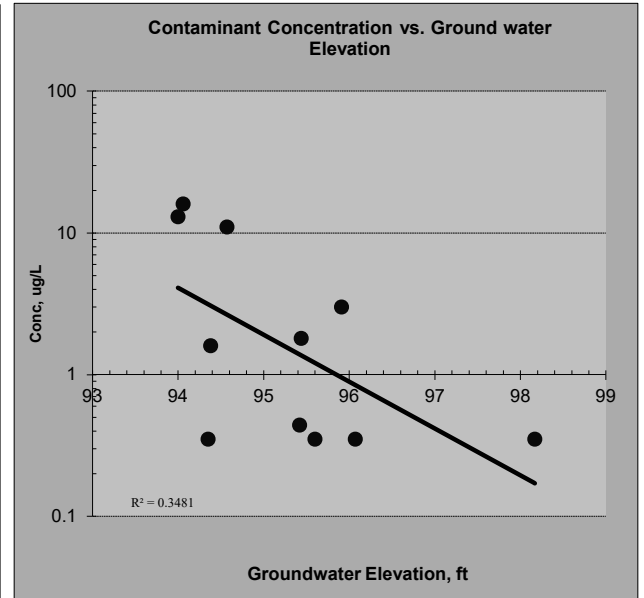
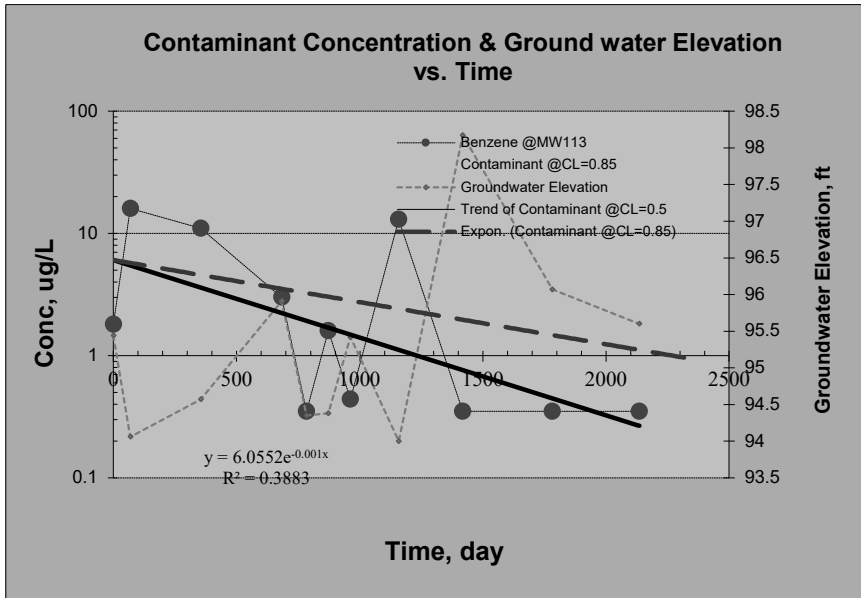
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance: *Benzene*

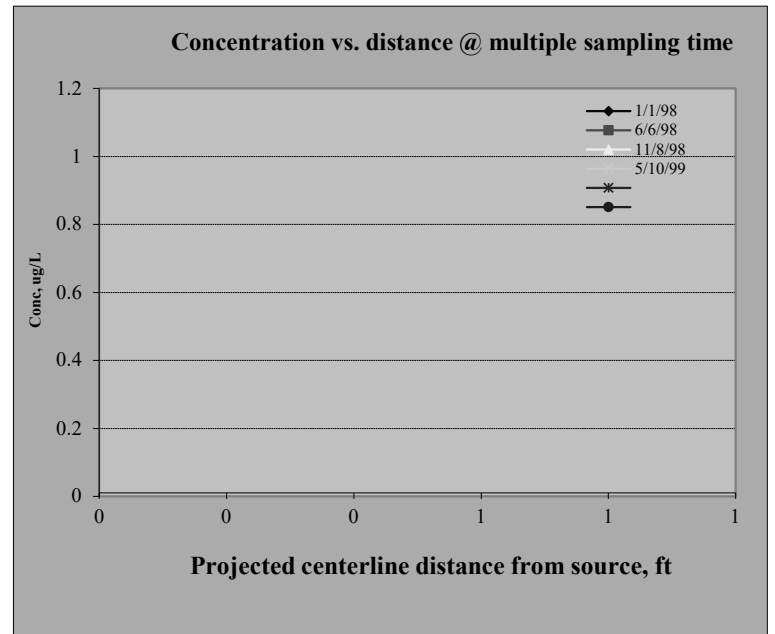
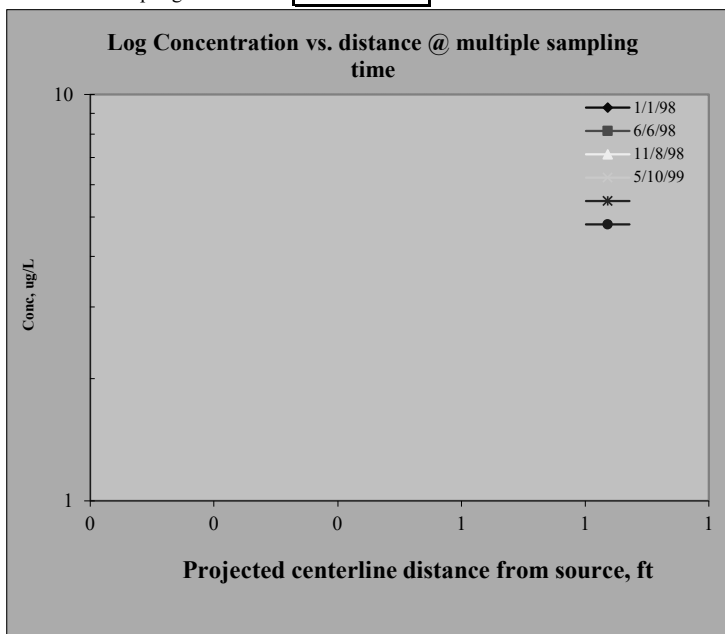
1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW113	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	95.947%		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.534 @50% C.L.;	0.290 @85% C.L.	
Half Life for k_{point} , yr	1.299 @50% C.L.;	2.394 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	



Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*

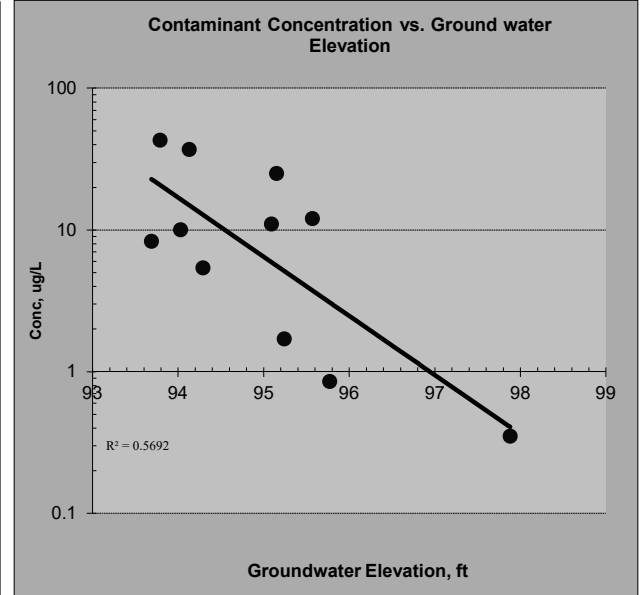
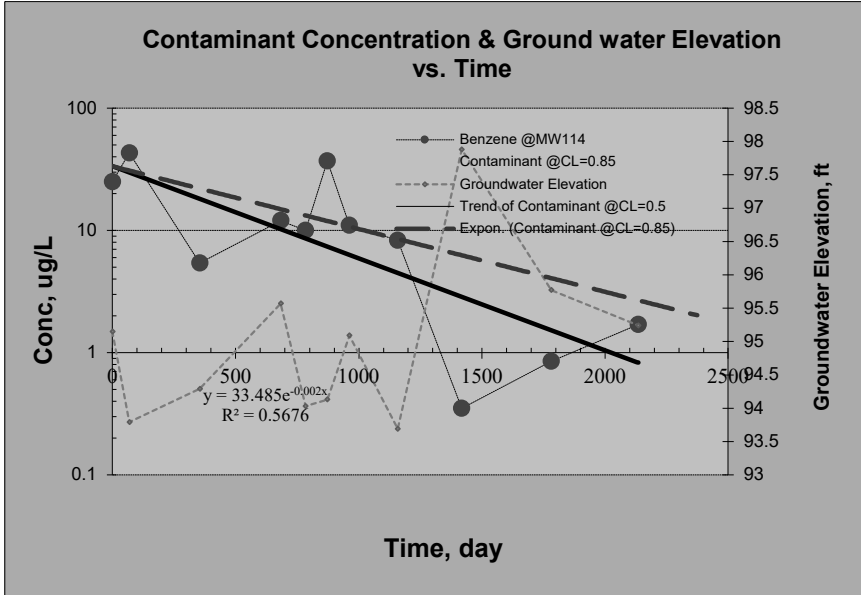
Site Address: *Marysville, WA*

Additional Description: *0*

Hazardous Substance *Benzene*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	MW114	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	99.257%		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr ⁻¹	0.633 @50% C.L.;	0.432 @85% C.L.	
Half Life for k_{point} , yr	1.095 @50% C.L.;	1.605 @85% C.L.	



2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1: Sampling date #1	1-Jan-98
Plot #2: Sampling date #2	6-Jun-98
Plot #3: Sampling date #3	8-Nov-98
Plot #4: Sampling date #4	10-May-99
Plot #5: Sampling date #5	
Plot #6: Sampling date #6	

