



May 4, 2018

Mr. In Chol Baek  
 1734 Boulevard Road SE  
 Olympia, Washington 98501-2675

RE: ***April 2018 Groundwater Sampling Results Report***  
*Pit Stop Market*  
 1734 Boulevard Road SE  
 Olympia, Washington 98501-2675  
 Ecology Facility/Site ID: 69986581

Dear Mr. In Chol Baek:

Associated Environmental Group, LLC (AEG) has prepared the enclosed ***Groundwater Sampling Results Report*** presenting results of groundwater sampling conducted on April 6, 2018, at the *Pit Stop Market* in Olympia, Washington (Site). The Site and surrounding area are detailed in Figure 1, *Vicinity Map*.

**WORK PERFORMED [April 2018]:**

- Obtained depth to groundwater data from six groundwater wells (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6).
- Purged and sampled six groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6).

**GROUNDWATER MONITORING SUMMARY:**

Sampling Event:	April 2018	Values
Range of Depths to Groundwater:	5.24 to 7.42	Feet below top of well casing (Table 1, <i>Summary of Groundwater Elevations</i> )
Range of Groundwater Elevations:	152.66 to 157.86	Feet above Mean Sea Level (Table 1, <i>Summary of Groundwater Elevations</i> )
Groundwater Gradient: (Direction / Magnitude)	0.005/ South	Feet per foot (ft/ft), Determined using data from MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6
Measureable NAPL Detected:	No	
Measureable NAPL Thickness:	N/A	
Current Remedial Action:	None	

**DISCUSSION:**

Contaminant concentrations were detected in samples of groundwater collected from monitoring wells MW-1, MW-2, MW-3, and MW-4. No contaminant concentrations were detected above their laboratory detection limit in samples of groundwater collected from monitoring wells MW-5 and MW-6. Detected concentrations are summarized below. The full analytical results for this sampling event, and historical results, are presented in the attached Table 2, *Summary of Groundwater Analytical Results*.

April 2018					
Well ID	TPH-Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
MW-1	20,900	1.0	4,500	4,840	22,700
MW-2	7,570	<1.0	<2.0	38	115
MW-3	<100	<1.0	<2.0	<1.0	2.8
MW-4	373	<1.0	<2.0	11	11
MTCA Method A Cleanup Levels	800	5	1,000	700	1,000

µg/L = micrograms per liter

- Gasoline-range total petroleum hydrocarbons (TPH) were detected **above** the Model Toxics Control Act (MTCA) Method A cleanup level in monitoring wells MW-1 and MW-2. Gasoline-range TPH was detected **below** the MTCA Method A cleanup level in monitoring well MW-4.
- Toluene, ethylbenzene, and total xylenes were detected **above** their respective MTCA Method A cleanup levels in monitoring well MW-1.
- Benzene was detected **below** the MTCA Method A cleanup level in monitoring well MW-1.
- Total xylenes were detected **below** the MTCA Method A cleanup level in monitoring wells MW-2, MW-3, and MW-4.
- Ethylbenzene was detected **below** the MTCA Method A cleanup level in monitoring wells MW-2 and MW-4.

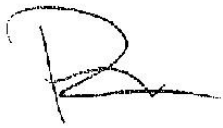
The groundwater flow direction for the April 2018 sampling event is primarily towards the south. The approximate gradient is 0.005 feet per foot (Figure 2, *April 2018 Groundwater Contour Map*).

**CONCLUSION:**

AEG has completed this monitoring event at the Site. Thank you for the opportunity to provide you with environmental consulting services. Should you have questions or require additional information, please contact our office at 360-352-9835.

Sincerely,

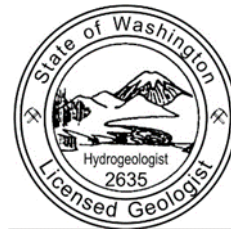
**Associated Environmental Group, LLC**



Becky Dilba, R.S.A.  
Project Manager



Scott Rose, L.H.G.  
Senior Hydrogeologist



SCOTT I ROSE

Attachments:

Figure 1: *Vicinity Map*

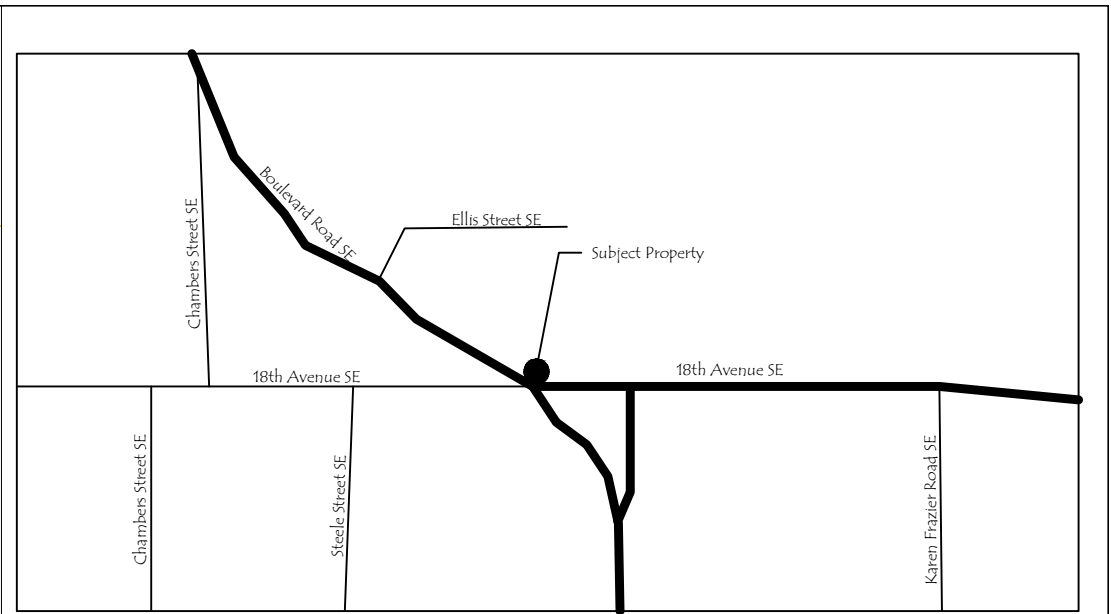
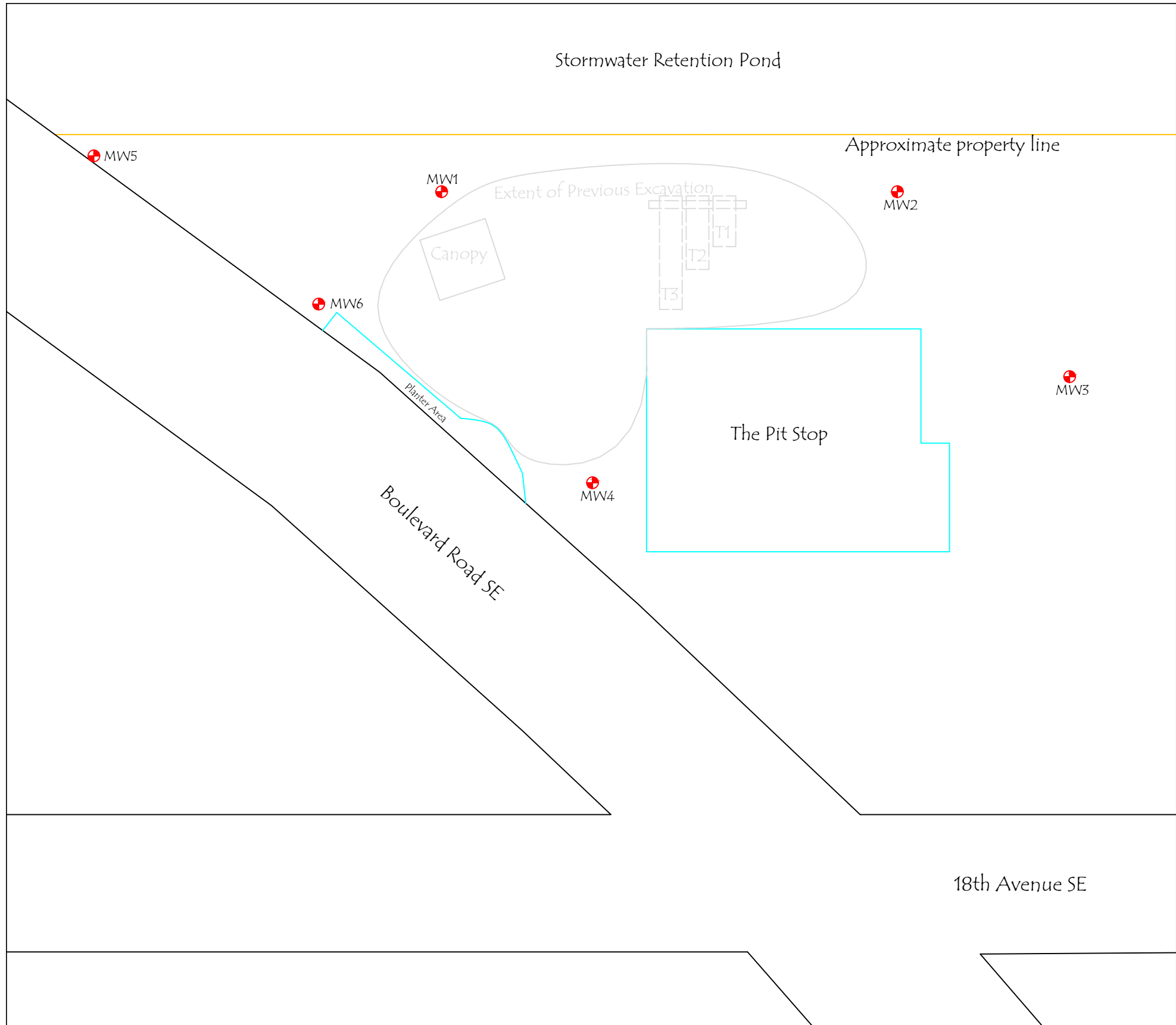
Figure 2: *April 2018 Groundwater Contour Map*

Table 1: *Summary of Groundwater Elevations*

Table 2: *Summary of Groundwater Analytical Results*

Appendix A: *Laboratory Data Sheets*

## **FIGURES**



SITE VICINITY MAP (Not to Scale)



LEGEND

⊕ Groundwater monitoring well locations

DRAWING SCALE: 1"= 200'

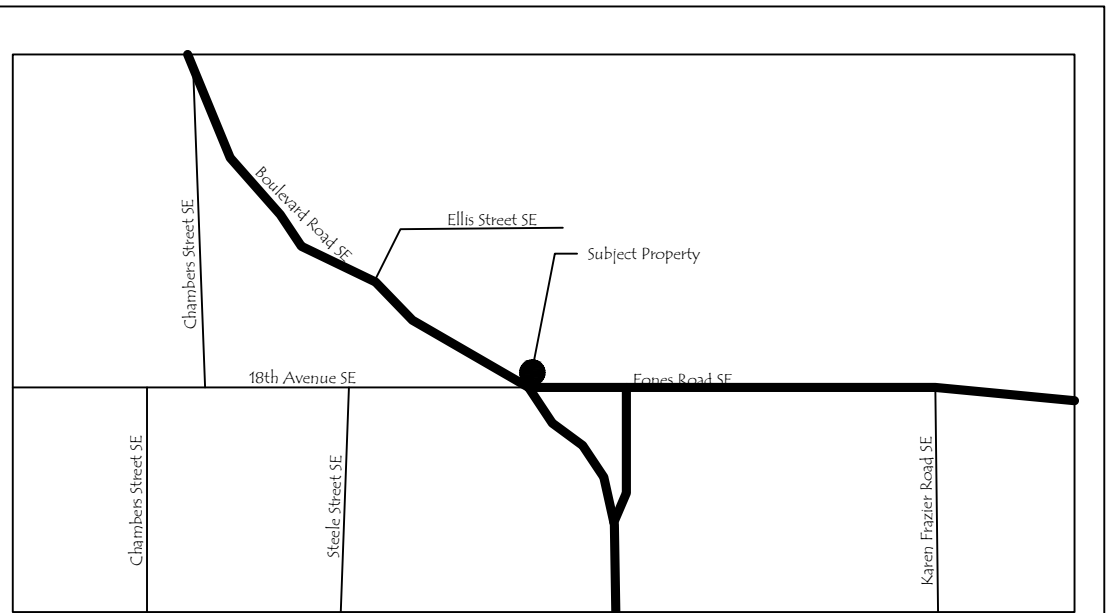
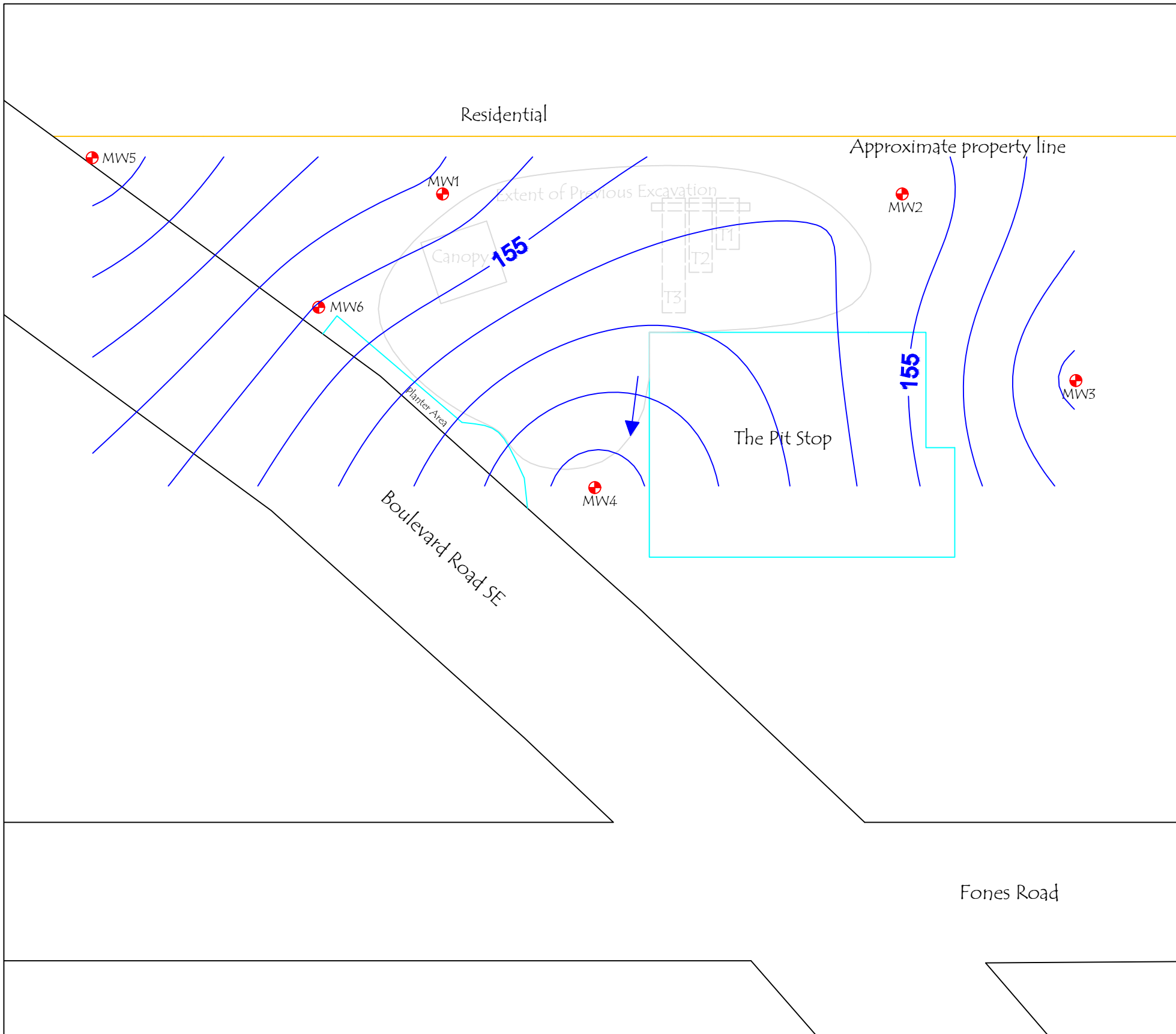
Notes: (a) The locations of all features shown are approximate.  
 (b) This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from sketch provided by AEGs' personnel.



FIGURE 1  
VICINITY MAP

THE PIT STOP 1734 BOULEVARD RD SE OLYMPIA, WA	
Project: 06-177	Date: 03/01/17



SITE VICINITY MAP (Not to Scale)

LEGEND

⊕ Groundwater monitoring well locations

DRAWING SCALE: 1" = 200'

Notes: (a) The locations of all features shown are approximate.  
 (b) This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.  
 Reference: Drawing created from sketch provided by AEGs' personnel.



FIGURE 2  
 APRIL 2018 GROUNDWATER  
 CONTOUR MAP

THE PIT STOP 1734 BOULEVARD RD SE OLYMPIA, WA	
Project:	Date:
06-177	01/31/07

## **TABLES**

**Table 1 - Summary of Groundwater Elevations**

Pit Stop Grocery  
Olympia, Washington

Well Number/ TOC Elevation	Date	Depth to Water	Depth to Free Product	Free Product Thickness	Groundwater Elevation	Change in Groundwater Elevation
MW-1	06/21/06	7.76	--	--	154.17	--
161.93	10/05/06	11.40	--	--	150.53	-3.64
	01/31/07	5.80	--	--	156.13	5.60
	07/18/07	7.96	--	--	153.97	-2.16
	11/07/07	8.80	--	--	153.13	-0.84
	04/07/08	6.21	--	--	155.72	2.59
	02/07/13	6.47	--	--	155.46	-0.26
	01/31/14	8.15	--	--	153.78	-1.68
	05/15/15	7.55	--	--	154.38	0.60
	03/01/17	4.76	--	--	157.17	2.79
	04/06/18	6.03	--	--	155.90	-1.27
MW-2	06/21/06	7.45	--	--	153.73	--
161.18	10/05/06	12.08	--	--	149.10	-4.63
	01/31/07	6.39	--	--	154.79	5.69
	07/18/07	8.70	--	--	152.48	-2.31
	11/07/07	9.94	--	--	151.24	-1.24
	04/07/08	6.89	--	--	154.29	3.05
	02/07/13	7.23	--	--	153.95	-0.34
	01/31/14	9.07	--	--	152.11	-1.84
	05/15/15	8.31	--	--	152.87	0.76
	03/01/17	6.37	--	--	154.81	1.94
	04/06/18	6.64	--	--	154.54	-0.27
MW-3	01/31/07	5.08	--	--	156.84	--
161.92	07/18/07	7.26	--	--	154.66	-2.18
	11/07/07	8.75	--	--	153.17	-1.49
	04/07/08	5.60	--	--	156.32	3.15
	02/07/13	5.88	--	--	156.04	-0.28
	01/31/14	7.82	--	--	154.10	-1.94
	05/15/15	6.88	--	--	155.04	0.94
	03/01/17	5.14	--	--	156.78	1.74
	04/06/18	5.24	--	--	156.68	-0.10
MW-4	01/31/07	7.04	--	--	153.04	--
160.08	07/18/07	9.30	--	--	150.78	-2.26
	11/07/07	10.69	--	--	149.39	-1.39
	04/07/08	7.64	--	--	152.44	3.05
	02/07/13	7.96	--	--	152.12	-0.32
	01/31/14	9.95	--	--	150.13	-1.99
	05/15/15	9.12	--	--	150.96	0.83
	03/01/17	7.07	--	--	153.01	2.05
	04/06/18	7.42	--	--	152.66	-0.35

**Table 1 - Summary of Groundwater Elevations**

Pit Stop Grocery  
Olympia, Washington

Well Number/ TOC Elevation	Date	Depth to Water	Depth to Free Product	Free Product Thickness	Groundwater Elevation	Change in Groundwater Elevation
MW-5	01/31/07	4.54	--	--	159.05	--
163.59	07/18/07	6.35	--	--	157.24	-1.81
	11/07/07	8.18	--	--	155.41	-1.83
	04/07/08	4.69	--	--	158.90	3.49
	02/07/13	4.99	--	--	158.60	-0.30
	01/31/14	6.39	--	--	157.20	-1.40
	05/15/15	6.10	--	--	157.49	0.29
	03/01/17	4.50	--	--	159.09	1.60
	04/06/18	5.73	--	--	157.86	-1.23
MW-6	01/31/07	5.83	--	--	155.79	--
161.62	07/18/07	7.96	--	--	153.66	-2.13
	11/07/07	8.89	--	--	152.73	-0.93
	04/07/08	6.28	--	--	155.34	2.61
	02/07/13	6.58	--	--	155.04	-0.30
	01/31/14	8.37	--	--	153.25	-1.79
	05/15/15	6.69	--	--	154.93	1.68
	03/01/17	5.78	--	--	155.84	0.91
	04/06/18	6.15	--	--	155.47	-0.37

## Notes:

All values reported in feet

TOC = Top of casing elevation relative to assigned benchmark.

-- = Not measured, not available, or not applicable

\* = Ceased groundwater monitoring/sampling activities at this well

**Table 2 - Summary of Groundwater Analytical Results**  
Pit Stop Market  
Olympia, WA

Sample Number	Date Sampled	Volatile Organic Compounds				Gasoline	Table 830-1 Constituents				
		Benzene	Toluene	Ethyl-benzene	Total Xylenes		EDC	EDB	Total Naphthalene	MTBE	Lead
MW-1	6/21/2006	272	3,090	3,690	15,200	71,600	--	--	--	--	--
	10/5/2006	364	5,730	4,730	16,300	40,800	<1.0	<0.2	<5.0	1,170	430
	1/31/2007	48	819	480	2,560	12,000	--	--	--	--	--
	7/18/2007	363	7,180	3,010	11,700	66,300	--	--	--	--	--
	11/7/2007	54	11,500	4,200	22,400	111,000	--	--	--	--	--
	4/8/2008	48.7	3,330	942	6,920	45,000	--	--	--	--	--
	2/7/2013	62.7	7,330	2,480	15,400	114,000	--	--	--	--	--
	1/31/2014	7.2	3,670	5,730	30,200	90,600	--	--	--	--	--
	5/18/2015	<1.0	1,070	795	3,670	170,000	--	--	--	--	--
	3/1/2017	<1.0	2,970	2,850	15,100	69,600	--	--	--	--	--
4/6/2018	1.0	4,500	4,840	22,700	20,900	--	--	--	--	--	
MW-2	6/21/2006	165	434	785	2,480	20,300	--	--	--	--	--
	10/5/2006	175	78.7	1,830	7,250	17,200	<1.0	<0.2	<5.0	228	150
	1/31/2007	<1.0	1.5	<1.0	8.7	<100	--	--	--	--	--
	7/18/2007	32	565	855	3,670	2,300	--	--	--	--	--
	11/7/2007	73	475	1,810	6,110	45,500	--	--	--	--	--
	4/8/2008	2.6	<1.0	9.1	89.7	1,860	--	--	--	--	--
	2/7/2013	13.9	15.3	64.9	154	8,490	--	--	--	--	--
	1/31/2014	<1.0	4.9	3.4	82	2,020	--	--	--	--	--
	5/18/2015	<1.0	<2.0	158	331	25,800	--	--	--	--	--
	3/1/2017	<1.0	<2.0	8.3	27.1	3,520	--	--	--	--	--
4/6/2018	<1.0	<2.0	38	115	7,570	--	--	--	--	--	
MW-3	1/31/2007	<1.0	<1.0	<1.0	<1.0	<100	--	--	--	--	--
	7/18/2007	3.7	75	41	152	980	--	--	--	--	--
	11/7/2007	1.2	45	15	65	317	--	--	--	--	--
	4/8/2008	<1.0	<1.0	<1.0	<1.0	<100	--	--	--	--	--
	2/7/2013	<1.0	<2.0	<1.0	<3.0	<100	--	--	--	--	--
	1/31/2014	<1.0	<2.0	<1.0	<2.0	<100	--	--	--	--	--
	5/18/2015	<1.0	<2.0	<1.0	<2.0	<100	--	--	--	--	--
	3/1/2017	<1.0	<2.0	<1.0	<3.0	<100	--	--	--	--	--
4/6/2018	<1.0	<2.0	<1.0	2.8	<100	--	--	--	--	--	
MW-4	1/31/2007	<1.0	<1.0	<1.0	<1.0	<100	--	--	--	--	--
	7/18/2007	6.6	18.1	71.6	165	17,600	--	--	--	--	--
	11/7/2007	26	25	36	92	5,650	--	--	--	--	--
	4/8/2008	1.8	6.4	32.3	69.9	10,600	--	--	--	--	--
	2/7/2013	3.34	10.8	<1.0	12.2	6,060	--	--	--	--	--
	1/31/2014	<1.0	<2.0	1.4	<2.0	2,700	--	--	--	--	--
	5/18/2015	<1.0	<2.0	61.0	103	12,600	--	--	--	--	--
	3/1/2017	<1.0	<2.0	<1.0	<3.0	300	--	--	--	--	--
4/6/2018	<1.0	<2.0	11	11	373	--	--	--	--	--	

**Table 2 - Summary of Groundwater Analytical Results**

Pit Stop Market

Olympia, WA

Sample Number	Date Sampled	Volatile Organic Compounds				Gasoline	Table 830-1 Constituents				
		Benzene	Toluene	Ethyl-benzene	Total Xylenes		EDC	EDB	Total Naphthalene	MTBE	Lead
MW-5	1/31/2007	<b>16.1</b>	<b>12.9</b>	<b>16.3</b>	<b>40.1</b>	<b>1,020</b>	--	--	--	--	--
	7/18/2007	<1.0	<1.0	<1.0	<1.0	<100	--	--	--	--	--
	11/7/2007	<1.0	<1.0	<1.0	<1.0	<100	--	--	--	--	--
	4/8/2008	<b>1.4</b>	<b>7.2</b>	<b>3.9</b>	<b>13.7</b>	<b>220</b>	--	--	--	--	--
	2/7/2013	<1.0	<2.0	<1.0	<3.0	<b>360</b>	--	--	--	--	--
	1/31/2014	<1.0	<2.0	<1.0	<2.0	<100	--	--	--	--	--
	5/18/2015	<1.0	<2.0	<1.0	<2.0	<b>1,461</b>	--	--	--	--	--
	3/1/2017	<1.0	<2.0	<1.0	<3.0	<b>940</b>	--	--	--	--	--
	4/6/2018	<1.0	<2.0	<1.0	<2.0	<100	--	--	--	--	--
MW-6	1/31/2007	<b>29.4</b>	<b>7.0</b>	<b>11.3</b>	<b>29.4</b>	<b>4,040</b>	--	--	--	--	--
	7/18/2007	<b>11.1</b>	<b>13.9</b>	<b>19</b>	<b>53.1</b>	<b>2,480</b>	--	--	--	--	--
	11/7/2007	<b>20</b>	<b>10</b>	<b>8.8</b>	<b>38</b>	<b>3,150</b>	--	--	--	--	--
	4/8/2008	<b>2.3</b>	<b>7.7</b>	<b>3.4</b>	<b>17.7</b>	<b>1,000</b>	--	--	--	--	--
	2/7/2013	<b>1.7</b>	<b>5.1</b>	<1.0	<b>4.0</b>	<b>404</b>	--	--	--	--	--
	1/31/2014	<1.0	<2.0	<1.0	<2.0	<b>694</b>	--	--	--	--	--
	5/18/2015	<1.0	<2.0	<1.0	<2.0	<b>1,350</b>	--	--	--	--	--
	3/1/2017	<1.0	<2.0	<1.0	<3.0	<b>420</b>	--	--	--	--	--
	4/6/2018	<1.0	<2.0	<1.0	<2.0	<100	--	--	--	--	--
PQL	1.0	1.0 / 2.0	1.0	1.0 / 2.0 / 3.0	100	1.0	0.02	5.0	5.0	1.0	
MTCA Method A Cleanup Levels	5	1,000	700	1,000	800*	5	0.01	160	20	15	

Notes:

All values reported in micrograms per liter (µg/L)

-- = Not analyzed for constituent

< = Not detected at the listed laboratory detection limits

PQL = Practical Quantification Limit (laboratory detection limit)

**Red Bold** indicates the detected concentration exceeds Ecology MTCA Method A cleanup level

**Bold** indicates the detected concentration is below Ecology MTCA Method A cleanup levels

\* TPH-Gasoline Cleanup Level with the presence of Benzene anywhere at the Site

EDC = 1,2-Dichloroethane

EDB = Ethylene Dibromide

MTBE = Methyl Tert-Butyl Ether

## **APPENDIX A**

### **LABORATORY DATASHEETS**



# Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

April 12, 2018

Becky Dilba  
Associated Environmental Group, LLC  
605 11<sup>th</sup> Avenue SE, Suite 201  
Olympia, WA 98501

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Pit Stop Market Project located in Olympia, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt  
*Senior Chemist*  
*Libby Environmental, Inc.*

# Libby Environmental, Inc.

PIT STOP MARKET PROJECT  
AEG, LLC  
Olympia, Washington  
Libby Project # L180406-4  
Client Project # 06-177

4139 Libby Road NE  
Olympia, WA 98506  
Phone: (360) 352-2110  
FAX: (360) 352-4154  
Email: libbyenv@aol.com

## Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260C) in Water

Sample Number	Date Analyzed	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Gasoline (µg/L)	Surrogate Recovery (%)
Method Blank	4/6/18	nd	nd	nd	nd	nd	86
LCS	4/6/18	93%	80%				95
MW-1	4/6/18	1.0	4500	4840	22700	20900	86
MW-2	4/6/18	nd	nd	38	115	7570	85
MW-3	4/6/18	nd	nd	nd	2.8	nd	87
MW-4	4/6/18	nd	nd	11	11	373	85
MW-5	4/6/18	nd	nd	nd	nd	nd	87
MW-6	4/6/18	nd	nd	nd	nd	nd	86
MW-2 MS	4/6/18	78%	79%				88
MW-2 MSD	4/6/18	86%	75%				86
Practical Quantitation Limit		1.0	2.0	1.0	2.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

# Libby Environmental, Inc.

4139 Libby Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@aol.com

PIT STOP MARKET PROJECT

AEG, LLC

Libby Project # L180406-4

Date Received 4/6/2018

Time Received 4:16 PM

Received By EB

## Sample Receipt Checklist

### Chain of Custody

1. Is the Chain of Custody is complete?  Yes  No
2. How was the sample delivered?  Hand Delivered  Picked Up  Shipped

### Log In

3. Cooler or Shipping Container is present.  Yes  No  N/A
4. Cooler or Shipping Container is in good condition.  Yes  No  N/A
5. Cooler or Shipping Container has Custody Seals present.  Yes  No  N/A
6. Was an attempt made to cool the samples?  Yes  No  N/A
7. Temperature of cooler (0°C to 8°C recommended) 6.6 °C
8. Temperature of sample(s) (0°C to 8°C recommended) 9.4 °C
9. Did all containers arrive in good condition (unbroken)?  Yes  No
10. Is it clear what analyses were requested?  Yes  No
11. Did container labels match Chain of Custody?  Yes  No
12. Are matrices correctly identified on Chain of Custody?  Yes  No
13. Are correct containers used for the analysis indicated?  Yes  No
14. Is there sufficient sample volume for indicated analysis?  Yes  No
15. Were all containers properly preserved per each analysis?  Yes  No
16. Were VOA vials collected correctly (no headspace)?  Yes  No  N/A
17. Were all holding times able to be met?  Yes  No

### Discrepancies/ Notes

18. Was client notified of all discrepancies?  Yes  No  N/A

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: \_\_\_\_\_

Regarding: \_\_\_\_\_

19. Comments. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Libby Environmental, Inc.

# Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE  
Olympia, WA 98506  
Ph: 360-352-2110  
Fax: 360-352-4154

Date: 4-6-18 Page: 1 of 1

Client: AEG  
Address: 605 11th Ave SE Suite 201  
City: Olympia, WA State: WA Zip: 98501  
Phone: 360-352-9835 Fax:  
Client Project # 06-177

Project Manager: Becky DiIba  
Project Name: Pit Stop Market 06-177  
Location: 1734 Boulevard Road SE City, State: Olympia, WA  
Collector: Austin Schmalz Date of Collection: 4-6-18  
Email: aschmalz@cegwa.com



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes							
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals		RCRA 8 Metals						
1 MW-1		14:45	H2O	V02	X	X																	Odor
2 MW-2		13:40	↓	↓	X	X																	Odor
3 MW-3		11:40	↓	↓	X	X																	
4 MW-4		15:18	↓	↓	X	X																	Faint Odor
5 MW-5		12:40	↓	↓	X	X																	
6 MW-6		15:15	↓	↓	X	X																	
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							
16																							
17																							

Relinquished by: <u>AUSA [Signature]</u>	Date / Time: <u>4-6-18 16:16</u>	Received by: <u>[Signature]</u>	Date / Time: <u>4/6/18 16:16</u>	<b>Sample Receipt</b> Good Condition? Y N Temp. °C Seals Intact? Y N N/A Total Number of Containers	Remarks:    TAT: 24HR 48HR <b>5-DAY</b>
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		