

October 22, 2018

Washington State Department of Ecology
Toxics Cleanup Program – Central Region Office
1250 West Alder Street
Union Gap, WA 98903-0009

Attn: Mr. Jeff Newschwander

**RE: LETTER REPORT, RESULTS OF THE FIVE-YEAR REVIEW
GROUNDWATER SAMPLING, ALL NEW GLASS PROPERTY (VCNW0857),
LOTS 1 AND 2, 233 D STREET NW, AUBURN, WASHINGTON**

At the request of Mr. Troy Thomas, for your review and comment we submit the enclosed letter report documenting the Five-Year Review groundwater sampling event conducted on August 22, 2018, at the All New Glass property in Auburn, Washington.

Based on the current and historic results of the groundwater sampling, we propose that sampling activities be discontinued. Once we receive your approval, the wells at the site will be properly abandoned.

If you have any questions or comments, I can be reached at 206-695-6918.

Sincerely,

SHANNON & WILSON, INC.



David Randall
Senior Environmental Scientist

DJR:MJS/djr

Enc: Letter Report dated October 2, 2018

101324-001-L2/wp/lkn

October 2, 2018

Mr. Troy Thomas
All New Glass
319 D Street NW, Suite 103
Auburn, WA 98001

**RE: RESULTS OF THE FIVE-YEAR REVIEW GROUNDWATER SAMPLING,
ALL NEW GLASS PROPERTY, LOTS 1 AND 2, 233 D STREET NW,
AUBURN, WASHINGTON**

Dear Mr. Thomas:

At your request, Shannon & Wilson, Inc. has collected and analyzed groundwater samples from three shallow monitoring wells (MW-2, MW-4, and MW-5) for the five-year review sampling event on Lots 1 and 2 located at 233 D Street NW in Auburn, Washington (Figure 1) (Subject Property). During previous sampling events, monitoring well MW-1 had been sampled as part of the program; however, due to construction of a new building on the adjacent Lot 2, MW-1 was removed. Based on a phone conversation with Jeff Newschwander of the Washington State Department of Ecology (Ecology), Mr. Newschwander indicated that monitoring well MW-2 could be sampled in place of MW-1.

The samples were collected in accordance with the sampling requirements identified in the Ecology letter dated April 20, 2010. The wells are located on Lot 1, the All New Glass property. Locations of the monitoring wells are shown in Figure 2.

GROUNDWATER SAMPLING ACTIVITIES

Shannon & Wilson personnel conducted groundwater sampling activities on August 22, 2018, at the Subject Property. Two of the wells, MW-4 and MW-5, are located inside the All New Glass warehouse. Prior to the start of sampling activities, the wells were observed for the presence of a floating free-product layer. No free-product layer was observed at that time or during the sampling event. The depth to groundwater and total depth for each well was then measured. At the time the measurements were taken, the depth to groundwater in the three wells ranged from 8.6 feet below ground surface (bgs) to 12.6 feet bgs and/or below the floor of the warehouse. Monitoring well MW-2 is located adjacent to the existing warehouse building. The groundwater measurements are presented in Table 1.

A peristaltic pump with disposable tubing was used to purge each monitoring well to remove standing water so that a representative sample could be collected. Purging was completed when field parameters measured during the purge had stabilized. Field parameters included pH, specific conductivity, salinity, temperature, total dissolved solids, turbidity, dissolved oxygen, and oxidation reduction potential. Field parameters were measured before and during purging. Copies of the water sampling logs are enclosed with this letter. Once the parameters had stabilized, a groundwater sample was collected using the pump and disposable tubing. Purged water from the well was drummed on the Subject Property and held for proper disposal based on the analytical results.

Groundwater samples collected from the three wells were analyzed for:

- Diesel- and oil-range hydrocarbons using Northwest Total Petroleum Hydrocarbons (NWTPH) as Diesel-Extended Method (NWTPH-Dx);
- Gasoline-range (Gx) hydrocarbons with benzene, toluene, ethylbenzene, and xylenes (BTEX) using the NWTPH as Gasoline with BTEX Method (NWTPH-Gx/BTEX);
- Polychlorinated biphenyls (PCBs) using the U.S. Environmental Protection Agency (EPA) Method (8082);
- Polycyclic aromatic hydrocarbons (PAHs) and naphthalene using EPA Method (8270D/SIM); and
- Lead and cadmium (total and dissolved) using EPA Method (6010B).

The list of analytes was selected to provide information on all potential contaminants of concern that were identified in site soils during a site cleanup action that was completed in 2001/2002.

LABORATORY RESULTS

The groundwater samples collected from the three wells did not contain detectable concentrations of diesel-, heavy oil- or gasoline-range hydrocarbons, including BTEX, PCBs, PAHs, or total and/or dissolved cadmium. Total lead was detected in the sample collected from MW-2 at a concentration of 2.3 micrograms per liter (ug/L), which is below Model Toxics Control Act (MTCA) Method A unrestricted use cleanup criterion of 15 ug/L. The results for this sampling event are presented in Table 2 and previous sampling completed between 2008 and 2018 are presented in Table 3. A copy of the analytical results is enclosed with this letter.

DISPOSAL OF INVESTIGATION-DERIVED WASTE

Purge and rinse water generated during the field activities, was placed into a 55-gallon drum and temporarily stored on site pending analytical analysis. Upon receipt of the analytical data, the water was disposed following State of Washington guidelines.

DISCUSSION

No potential contaminants of concern were detected in the samples collected during this event with the exception of total lead in one well (MW-2). The detected concentration for the total lead was not above its MTCA Method A cleanup criteria and the associated dissolved lead sample from that same well was non-detect. Based on the information contained in this letter, it is our opinion that the site remediation and existing controls continue to be protective of human health and the environment. The analytical data demonstrates that groundwater quality at the subject property has not been impacted since remediation was completed in 2002. Since 2009 analytical results indicate that no contaminants of concern were detected in the Subject Property groundwater samples at concentrations that exceeded MTCA Method A cleanup levels.

Based on the available information, we will make a request of Ecology to discontinue groundwater sampling and to abandon the wells located on the Subject Property.

LIMITATIONS

Shannon & Wilson has prepared this letter in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in the area. Shannon & Wilson is not responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the letter was prepared. We also note that the facts and conditions referenced in this letter may change over time, and that the conclusions and recommendations set forth here are applicable to the facts and conditions as described only at the time of this letter. We believe that the conclusions stated here are factual, but no guarantee is made or implied.

This letter was prepared for the exclusive use of All New Glass and your respective representatives and in no way guarantees that any agency or its staff will reach the same conclusions as Shannon & Wilson. Shannon & Wilson. has prepared the enclosed, "Important

Mr. Troy Thomas
All New Glass
October 2, 2018
Page 4 of 4

SHANNON & WILSON, INC.

Information About Your Geotechnical/Environmental Report," to help you and others in understanding our reports.

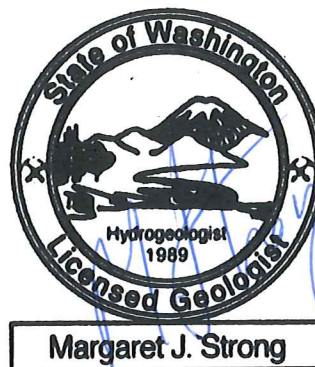
We appreciate the opportunity to work with you on this project and look forward to working with you in the future. Should you have any questions regarding the contents of this letter, please contact us at (206) 695-6918.

Sincerely,

SHANNON & WILSON, INC.



David Randall
Senior Environmental Scientist



Meg Strong, LG, LHG
Vice President

DJR:MJS/djr

Enc: Water Sampling Logs
Analytical Report
Table 1 – 2018 Groundwater Elevations in Monitoring Wells, 2008-2018
Table 2 – 2018 Groundwater Analytical Results, August 2018
Table 3 – Historical Groundwater Analytical Results, 2008-2012
Figure 1 – Vicinity Map
Figure 2 – Monitoring Well Locations
Important Information About Your Geotechnical/Environmental Report

WATER SAMPLING LOG

JOB NO. 101324
PAGE 1 OF 1

OWNER / LOCATION: Marvel Management / 2820 S. St. NW, Atlanta, GA
WELL NO: MW-5 SAMPLE NO: MW-5-GW-08222018 ECOLOGY TAG NO: BBA740
WEATHER: Clear/smoky 70-80s
WELL SITE CONDITIONS / MP DEFINITION: Not PVC rim
(MP is typically the north PVC rim)

DATE: 8/22/2018
DUPLICATE NO: N/A
MS / MSD? Yes ☐ No ☒

SAMPLING DATA

TIME STARTED: 1030 LNAPL THICKNESS: None ft. Sample ☐
PID HEAD SPACE: N/A ppm DNAPL THICKNESS: — ft. Sample ☐
MP DISTANCE ABOVE / BELOW GROUND SURFACE: 0.2 ft. below floor surface
TOTAL DEPTH OF WELL BELOW MP: 16.81 ft.
DTW BELOW MP: 12.6 ft.
WATER COLUMN IN WELL: 4.21 ft.
CASING DIAMETER: 2" in.
GALLONS PER FOOT: 0.16
GALLONS IN WELL: 0.67
TIME PURGING STARTED: 1107

SAMPLE CONTAINERS

Number	Size	Type	Pres.
<u>3</u>	<u>40ml</u>	<u>VOA</u>	
<u>3</u>	<u>2L</u>	<u>Amber</u>	
<u>2</u>	<u>500ml</u>	<u>Amber</u>	
<u>2</u>	<u>poly</u>	<u>poly</u>	

FIELD PARAMETERS

GALLONS REMOVED	TEMP. (C°)	-EhORP (mV)	pH	COND. (µmhos/cm)	D.O. (mg/L)	TURBIDITY (NTU)	SALINITY (%)	TDS (g/L)	COLOR	TIME
Initial	20.2	217.9	6.57	293	2.23	3.21	—	—	Yellow	1110
1	19.8	54.2	6.06	565	0.69	42.2	—	—	clear	1116
1.25	19.7	14	6.19	605	0.64	6.40	—	—	clear	1121
1.5	20.1	11.9	6.31	591	0.44	4.69	—	—	clear	1128
1.7	20.1	12.8	6.34	550	0.39	1.42	—	—	clear	1134
2.1	20.1	12.4	6.34	533.1	0.64	0.02	—	—	clear	1139
2.3	20.1	11.9	6.35	530.6	0.45	0.02	—	—	clear	1144
2.5	20.2	15.4	6.36	529.7	0.61	18.3	—	—	clear	1149
2.7	20.2	15	6.35	523.7	0.61	0.02	—	—	clear	1154
After Sampling	20.2	15.2	6.35	529.7	0.81	0.02	—	—	clear	1159

EVACUATION METHOD: Peristaltic pump
PUMP INTAKE DEPTH (if applicable): 14 feet below MP
PURGE WATER DISPOSITION (e.g., drum #): drum
WATER QUALITY (e.g., sheen, odor):
WATER QUALITY METER(S) USED; CALIBRATION DATE / TIME: YSI 13A101825, turbidity meter 17061393
SAMPLING METHOD: low flow SAMPLE TIME: 1205
SAMPLING PERSONNEL: RBP DUPLICATE "TIME": —
REMARKS (e.g., recovery rate):

TIME COMPLETED: 1300

WELL CASING VOLUMES

Gal / ft 1-1/4" = 0.077 2" = 0.16 3" = 0.37 4" = 0.65
1-1/2" = 0.10 2-1/2" = 0.24 3-1/2" = 0.50 6" = 1.46

WATER SAMPLING LOG

JOB NO. 101324-001
PAGE 1 OF 1

OWNER / LOCATION: Marvel Management / 2330 St. NW, Auburn, WA
WELL NO: MW-4 SAMPLE NO: MW-4-GW-0822208 ECOLOGY TAG NO: BBA739
WEATHER: Smoky 70s-80s
WELL SITE CONDITIONS / MP DEFINITION: MP is north PVC rim
(MP is typically the north PVC rim)

DATE: 8/22/2018
DUPLICATE NO: —
MS / MSD? Yes ☐ No ☒

SAMPLING DATA

TIME STARTED: 1305 LNAPL THICKNESS: None ft. Sample ☐
PID HEAD SPACE: — ppm DNAPL THICKNESS: — ft. Sample ☐
MP DISTANCE ABOVE / BELOW GROUND SURFACE: 0.3' below floor surface
TOTAL DEPTH OF WELL BELOW MP: 18.19 ft.
DTW BELOW MP: 11.9 ft.
WATER COLUMN IN WELL: 6.29 ft.
CASING DIAMETER: 2" in.
GALLONS PER FOOT: 0.16
GALLONS IN WELL: 1
TIME PURGING STARTED: 1311

SAMPLE CONTAINERS			
Number	Size	Type	Pres.
3	40ml	VOD	
2	1L	Amber	
2	500ml	Amber	
		Poly	

FIELD PARAMETERS

GALLONS REMOVED	TEMP. (C°)	Eh (mV)	pH	COND. (µmhos / cm)	D.O. (mg / L)	TURBIDITY (NTU)	SALINITY (%)	TDS (g / L)	COLOR	TIME
Initial	16.2	-38.8	6.27	479	0.81	0.02	—	—	Clear	1312
0.4	16.7	-46.8	6.24	476.9	0.27	0.02	—	—	Clear	1317
0.7	17.1	-54.7	6.34	481.4	0.27	0.02	—	—	Clear	1322
1.0	16.8	-56.9	6.34	481.5	0.29	0.02	—	—	Clear	1327
1.1	17.1	-60.2	6.37	481.4	0.25	0.02	—	—	Clear	1332
1.25	16.9	-62.1	6.37	481.7	0.22	0.02	—	—	Clear	1337
1.5	17.2	-61.1	6.37	481.8	0.47	0.02	—	—	Clear	1342
After Sampling										

EVACUATION METHOD: Peristaltic pump
PUMP INTAKE DEPTH (if applicable): 14' below MP
PURGE WATER DISPOSITION (e.g., drum #): drum
WATER QUALITY (e.g., sheen, odor): Clear / no odor
WATER QUALITY METER(S) USED; CALIBRATION DATE / TIME: YSI 13A101825, turbidity meter 17061393
SAMPLING METHOD: low flow SAMPLE TIME: 1350
SAMPLING PERSONNEL: RBP DUPLICATE "TIME": —
REMARKS (e.g., recovery rate): —

TIME COMPLETED: 1430

WELL CASING VOLUMES

Gal / ft 1-1/4" = 0.077 2" = 0.16 3" = 0.37 4" = 0.65
1-1/2" = 0.10 2-1/2" = 0.24 3-1/2" = 0.50 6" = 1.46

WATER SAMPLING LOG

JOB NO. 101824-001
PAGE 1 OF 2

OWNER / LOCATION: Marvel Management / 233 D. Street NW, Auburn, WA DATE: 8/22/2012
WELL NO: MW-2 SAMPLE NO: MW-2-GW-0522018 ECOLOGY TAG NO: AG5687 DUPLICATE NO: —
WEATHER: Smokey 80s MS / MSD? Yes ☐ No ☒
WELL SITE CONDITIONS / MP DEFINITION: MP is north PVC rim
(MP is typically the north PVC rim)

SAMPLING DATA

TIME STARTED: 1445 LNAPL THICKNESS: None ft. Sample ☐
PID HEAD SPACE: — ppm DNAPL THICKNESS: — ft. Sample ☐
MP DISTANCE ABOVE / BELOW GROUND SURFACE: 0.4' below ground surface
TOTAL DEPTH OF WELL BELOW MP: ~12' ft.
DTW BELOW MP: 8.6 ft.
WATER COLUMN IN WELL: 3.4 ft.
CASING DIAMETER: 2" in.
GALLONS PER FOOT: 0.16
GALLONS IN WELL: 0.544
TIME PURGING STARTED: 1445

SAMPLE CONTAINERS			
Number	Size	Type	Pres.

FIELD PARAMETERS

GALLONS REMOVED	TEMP. (C°)	EH (mV)	pH	COND. (µmhos / cm)	D.O. (mg / L)	TURBIDITY (NTU)	SALINITY (%)	TDS (g / L)	COLOR	TIME
0.2 Initial	20.4	-68.5	6.51	906	0.46	12	—	—	clear	1503
0.5	20.7	-61.7	6.52	912	0.33	5.84	—	—	clear	1509
0.6	20.6	-79.7	6.56	939	0.30	3.6	—	—	clear	1514
0.8	20.1	-88.7	6.54	940	0.32	50.9	—	—	clear	1519
1.0	20.4	-90.7	6.54	932	0.38	39.7	—	—	clear	1524
1.15	20.4	-87.3	6.53	919	0.41	17.6	—	—	clear	1529
1.25	20.6	-84	6.54	906	0.43	7.77	—	—	clear	1534
1.4	20.4	-83.3	6.54	900	0.49	2.96	—	—	clear	1539
1.8	20.4	-83.1	6.55	899	0.54	1.17	—	—	clear	1550
After Sampling 2.0	20.3	-81.0	6.55	896	0.59	0.05	—	—	clear	1555

EVACUATION METHOD: Peristaltic pump
PUMP INTAKE DEPTH (if applicable): 10' below MP
PURGE WATER DISPOSITION (e.g., drum #): drum
WATER QUALITY (e.g., sheen, odor): clear / no odor
WATER QUALITY METER(S) USED; CALIBRATION DATE / TIME: YSE 13A101825, turbidity meter 17061393
SAMPLING METHOD: low flow SAMPLE TIME: 1615
SAMPLING PERSONNEL: RBP DUPLICATE "TIME": —
REMARKS (e.g., recovery rate):

WELL CASING VOLUMES

Gal / ft 1-1/4" = 0.077 2" = 0.16 3" = 0.37 4" = 0.65
1-1/2" = 0.10 2-1/2" = 0.24 3-1/2" = 0.50 6" = 1.46

TIME COMPLETED: 1700

OWNER / LOCATION: _____ DATE: _____

WELL NO: _____ SAMPLE NO: _____ ECOLOGY TAG NO: _____ DUPLICATE NO: _____

WEATHER: _____ MS / MSD? Yes ☐ No ☐

WELL SITE CONDITIONS / MP DEFINITION: _____
(MP is typically the north PVC rim)

SAMPLING DATA

[illegible]

FIELD PARAMETERS

[illegible]

EVACUATION METHOD: _____

PUMP INTAKE DEPTH (if applicable): _____

PURGE WATER DISPOSITION (e.g., drum #): _____

WATER QUALITY (e.g., sheen, odor): _____

WATER QUALITY METER(S) USED; CALIBRATION DATE / TIME: _____

SAMPLING METHOD: _____ SAMPLE TIME: _____

SAMPLING PERSONNEL: _____ DUPLICATE "TIME": _____

REMARKS (e.g., recovery rate): _____

TIME COMPLETED:

WELL CASING VOLUMES

Gal / ft 1-1/4" = 0.077 2" = 0.16 3" = 0.37 4" = 0.65
1-1/2" = 0.10 2-1/2" = 0.24 3-1/2" = 0.50 6" = 1.46



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 31, 2018

David Randall
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, WA 98103

Re: Analytical Data for Project 101324-001
Laboratory Reference No. 1808-257

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 23, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal flourish extending to the right.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 31, 2018
Samples Submitted: August 23, 2018
Laboratory Reference: 1808-257
Project: 101324-001

Case Narrative

Samples were collected on August 22, 2018 and received by the laboratory on August 23, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-5-GW-08222018						
Laboratory ID:	08-257-01					
Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Toluene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Ethyl Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
m,p-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
o-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Gasoline	ND	100	NWTPH-Gx	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	102	66-117				

Client ID: MW-4-GW-08222018						
Laboratory ID:	08-257-02					
Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Toluene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Ethyl Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
m,p-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
o-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Gasoline	ND	100	NWTPH-Gx	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	66-117				

Client ID: MW-2-GW-08222018						
Laboratory ID:	08-257-03					
Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Toluene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Ethyl Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
m,p-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
o-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Gasoline	ND	100	NWTPH-Gx	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	111	66-117				



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827W2					
Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Toluene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Ethyl Benzene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
m,p-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
o-Xylene	ND	1.0	EPA 8021B	8-27-18	8-27-18	
Gasoline	ND	100	NWTPH-Gx	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	111	66-117				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	08-276-06							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	NA	30
Toluene	ND	ND	NA	NA	NA	NA	NA	30
Ethyl Benzene	ND	ND	NA	NA	NA	NA	NA	30
m,p-Xylene	ND	ND	NA	NA	NA	NA	NA	30
o-Xylene	ND	ND	NA	NA	NA	NA	NA	30
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene			113	114	66-117			

MATRIX SPIKES

Laboratory ID:	08-276-03									
	MS	MSD	MS	MSD		MS	MSD			
Benzene	53.6	51.8	50.0	50.0	ND	107	104	82-122	3	11
Toluene	52.2	50.4	50.0	50.0	ND	104	101	83-123	4	12
Ethyl Benzene	52.3	50.6	50.0	50.0	ND	105	101	83-123	3	12
m,p-Xylene	51.7	50.2	50.0	50.0	ND	103	100	83-123	3	12
o-Xylene	52.3	51.0	50.0	50.0	ND	105	102	83-123	3	11
Surrogate:										
Fluorobenzene			103	104	66-117					



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

**DIESEL AND HEAVY OIL RANGE ORGANICS
 NWTPH-Dx**

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-5-GW-08222018					
Laboratory ID:	08-257-01					
Diesel Range Organics	ND	0.27	NWTPH-Dx	8-24-18	8-24-18	
Lube Oil Range Organics	ND	0.44	NWTPH-Dx	8-24-18	8-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	101	50-150				

Client ID:	MW-4-GW-08222018					
Laboratory ID:	08-257-02					
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-24-18	8-24-18	
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-24-18	8-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	95	50-150				

Client ID:	MW-2-GW-08222018					
Laboratory ID:	08-257-03					
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-24-18	8-24-18	
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-24-18	8-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	88	50-150				



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

**DIESEL AND HEAVY OIL RANGE ORGANICS
 NWTPH-Dx
 QUALITY CONTROL**

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0824W1					
Diesel Range Organics	ND	0.25	NWTPH-Dx	8-24-18	8-24-18	
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	8-24-18	8-24-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	90	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	08-256-02							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	
<i>Surrogate:</i>								
<i>o-Terphenyl</i>				85	93	50-150		



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

PCBs EPA 8082A

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-5-GW-08222018						
Laboratory ID: 08-257-01						
Aroclor 1016	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1221	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1232	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1242	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1248	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1254	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Aroclor 1260	ND	0.049	EPA 8082A	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
DCB	91	44-144				

Client ID: MW-4-GW-08222018						
Laboratory ID: 08-257-02						
Aroclor 1016	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1221	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1232	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1242	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1248	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1254	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Aroclor 1260	ND	0.048	EPA 8082A	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
DCB	98	44-144				

Client ID: MW-2-GW-08222018						
Laboratory ID: 08-257-03						
Aroclor 1016	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1221	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1232	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1242	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1248	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1254	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Aroclor 1260	ND	0.047	EPA 8082A	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
DCB	89	44-144				



Date of Report: August 31, 2018
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 Project: 101324-001

**PCBs EPA 8082A
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827W1					
Aroclor 1016	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1221	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1232	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1242	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1248	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1254	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Aroclor 1260	ND	0.050	EPA 8082A	8-27-18	8-27-18	
Surrogate:	Percent Recovery	Control Limits				
DCB	94	44-144				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0827W1									
	SB	SBD	SB	SBD		SB	SBD			
Aroclor 1260	0.457	0.452	0.500	0.500	N/A	91	90	71-131	1	12
Surrogate:										
DCB						94	93	44-144		



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TOTAL METALS
EPA 200.8

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-5-GW-08222018						
Laboratory ID: 08-257-01						
Cadmium	ND	4.4	EPA 200.8	8-24-18	8-24-18	
Lead	ND	1.1	EPA 200.8	8-24-18	8-24-18	

Client ID: MW-4-GW-08222018						
Laboratory ID: 08-257-02						
Cadmium	ND	4.4	EPA 200.8	8-24-18	8-24-18	
Lead	ND	1.1	EPA 200.8	8-24-18	8-24-18	

Client ID: MW-2-GW-08222018						
Laboratory ID: 08-257-03						
Cadmium	ND	4.4	EPA 200.8	8-24-18	8-24-18	
Lead	2.3	1.1	EPA 200.8	8-24-18	8-24-18	



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

**TOTAL METALS
 EPA 200.8
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0824WM1					
Cadmium	ND	4.4	EPA 200.8	8-24-18	8-24-18	
Lead	ND	1.1	EPA 200.8	8-24-18	8-24-18	

Analyte	Result		Spike Level		Source	Percent	Recovery	RPD		RPD	Flags
					Result	Recovery	Limits			Limit	
DUPLICATE											
Laboratory ID:	08-074-02										
	ORIG	DUP									
Cadmium	ND	ND	NA	NA		NA	NA	NA	20		
Lead	ND	ND	NA	NA		NA	NA	NA	20		

MATRIX SPIKES

Laboratory ID:	08-074-02									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	232	236	222	222	ND	104	106	75-125	2	20
Lead	228	231	222	222	ND	103	104	75-125	1	20



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 Project: 101324-001

DISSOLVED METALS
EPA 200.8

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-5-GW-08222018						
Laboratory ID: 08-257-01						
Cadmium	ND	4.0	EPA 200.8		8-24-18	
Lead	ND	1.0	EPA 200.8		8-24-18	

Client ID: MW-4-GW-08222018						
Laboratory ID: 08-257-02						
Cadmium	ND	4.0	EPA 200.8		8-24-18	
Lead	ND	1.0	EPA 200.8		8-24-18	

Client ID: MW-2-GW-08222018						
Laboratory ID: 08-257-03						
Cadmium	ND	4.0	EPA 200.8		8-24-18	
Lead	ND	1.0	EPA 200.8		8-24-18	



Date of Report: August 31, 2018
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**DISSOLVED METALS
 EPA 200.8
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0824D1					
Cadmium	ND	4.0	EPA 200.8		8-24-18	
Lead	ND	1.0	EPA 200.8		8-24-18	

Analyte	Result		Spike Level		Source	Percent	Recovery	RPD		RPD	Flags
					Result	Recovery	Limits			Limit	
DUPLICATE											
Laboratory ID:	08-257-03										
	ORIG	DUP									
Cadmium	ND	ND	NA	NA		NA	NA	NA	NA	20	
Lead	ND	ND	NA	NA		NA	NA	NA	NA	20	

MATRIX SPIKES

Laboratory ID:	08-257-03										
	MS	MSD	MS	MSD		MS	MSD				
Cadmium	198	193	200	200	ND	99	96	75-125	3	20	
Lead	190	183	200	200	ND	95	92	75-125	3	20	



Date of Report: August 31, 2018
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 Project: 101324-001

cPAHs + NAPHTHALENE
EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-5-GW-08222018						
Laboratory ID: 08-257-01						
Naphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
2-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
1-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Chrysene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[b]fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo(j,k)fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Indeno(1,2,3-c,d)pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Dibenz[a,h]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	63	21 - 110				
Pyrene-d10	79	19 - 111				
Terphenyl-d14	78	32 - 137				



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
 Laboratory Reference: 1808-257
 Project: 101324-001

cPAHs + NAPHTHALENE
EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: MW-4-GW-08222018						
Laboratory ID: 08-257-02						
Naphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
2-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
1-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Chrysene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[b]fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo(j,k)fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Indeno(1,2,3-c,d)pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Dibenz[a,h]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	54	21 - 110				
Pyrene-d10	62	19 - 111				
Terphenyl-d14	61	32 - 137				



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 Samples Submitted: August 23, 2018
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 Project: 101324-001

cPAHs + NAPHTHALENE
EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-2-GW-08222018					
Laboratory ID:	08-257-03					
Naphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
2-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
1-Methylnaphthalene	ND	0.11	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Chrysene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[b]fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo(j,k)fluoranthene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Indeno(1,2,3-c,d)pyrene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
Dibenz[a,h]anthracene	ND	0.011	EPA 8270D/SIM	8-25-18	8-27-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	73	21 - 110				
Pyrene-d10	85	19 - 111				
Terphenyl-d14	84	32 - 137				



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
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 Project: 101324-001

cPAHs + NAPHTHALENE
EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water

Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB0825W1						
Naphthalene	ND	0.10	EPA 8270D/SIM	8-25-18	8-27-18	
2-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	8-25-18	8-27-18	
1-Methylnaphthalene	ND	0.10	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]anthracene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Chrysene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[b]fluoranthene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo(j,k)fluoranthene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Benzo[a]pyrene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Indeno(1,2,3-c,d)pyrene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
Dibenz[a,h]anthracene	ND	0.010	EPA 8270D/SIM	8-25-18	8-27-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	78	21 - 110				
Pyrene-d10	94	19 - 111				
Terphenyl-d14	93	32 - 137				



Date of Report: August 31, 2018
 Samples Submitted: August 23, 2018
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 Project: 101324-001

cPAHs + NAPHTHALENE
EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water

Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0825W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	0.408	0.412	0.500	0.500	82	82	28 - 109	1	38	
Benzo[a]anthracene	0.444	0.465	0.500	0.500	89	93	57 - 127	5	15	
Chrysene	0.423	0.440	0.500	0.500	85	88	51 - 120	4	15	
Benzo[b]fluoranthene	0.440	0.467	0.500	0.500	88	93	54 - 124	6	17	
Benzo(j,k)fluoranthene	0.430	0.443	0.500	0.500	86	89	50 - 127	3	18	
Benzo[a]pyrene	0.415	0.442	0.500	0.500	83	88	50 - 120	6	16	
Indeno(1,2,3-c,d)pyrene	0.429	0.451	0.500	0.500	86	90	46 - 132	5	20	
Dibenz[a,h]anthracene	0.435	0.452	0.500	0.500	87	90	49 - 129	4	18	
Surrogate:										
2-Fluorobiphenyl					74	80	21 - 110			
Pyrene-d10					82	85	19 - 111			
Terphenyl-d14					80	84	32 - 137			





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





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Chain of Custody

Page 1 of 1

Company: SHANNON & WILSON INC. Project Number: 101324-001 Project Name: 233 D STREET NW Project Manager: DAVID RANDOLPH Sampled by: RBP						Turnaround Request (in working days) (Check One) <input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input checked="" type="checkbox"/> Standard (7 Days) (TPH analysis 5 Days) <input type="checkbox"/> _____ (other)							Laboratory Number: 08-257																	
						Date Sampled			Time Sampled			Matrix			Number of Containers															
Lab ID						Sample Identification																								
1						MW-5-GW-08222018			8/24/18			1205			GW			10			NWTPH-HCID									
2						MW-4-GW-08222018			8/24/18			1350			GW			10			NWTPH-Gx/BTEX									
3						MW-2-GW-08222018			8/24/18			1615			GW			10			NWTPH-Gx									
4						T-1 (trip blank)			8/24/18			-			-			1			NWTPH-Dx (<input type="checkbox"/> Acid / SG Clean-up)									
No FURTHER SAMPLES																					Volatiles 8260C									
																					Halogenated Volatiles 8260C									
																					EDB EPA 8011 (Waters Only)									
																					Semivolatiles 8270D/SIM (with low-level PAHs)									
																					PAHs 8270D/SIM (low-level)									
																					PCBs 8082A									
																					Organochlorine Pesticides 8081B									
																					Organophosphorus Pesticides 8270D/SIM									
																					Chlorinated Acid Herbicides 8151A									
																								Total RCRA Metals						
																					Total MTCA Metals									
																					TCLP Metals									
																					HEM (oil and grease) 1664A									
																					LEAD & CADMIUM (TOTAL)									
																					LEAD & CADMIUM (DISSOLVED)									
																					CPAHs + Naphthalene									
																					Hold									
																					% Moisture									
Relinquished						Signature			Company			Date			Time			Comments/Special Instructions												
Received						Shannon & Wilson Inc.			8/23/18			0730			Dissolved metals have been field filtered															
Relinquished						AZARON			8/23/18			10:00																		
Received						AZARON			8/23/18			12:55																		
Relinquished						OSI			8/23/18			13:25																		
Received						OSI			8/23/18			13:25																		
Relinquished																														
Received																														
Reviewed/Date																		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>												
Reviewed/Date																		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input checked="" type="checkbox"/>												

TABLE 1
GROUNDWATER ELEVATIONS IN MONITORING WELLS
2008 -2018

Well Number	Date	TOC Elevation	DTW	Groundwater Elevation
MW-1	11/26/2008	72.16	5.62	66.54
(AGJ686)	1/9/2009	72.16	4.93	67.23
	4/15/2009	72.16	4.31	67.85
	7/28/2009	72.16	6.62	65.54
	10/9/2009	72.16	7.57	64.59
	5/5/2011	72.16	3.51	68.65
	8/10/2011	72.16	5.21	66.95
	11/17/2011	72.16	5.65	66.51
	2/18/2012	72.16	2.78	69.38
MW-2	11/26/2008	72.73	4	68.73
(AGJ687)	1/9/2009	72.73	3.2	69.53
	4/15/2009	72.73	3.11	69.62
	7/28/2009	72.73	7.95	64.78
	10/9/2009	72.73	8.36	64.37
	5/5/2011	72.73	3.16	69.57
	8/10/2011	72.73	4.85	67.88
	11/17/2011	72.73	5.75	66.98
	2/18/2012	72.73	3.12	69.61
	8/22/20108	72.73	8.6	64.13
MW-4	1/9/2009	75.98	8.10	67.88
(BBA739)	4/15/2009	75.98	8.91	67.07
	7/28/2009	75.98	11.32	64.66
	10/9/2009	75.98	11.82	64.16
	5/5/2011	75.98	8.66	67.32
	8/10/2011	75.98	10.77	65.21
	11/17/2011	75.98	10.61	65.37
	2/18/2012	75.98	8.76	67.22
	8/22/20108	75.98	11.90	64.08
MW-5	1/9/2009	76.32	6.42	69.90
(BBA740)	4/15/2009	76.32	7.34	68.98
	7/28/2009	76.32	11.74	64.58
	10/9/2009	76.32	12.21	64.11
	5/5/2011	76.32	7.56	68.76
	8/10/2011	76.32	10.62	65.70
	11/17/2011	76.32	10.48	65.84
	2/28/2012	76.32	7.51	68.81
	8/22/20108	76.32	12.6	63.72

Notes:

Elevations are in feet.

DTW = depth to water

TOC = top of well casing

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
August 2018

Well Number	Sample Number	Sample Date	Petroleum (mg/L)		Gasoline (µg/L)	BTEX (µg/L)				Total Metals (µg/L)		Dissolved Metals (µg/L)		PCBs (µg/L)	Total cPAHs (µg/L)	Napthalene (µg/L)
			Oil	Diesel		Benzene	Toluene	Ethylbenzene	Xylenes	Lead	Cadmium	Lead	Cadmium			
GROUNDWATER RESULTS																
MW-2	MW-2-GW-08222018	8/22/2018	<0.41	<0.26	<100	<1.0	<1.0	<1.0	<1.0	2.3	<4.4	<1.0	<4.0	<0.047	0.01	<0.11
MW-4	MW-4-GW-08222018	8/22/2018	<0.41	<0.26	<100	<1.0	<1.0	<1.0	<1.0	<1.1	<4.4	<1.0	<4.0	<0.048	0.01	<0.11
MW-5	MW-5-GW-08222018	8/22/2018	<0.44	<0.27	<100	<1.0	<1.0	<1.0	<1.0	<1.1	<4.4	<1.0	<4.0	<0.049	0.01	<0.11
MTCA Method A			500	500	1,000	5	1,000	700	1,000	15	5	15	5	0.1	0.1 ⁽¹⁾	160

Notes:

⁽¹⁾ Sum of the toxic equivalency factor (TEF) for each carcinogenic polycyclic aromatic hydrocarbon. Calculated as the detected concentration times the TEF, or as the method detection limit (if analyte is not detected) times the TEF.

Bold text indicates a detected analyte.

< = less than

BTEX = benzene, toluene, ethylbenzene, and xylenes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

µg/L = micrograms per liter

mg/L = milligrams per liter

PCBs = polychlorinated biphenyls

TABLE 3
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
2008 - 2012

Well Number	Sample Number	Sample Date	Petroleum (mg/L)		Gasoline (µg/L)	BTEX (µg/L)				Total Metals (µg/L)		Dissolved Metals (µg/L)		PCBs (µg/L)	Total cPAHs (µg/L)	Napthalene (µg/L)	VOCs ^ (µg/L)
			Oil	Diesel		Benzene	Toluene	Ethylbenzene	Xylenes	Lead	Cadmium	Lead	Cadmium				1,1,1-trichloroethane
GROUNDWATER RESULTS																	
MW-1 **	MW-1-GW-1	11/7/2008	0.59	<0.25	<400	<4.0	<4.0	<4.0	<4.0	--	--	33	<4.0	<0.048	0.01	<0.095	--
MW-1	MW-1-GW-112608	11/26/2008	<0.40	<0.25	--	--	--	--	--	--	--	<1.0	--	--	--	--	--
MW-1	MW-1-GW-2	4/15/2009	<0.38	<0.24	<400	<4.0	<4.0	<4.0	<4.0	--	--	20	<4.0	<0.47	0.01	<0.095	--
MW-1	MW-1-GW-3	7/28/2009	<0.46	<0.29	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.095	--
MW-1	MW-1-GW-4	10/9/2009	<0.40	<0.25	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.097	--
MW-1	MW-1-GW-1:11	5/5/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.047	0.01	<0.095	--
MW-1	MW-1-GW-2:11	8/10/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.0	<4.0	--	--	<0.048	0.01	<0.096	--
MW-1	MW-1-GW-3:11	11/17/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.048	0.01	<0.095	--
MW-1	MW-1-GW-4:12	2/28/2012	<0.41	<0.26	<100	<0.20	1.4	<0.20	<0.60	<1.0	<0.40	--	--	<0.048	0.01	<0.095	--
MW-4	MW-4-GW-1	1/9/2009	<0.40	<0.25	<100	<0.20	<1.0	<0.20	<0.20	--	--	<1.0	<4.0	<0.48	0.01	<0.095	<0.20
MW-4	MW-4-GW-2	4/15/2009	<0.38	<0.24	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.095	--
MW-4	MW-4-GW-3	7/28/2009	<0.46	<0.29	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.095	--
MW-4	MW-4-GW-4	10/9/2009	<0.40	<0.25	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.47	0.01	<0.095	--
MW-4	MW-4-GW-1:11	5/5/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.047	0.01	<0.095	--
MW-4	MW-4-GW-2:11	8/10/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.0	<4.0	--	--	<0.048	0.01	<0.096	--
MW-4	MW-4-GW-3:11	11/17/2011	<0.42	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.047	0.01	<0.095	--
MW-4	MW-4-GW-4:12	2/12/2012	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.0	<0.40	--	--	<0.048	0.01	<0.095	--
MW-5	MW-5-GW-1	1/9/2009	<0.40	<0.25	<100	<0.20	<1.0	<0.20	<0.20	--	--	<1.0	<4.0	<0.47	0.01	<0.095	0.27
MW-5	MW-5-GW-2	4/15/2009	<0.38	<0.24	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.096	--
MW-5	MW-5-GW-3	7/28/2009	<0.45	<0.28	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.48	0.01	<0.095	--
MW-5	MW-5-GW-4	10/9/2009	<0.40	<0.25	<100	<1.0	<1.0	<1.0	<1.0	--	--	<1.0	<4.0	<0.47	0.01	<0.095	--
MW-5	MW-5-GW-1:11	5/5/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.049	0.01	<0.095	--
MW-5	MW-5-GW-2:11	8/10/2011	<0.41	<0.26	<100	<0.20	<1.0	<0.20	<0.60	<1.0	<4.0	--	--	<0.048	0.04	<0.096	--
MW-5	MW-5-GW-3:11	11/17/2011	<0.41	<0.25	<100	<0.20	<1.0	<0.20	<0.60	<1.1	<4.4	--	--	<0.048	0.01	<0.095	--
MW-5	MW-5-GW-4:12	2/28/2012	<0.41	<0.26	<100	<0.20	1.1	<0.20	<0.60	<1.0	<0.40	--	--	<0.047	0.01	<0.095	--
MW-5	MW-5-GW-4:12A	2/28/2012	--	--	--	--	--	--	--	--	--	--	--	--	0.01	<0.095	--
MTCA Method A			500	500	1,000	5	1000	700	1,000	15	5	15	5	0.1	0.1 ⁽¹⁾	160	200

Notes:

⁽¹⁾ Sum of the toxic equivalency factor (TEF) for each carcinogenic polycyclic aromatic hydrocarbon. Calculated as the detected concentration times the TEF, or as the method detection limit (if analyte is not detected) times the TEF.

** Results rejected due to inadequate sample preparation.

Bold text indicates a detected analyte.

Shaded text indicates concentration exceeds state cleanup criterion.

^ = Only detected volatile organic compounds (VOCs) are summarized on this table.

-- = not tested

< = less than

BTEX = benzene, toluene, ethylbenzene, and xylenes

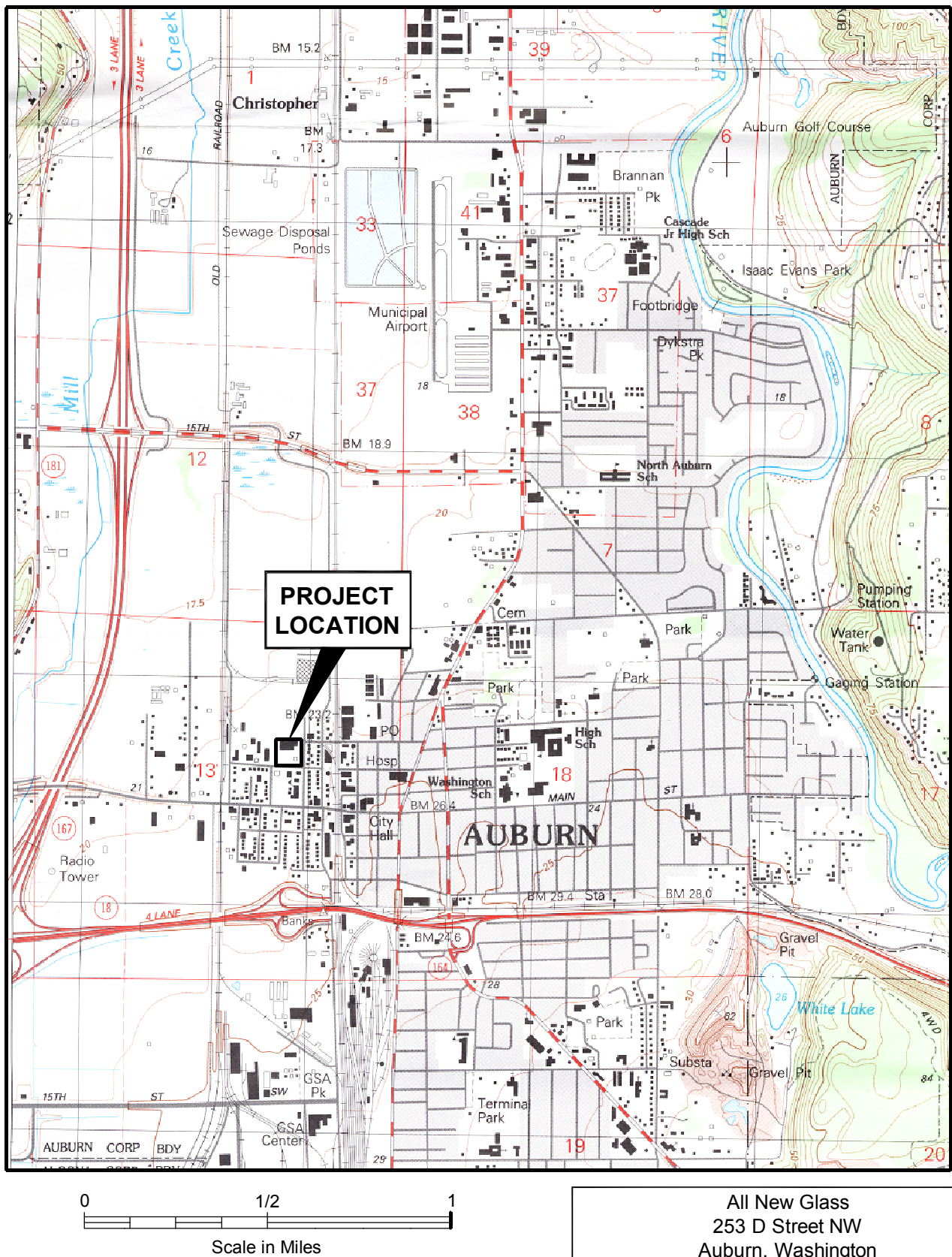
cPAHs = carcinogenic polycyclic aromatic hydrocarbons

mg/L = milligrams per liter

µg/L = micrograms per liter

MTCA = Washington Model Toxics Control Act

PCBs = polychlorinated biphenyls



NOTE

Map adapted from 1:25,000 USGS topographic map of Auburn, WA quadrangle, dated 1983.

All New Glass
253 D Street NW
Auburn, Washington

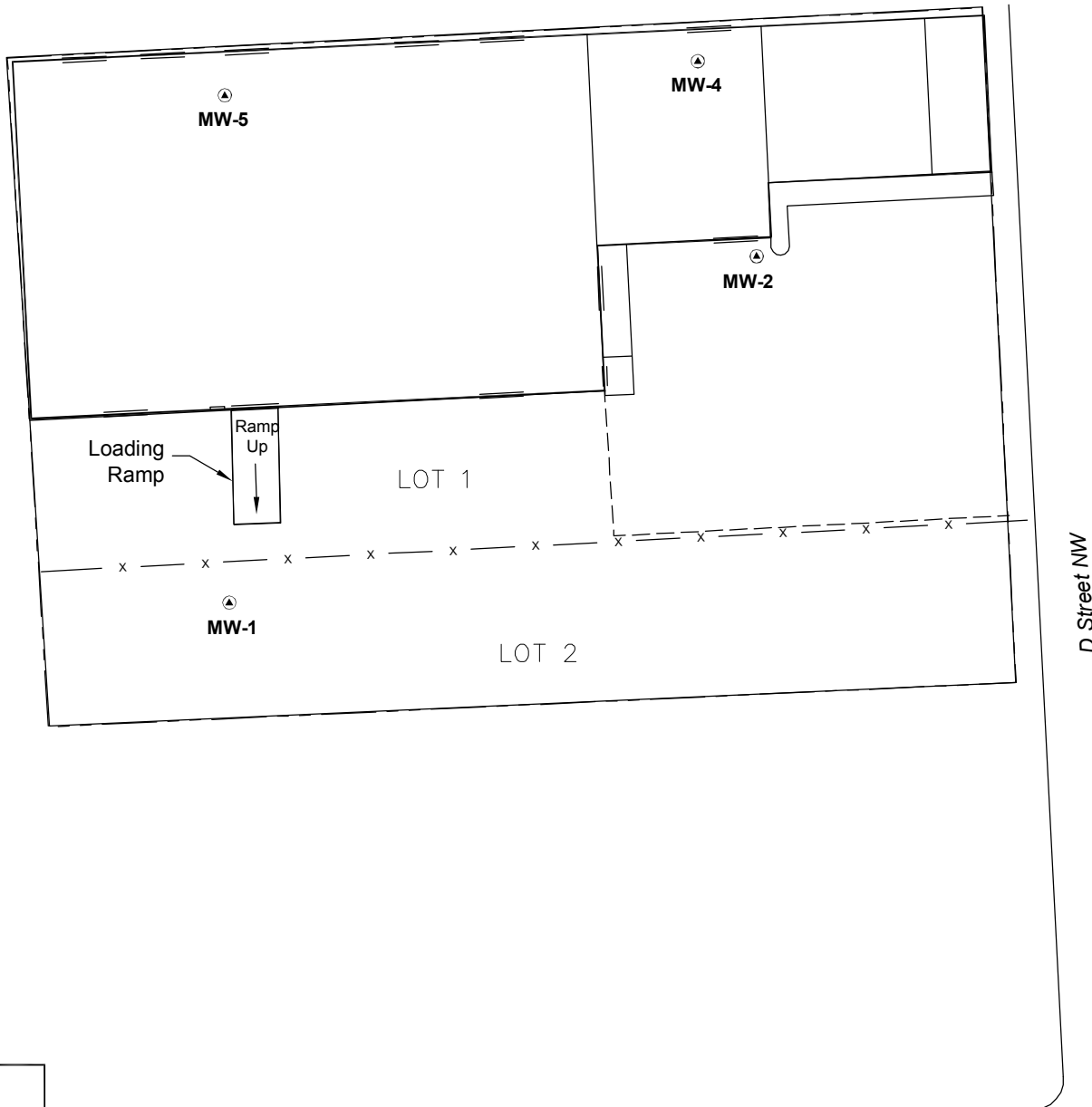
VICINITY MAP

September 2018

101324-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 1

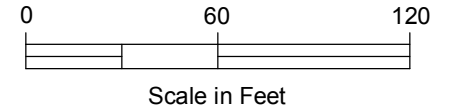


LEGEND

MW-1 ▲ Groundwater Monitoring Well

NOTE

Map adapted from "Excavation Detail" and "Site Plan and Sample Location Diagram" drawings prepared by Enco Environmental Corporation, both dated 7-15-2002.



All New Glass
253 D Street NW
Auburn, Washington

MONITORING WELL LOCATIONS

September 2018

101324-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 2



Date:	October 2, 2018
To:	Mr. Troy Thomas
	All New Glass

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland