Semiannual Monitoring Report
September 17, 2019 Sampling Event
Hamilton Street Bridge Site
Spokane, Washington

December 10, 2019

Prepared for

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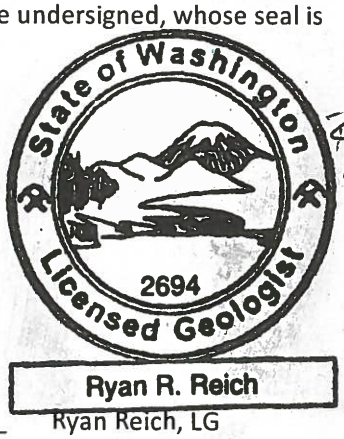

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LIST OF ABBREVIATIONS AND ACRONYMS

Avista ..... Avista Corporation
BNSF ..... BNSF Railway Company
CMP ..... compliance monitoring plan
cPAH ..... carcinogenic polycyclic aromatic hydrocarbon
Ecology ..... Washington State Department of Ecology
EPA ..... US Environmental Protection Agency
ft ..... feet, foot
LAI ..... Landau Associates, Inc.
mg/L ..... milligrams per liter
MS ..... matrix spike
MSD ..... matrix spike duplicate
PAH ..... polycyclic aromatic hydrocarbon
PVC ..... polyvinyl chloride
RL ..... reporting limit
SIM ..... selected ion monitoring
WAC ..... Washington Administrative Code
WAD ..... weak acid dissociable

1.0 INTRODUCTION

On behalf of the Avista Corporation (Avista) and BNSF Railway Company (BNSF), Landau Associates, Inc. (LAI) has prepared this semiannual report, summarizing the results of the third quarter 2019 compliance monitoring event conducted on September 17, 2019 at the Hamilton Street Bridge Site in Spokane, Washington (site; Figure 1). Compliance monitoring activities completed during this reporting period include depth-to-groundwater measurements, river stage measurement, groundwater sampling, and laboratory analysis of groundwater samples for polycyclic aromatic hydrocarbons (PAHs), carcinogenic PAHs (cPAHs), mercury, total and dissolved arsenic, weak acid dissociable (WAD) cyanide, and total sulfide.

2.0 MONITORING PROGRAM AND WELL LOCATIONS

In accordance with the compliance monitoring plan (CMP; LAI 2003) developed for the site, semiannual water-level monitoring and groundwater sampling are completed in the first and third quarters of the calendar year. Depth-to-groundwater is measured at shallow monitoring wells ATC7-20, MW02-20, MW04-20, MW08-20, and MW09-20 and deep monitoring wells MW07-90, MW08-90, and MW09-100. River stage level is recorded from a fixed, surveyed reference point on a pier of the James A. Keefe Bridge. Groundwater samples are collected from monitoring wells MW02-20, MW02-40, MW04-20, MW07-90, and ATC7-20 and analyzed for PAHs/cPAHs, mercury, total and dissolved arsenic, and cyanide. Monitoring well locations and other pertinent site features are shown on Figure 2.

In 2010 and 2015, the Washington State Department of Ecology (Ecology) completed 5-year periodic reviews of site conditions in accordance with Washington Administrative Code (WAC) 173-340-420(2) (Ecology 2010, 2015). In its 2010 review, Ecology recommended adding dissolved arsenic to the list of groundwater analytes (Section 2.2). In a comment letter dated December 1, 2010, Avista agreed that future monitoring events would include analysis for dissolved arsenic (Avista 2010).

In a letter to Avista, dated August 6, 2018, Ecology recommended collecting groundwater samples from monitoring wells MW02-20, MW02-40, MW04-20, MW07-90, and ATC7-20 for sulfide analysis (Ecology 2018). Analysis of sulfides has been conducted since the August 28, 2018 sampling event. Sulfides in groundwater have been suspected sources of matrix inference in previous cyanide analysis (Ecology 2018). Based on the results of analysis completed during 2019 monitoring, Ecology will evaluate the need for further sulfide screening.

2.1 Investigation Methods

On September 17, 2019, depth-to-groundwater was measured at select shallow and deep monitoring wells (ATC7-20, MW02-20, MW02-40, MW04-20, MW07-90, MW08-20, MW08-90, MW09-20, and MW09-100) in accordance with the CMP. At each monitoring well, an electronic water-level indicator was used to measure depth-to-water from the survey mark at the top of the polyvinyl chloride (PVC) casing to the nearest 0.01 foot (ft). Depth-to-water levels were recorded on a field data sheet, and were used with well elevation data to determine groundwater elevations in each well.

Semiannual groundwater samples were also collected from monitoring wells MW02-20, MW02-40, MW04-20, MW07-90, and ATC7-20, and submitted for chemical analysis, per the CMP. For quality assurance, a field duplicate sample (MW20-60) was collected from monitoring well MW07-90, and matrix spike/matrix spike duplicate (MS/MSD) samples were collected from monitoring well ATC7-20 and submitted for chemical analysis. Split samples were additionally collected from each monitoring well during this event for WAD cyanide analysis by an alternate Ecology-accredited analytical laboratory.

Prior to sampling, a clean purge pump or peristaltic pump and dedicated polyethylene tubing were used to purge each monitoring well of three casing volumes of water. Non-disposable monitoring and sampling equipment were decontaminated prior to use in each well. Each casing volume removed during purging was field tested for pH, temperature, conductivity, dissolved oxygen, oxidation reduction potential, and turbidity. Lead acetate test strips were also used to field screen purged groundwater for sulfide. Field measurements and screening observations were recorded on the groundwater sampling data sheets in Appendix A. Groundwater-level measurements are provided in Table 1. Field parameter measurements are provided in Table 2.

Groundwater samples were collected in containers supplied by the analytical laboratory, and each sample container was labeled, logged on a chain-of-custody report, and placed in a chilled cooler for transport to the laboratory. The chain-of-custody reports are presented in Appendix B.

2.2 Laboratory Analysis

Groundwater samples were submitted to Eurofins TestAmerica laboratory in Spokane, Washington for analysis of PAHs/cPAHs using US Environmental Protection Agency (EPA) Method 8270 SIM (selected ion monitoring), for total and dissolved arsenic using EPA Method 200.8, for mercury using EPA Method 245.1, for WAD cyanide using EPA Method SM4500-CN, and for total sulfide using EPA method SM4500 S2D. Split samples collected for analysis of WAD cyanide, using EPA Method SM4500-CN, were also submitted to Anatek Labs, Inc. in Spokane, Washington.

3.0 MONITORING RESULTS

3.1 Groundwater Elevation

The September 17, 2019 depth-to-groundwater measurements and calculated groundwater elevations are presented in Table 1. Groundwater elevations in monitoring wells ATC7-20, MW02-20, MW04-20, MW08-20, and MW09-20 and deep monitoring wells MW07-90, MW08-90, and MW09-100 ranged from 1,868.31 ft (ATC7-20) to 1,870.70 (MW02-20) ft. Groundwater elevations in all wells were below the river stage elevation (1,872.46 ft) recorded on September 17, 2019.

3.2 Groundwater Analytical Results

All groundwater samples were received by both laboratories in good condition and were prepared and analyzed within allowable holding times. Upon receipt from the laboratory, the analytical results were evaluated by LAI, and all data were deemed acceptable for project use without qualification.

Copies of the laboratory analytical reports are included in Appendix B, and the analytical results are presented in Tables 3 and 4. The results are summarized as follows:

- **Arsenic.** Total arsenic was detected above the laboratory method reporting limit (RL) in all groundwater samples at concentrations ranging from 0.0011 milligrams per liter (mg/L; MW02-40) to 0.0042 mg/L (MW07-90). None of the reported concentrations exceeded the 0.006-mg/L site cleanup level.
- **Dissolved Arsenic.** Dissolved arsenic was detected above the RL in all groundwater samples at concentrations ranging from 0.0012 mg/L (MW02-40) to 0.0042 (MW07-90). None of the reported concentrations exceeded the 0.006-mg/L site cleanup level.
- **WAD cyanide.** No detections of WAD cyanide were reported in any of the duplicate groundwater samples submitted to Eurofins TestAmerica and Anatek Labs, Inc.
- **PAHs.** No detections of PAHs or cPAHs were reported.
- **Mercury.** No detections of total mercury were reported.
- **Sulfide.** No detections of total sulfide were reported.

3.3 Summary

Total and dissolved arsenic were detected above the RL in all groundwater samples, but none of the detections exceeded the site cleanup level. No detections of WAD cyanide, PAH/cPAH, mercury, or sulfide were reported.

4.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of the Avista Corporation and BNSF Railway Company for specific application to the Hamilton Street Bridge Site in Spokane, Washington. The reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI shall be at the user's sole risk. LAI warrants that within the limitations of scope, schedule, and budget, its services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. LAI makes no other warranty, either express or implied.

5.0 REFERENCES

Avista. 2010. Letter: Hamilton Street Bridge Cleanup Site #3509. From Hank Nelson, Avista Corporation, to Teresita Bala, Washington State Department of Ecology. December 1.

Ecology. 2010. Periodic Review Hamilton Street Bridge Site, Facility/Site ID# 84461527, Cleanup Site ID# 3509. Washington State Department of Ecology. August.

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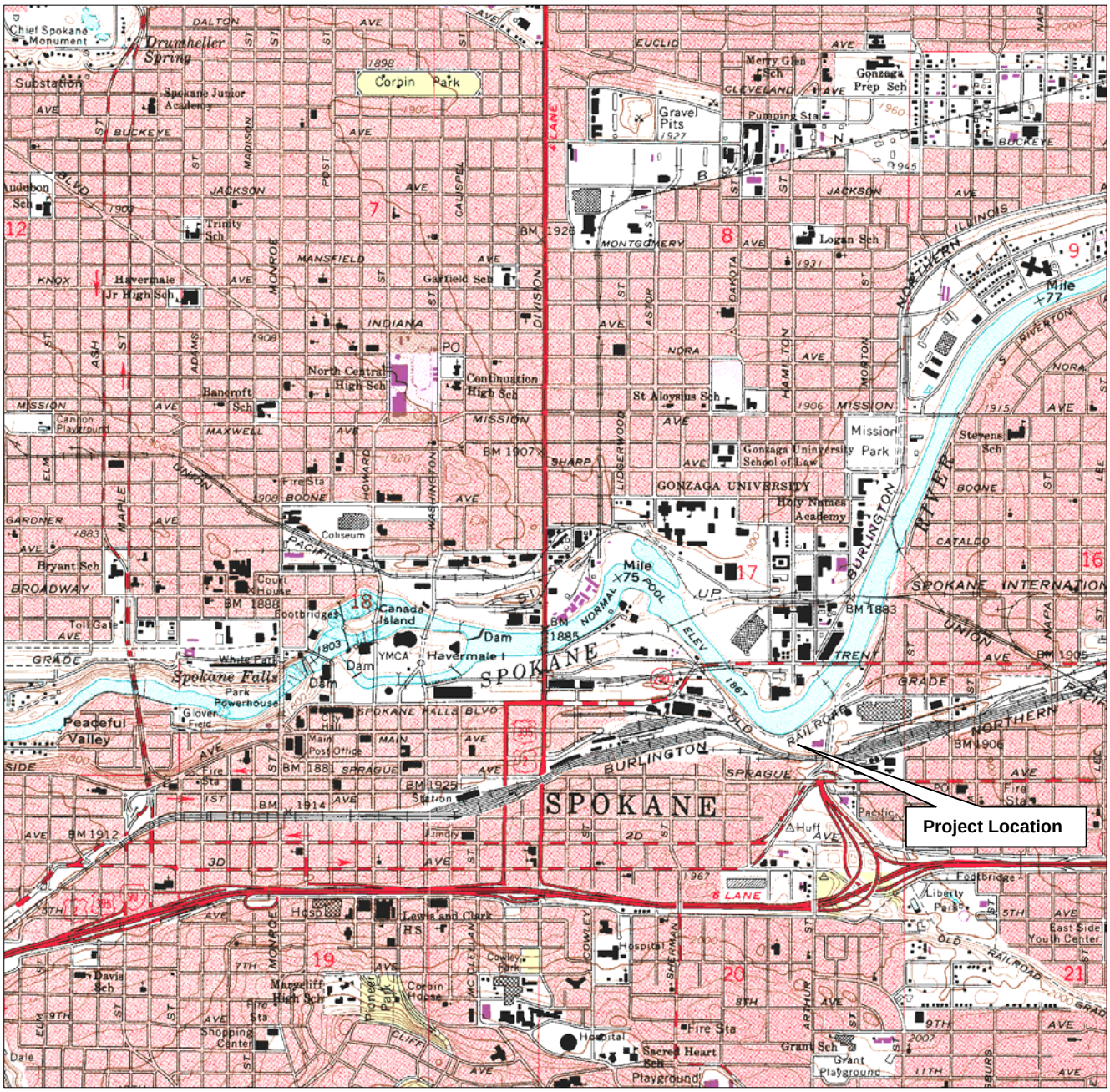
Ecology. 2018. Letter: Comments on Chlorine and Sulfide Screening Memorandum Dated June 26, 2018, Hamilton Street Bridge Site. Washington State Department of Ecology. August 6.

LAI. 2003. Compliance Monitoring Plan, Hamilton Street Bridge Site, Spokane, Washington. Landau Associates, Inc. June.



Source: USGS Spokane NW, WA Quad, 1974; PR 1986. Scale 1:24,000

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Hamilton Street Bridge Site Spokane, Washington	**Site Location Map**	Figure 1

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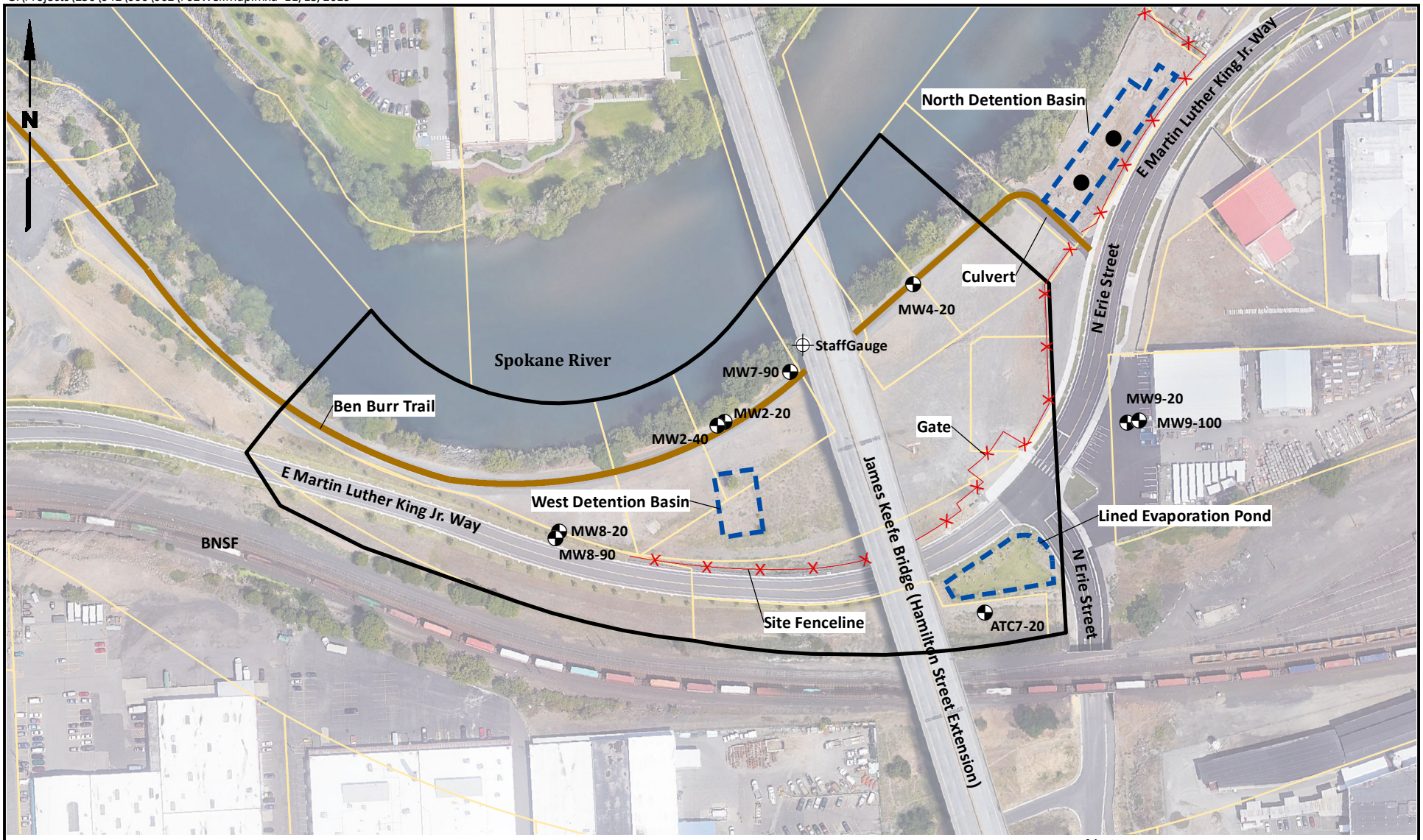

Legend

- Current Monitoring Well
- Drywell
- Staff Guage
- Hamilton Street Bridge Site
- Tax Parcels

0 200 400

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, July 2019; Spokane County GIS

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Hamilton Street Bridge Site
Spokane, Washington

Compliance Groundwater Monitoring Well Location Map

Figure 2

Table 1
Groundwater Level Measurements
Hamilton Street Bridge Site
Spokane, Washington

	Shallow Monitoring Wells										Deep Monitoring Wells							
Monitoring Well	MW02-20**		MW04-20**		MW08-20		MW09-20		ATC7-20		MW07-90**		MW08-90*		MW09-100		Spokane River	
TOC Elevation (ft)	1,884.84		1,884.25		1,892.06		1,887.59		1,886.76		1,884.40		1,895.26		1,887.44		1,875.23	
Date Measured	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
1/31/2006	16.08	1,872.34	14.57	1,872.87	19.64	1,872.42	12.91	1,874.68	13.68	1,873.08	14.24	1,872.97	19.12	1,872.95	13.63	1,873.81	4.58	1,870.65
8/8/2006	17.92	1,870.50	18.61	1,868.83	21.22	1,870.84	NM	NM	18.09	1,868.67	18.43	1,868.78	23.26	1,868.81	NM	NM	2.68	1,872.55
2/12/2007	17.56	1,870.86	17.01	1,870.43	21.05	1,871.01	15.55	1,872.04	16.33	1,870.43	16.74	1,870.47	21.62	1,870.45	16.24	1,871.20	3.32	1,871.91
9/6/2007	18.03	1,870.39	19.08	1,868.36	21.51	1,870.55	17.85	1,869.74	18.60	1,868.16	18.92	1,868.29	23.76	1,868.31	18.59	1,868.85	2.60	1,872.63
2/13/2008	17.56	1,870.86	17.72	1,869.72	21.03	1,871.03	16.31	1,871.28	17.09	1,869.67	17.48	1,869.73	22.34	1,869.73	17.02	1,870.42	3.15	1,872.08
9/10/2008	17.76	1,870.66	18.16	1,869.28	21.26	1,870.80	16.95	1,870.64	17.73	1,869.03	18.00	1,869.21	22.87	1,869.20	17.70	1,869.74	2.85	1,872.38
2/5/2009	17.55	1,870.87	16.14	1,871.30	20.96	1,871.10	15.27	1,872.32	15.39	1,871.37	15.86	1,871.35	20.86	1,871.21	14.56	1,872.88	3.4	1,871.83
8/19/2009	17.96	1,870.46	18.10	1,869.34	21.40	1,870.66	16.85	1,870.74	17.62	1,869.14	17.91	1,869.30	22.80	1,869.27	17.59	1,869.85	2.73	1,872.50
3/25/2010	17.55	1,870.87	17.42	1,870.02	21.03	1,871.03	15.95	1,871.64	16.73	1,870.03	17.16	1,870.05	22.04	1,870.03	16.66	1,870.78	3.18	1,872.05
8/17/2010	19.92	1868.50	19.25	1,868.19	21.75	1,870.31	17.87	1,869.72	18.67	1,868.09	19.04	1,868.17	23.88	1,868.19	18.59	1,868.85	12.42	1,862.81
2/3/2011	15.14	1873.28	13.05	1,874.39	18.56	1,873.50	11.22	1,876.37	12.15	1,874.61	12.81	1,874.40	17.74	1,874.33	11.94	1,875.50	5.81	1,869.42
9/22/2011	18.54	1869.88	18.26	1,869.18	21.73	1,870.33	16.9	1,870.69	17.71	1,869.05	18.20	1,869.01	22.87	1,869.20	17.61	1,869.83	2.45	1,872.78
2/28/2012	17.39	1870.03	17.38	1,870.06	20.8	1,871.26	15.83	1,871.76	16.51	1,870.25	16.94	1,870.27	21.77	1,870.30	16.48	1,870.96	3.40	1,871.83
9/5/2012	18.09	1870.33	18.13	1,869.31	21.5	1,870.56	16.9	1,870.69	17.70	1,869.06	17.96	1,869.25	22.81	1,869.26	17.62	1,869.82	2.60	1,872.63
2/20/2013	17.38	1871.04	16.48	1,870.96	20.74	1,871.32	15.18	1,872.41	15.82	1,870.94	16.23	1,870.98	21.11	1,870.96	15.70	1,871.74	3.41	1,871.82
9/5/2013	18.07	1870.35	18.59	1,868.85	21.43	1,870.63	17.29	1,870.30	18.08	1,868.68	18.37	1,868.84	23.21	1,868.86	18.00	1,869.44	2.68	1,872.55
3/20/2014	13.08	1875.34	11.72	1,875.72	16.43	1,875.63	10.12	1,877.47	10.98	1,875.78	11.48	1,875.73	16.40	1,875.67	10.81	1,876.63	7.80	1,867.43
9/10/2014	18.00	1870.42	18.35	1,869.09	21.35	1,870.71	17.13	1,870.46	17.90	1,868.86	18.17	1,869.04	23.03	1,869.04	17.81	1,869.63	2.75	1,872.48
3/2/2015	16.23	1872.19	14.13	1,873.31	19.58	1,872.48	12.33	1,875.26	13.20	1,873.56	13.75	1,873.46	18.68	1,873.39	13.01	1,874.43	4.62	1,870.61
9/28/2015	18.08	1870.34	19.02	1,868.42	21.42	1,870.64	17.82	1,869.77	18.60	1,868.16	18.87	1,868.34	23.74	1,868.33	18.52	1,868.92	2.70	1,872.53
3/3/2016	15.63	1872.79	13.96	1,873.48	19.01	1,873.05	12.31	1,875.28	13.16	1,873.60	13.65	1,873.56	18.56	1,873.51	12.44	1,875.00	5.28	1,869.95
9/13/2016	19.34	1869.08	--	--	22.05	1,870.01	17.97	1,869.62	18.76	1,868.00	19.09	1,868.12	27.15	1,868.11	18.67	1,868.77	1.42	1,873.81
3/23/2017	8.03	1880.39	7.30	1,880.14	11.34	1,880.72	5.83	1,881.76	6.64	1,880.12	7.16	1,880.05	15.24	1,880.02	6.52	1,880.92	12.36	1,862.87
9/6/2017	18.01	1870.41	18.30	1,869.14	21.34	1,870.72	17.13	1,870.46	17.90	1,868.86	18.15	1,869.06	26.19	1,869.07	17.84	1,869.60	2.77	1,872.46
3/12/2018	17.02	1871.40	15.48	1,871.96	20.38	1,871.68	13.85	1,873.74	14.70	1,872.06	15.14	1,872.07	23.22	1,872.04	14.52	1,872.92	3.76	1,871.47
8/28/2018	14.26	1870.58	15.22	1,869.03	21.44	1,870.62	17.22	1,870.37	18.01	1,868.75	15.46	1,868.94	26.30	1,868.96	17.92	1,869.52	2.66	1,872.57
3/7/2019	13.98	1870.86	14.20	1,870.05	21.16	1,870.90	16.00	1,871.59	16.78	1,869.98	14.36	1,870.04	25.20	1,870.06	16.67	1,870.77	2.97	1,872.26
9/17/2019	14.14	1870.70	15.56	1,868.69	21.38	1,870.68	17.67	1,869.92	18.45	1,868.31	15.87	1,868.53	26.70	1,868.56	18.39	1,869.05	2.77	1,872.46

Notes:

Depth measured in ft below TOC.

-- = Dry monitoring well

Original survey by USKH, Inc. Elevations based on NGS Station U-25 at USC&GS Brass Cap Benchmark, located on North Helena Street near railroad crossing, NAVD 88 Datum, elevation 1,909.50 ft.

* Top of casing elevation for monitoring well MW08-90 resurveyed by Adams & Clark, Inc. on November 17, 2017. Depth-to-water measurements recorded prior to September 13, 2016; sampling event references a pre-adjusted TOC elevation of 1,892.07 ft.

** Top of casing elevation for monitoring wells MW02-20, MW04-20, and MW07-90 resurveyed by Adams & Clark, Inc. on September 12, 2018. Depth-to-water measurements recorded prior to August 28, 2018 reference pre-adjusted TOC elevations.

Abbreviations and Acronyms:

ft = foot/feet

NAVD 88 = North American Vertical Datum of 1988

NGS = National Geodetic Data Survey

NM = not measured

TOC = top of casing

USC&GS = United States Coast and Geodetic Survey

Table 2
Summary of Groundwater Chemistry Data
Field Parameters
Hamilton Bridge Street Site
Spokane, Washington

Location	Date Measured	Field Parameters						
		Field Screening						
		Sulfide(a)	pH	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
MW02-20	9/17/2019	ND	7.54	14.03	187	6.30	156.8	1.86
MW04-20	9/17/2019	ND	7.55	14.31	200	6.03	155.7	2.35
MW02-40	9/17/2019	ND	7.28	14.21	192	4.95	164.1	2.01
MW07-90	9/17/2019	ND	7.69	14.00	300	2.35	121.7	3.60
ATC7-20	9/17/2019	ND	7.49	12.69	450	7.74	63.3	3.59

Notes:
-- = Dry monitoring well
Values are final measurements recorded after purging three well casing volumes.
(a) Field screened using lead acetate test strip. Detection is positive or negative based on color change.
ND= no detection based colorimetric response.

Abbreviations and Acronyms:
C = Celsius
µS/cm = microSiemens per centimeter
NTU = nephelometric turbidity units
mg/L = milligrams per liter
mV = millivolts

Table 3
Summary of Groundwater Chemistry Data
Arsenic, Cyanide, and Mercury
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Total Mercury EPA 245.1 (mg/L)	Total Arsenic EPA 200.8 (mg/L)	Dissolved Arsenic EPA 200.8 (mg/L)	WAD Cyanide(a) EPA SM4500-CN (mg/L)	Total Sulfide EPA SM4500 S2D (mg/L)
MW02-20	2/1/2006	0.0001 U	0.00100 U	--	0.00500 U	--
	8/9/2006*	0.0001 U	0.00100 U	--	0.0100 U	--
	2/13/2007*	0.0001 U	0.00108	--	0.0100 U	--
	9/6/2007*	0.000149 J	0.00105	--	0.0100 U	--
	2/13/2008*	0.0001 U	0.00140	--	0.0100 U	--
	9/10/2008	0.000152	0.00957	--	0.00500 U	--
	2/6/2009	0.0002 U	0.00100 U	--	0.00500 U	--
	8/20/2009	0.000201	0.00251	--	0.00500 U	--
	3/26/2010	0.0002 U	0.0001 U	--	0.00500 U	--
	8/18/2010	0.0002 U	0.001 U	--	0.00500 U	--
	2/4/2011	0.0002 U	0.001 U	0.001 U	0.00500 U	--
	9/23/2011	0.0002 U	0.00134	0.00140	0.00500 U	--
	2/29/2012	0.0002 U	0.0010 U	0.0010 U	0.00500 U	--
	9/6/2012	0.0002 U	0.0010	0.0010 U	0.00500 U	--
	2/21/2013	0.0002 U	0.0010 U	0.0010 U	0.0050 U	--
	9/6/2013	0.0002 U	0.0011	0.0010 U	0.0050 U	--
	3/21/2014	0.0002 U	0.0010 U	0.0010 U	0.0050 U	--
	9/10/2014	0.0002 U	0.0013	0.0015	0.0050 U	--
	3/3/2015	0.0002 U	0.0020 U	0.0020 U	0.010 U	--
	9/28/2015	0.0002 U	0.0020 U	0.0020 U	0.010 U	--
	3/4/2016	0.0002 U	0.0020 U	0.0020 U	0.042	--
	9/13/2016	0.0002 U	0.0011	0.0010 U	0.010 U	--
	3/23/2017	0.0002 U	0.0010 U	0.0010 U	0.010 U	--
	9/6/2017	0.0002 U	0.0019	0.0018	0.010 U	--
	3/12/2018	0.0002 U	0.0010 U	0.0010 U	0.010 U	--
	8/28/2018**	0.0002 U	0.0015	0.0017	0.010 U	0.10 U
	3/7/2019	0.0002 U	0.0014	0.0016	0.022	0.10 U
	9/17/2019	0.0002 U	0.0018	0.0018	0.010U/0.010U (b)	0.05 U
MW02-40	2/1/2006	0.0001 U	0.00158	--	0.00500 U	--
	8/9/2006*	0.0001 U	0.00100 U	--	0.0100 U	--
	2/13/2007	0.0001 U	0.00155	--	0.0100 U	--
	9/6/2007	0.000171 J	0.00115	--	0.0100 U	--
	2/13/2008	0.0001 U	0.00167	--	0.0100 U	--
	9/10/2008	0.0001 U	0.00145	--	0.00500 U	--
	2/6/2009	0.0002 U	0.00125	--	0.00500 U	--
	8/20/2009	0.0002 U	0.00121	--	0.00500 U	--
	3/26/2010	0.0002 U	0.00113	--	0.00500 U	--
	8/18/2010	0.0002 U	0.00125	--	0.00500 U	--
	2/4/2011	0.0002 U	0.00126	0.00115	0.00500 U	--
	9/23/2011	0.0002 U	0.00140	0.00143	0.00500 U	--
	2/29/2012	0.0002 U	0.0013	0.0012	0.00500 U	--
	9/6/2012	0.0002 U	0.0017	0.0016	0.00500 U	--
	2/21/2013	0.0002 U	0.0023	0.0027	0.0050 U	--
	9/6/2013	0.0002 U	0.0012	0.0011	0.0050 U	--
	3/21/2014	0.0002 U	0.0013	0.0014	0.0050 U	--
	9/10/2014	0.0002 U	0.0016	0.0015	0.0050 U	--
	3/3/2015	0.0002 U	0.0020 U	0.0020 U	0.010 U	--
	9/28/2015	0.0002 U	0.0020 U	0.0020 U	0.010 U	--
	3/3/2016	0.0002 U	0.0020 U	0.0020 U	0.013	--
	9/13/2016	0.0002 U	0.0013	0.0014	0.010 U	--
	3/23/2017	0.0002 U	0.0013	0.0014	0.010 U	--
	9/6/2017	0.0002 U	0.0016	0.0014	0.010 U	--
	3/12/2018	0.0002 U	0.0021	0.0021	0.010 U	--
	8/28/2018**	0.0002 U	0.0013	0.0013	0.010 U	0.10 U
	3/7/2019	0.0002 U	0.0014	0.0014	0.011	0.10 U
	9/17/2019	0.0002 U	0.0011	0.0012	0.010U/0.010U (b)	0.05 U
Site Cleanup Level (c)		0.0002	0.006	0.006	0.01	NA

Table 3
Summary of Groundwater Chemistry Data
Arsenic, Cyanide, and Mercury
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Total Mercury EPA 245.1 (mg/L)	Total Arsenic EPA 200.8 (mg/L)	Dissolved Arsenic EPA 200.8 (mg/L)	WAD Cyanide(a) EPA SM4500-CN (mg/L)	Total Sulfide EPA SM4500 S2D (mg/L)
MW04-20	2/1/2006	0.0001 U	0.00354	--	0.0408	--
	8/10/2006*	0.0001 U	0.00372	--	0.0100 U	--
	2/13/2007*	0.0001 U	0.00500	--	0.0100 U	--
	9/6/2007*	0.000145 J	0.00393	--	0.0100 U	--
	2/13/2008	0.000152	0.00726	--	0.0100 U	--
	9/10/2008	0.000114	0.0235	--	0.00500 U	--
	2/6/2009	0.000118	0.00580	--	0.00850	--
	8/20/2009	0.0002 U	0.0258	--	0.00500 U	--
	3/26/2010	0.0002 U	0.00211	--	0.00500 U	--
	8/18/2010	0.0002 U	0.00528	--	0.00500 U	--
	2/4/2011	0.0002 U	0.00272	0.00252	0.01920	--
	9/23/2011	0.0002 U	0.00344	0.00338	0.00500 U	--
	2/29/2012	0.0002 U	0.0025	0.0026	0.00500 U	--
	9/6/2012	0.0002 U	0.0034	0.0016	0.00500 U	--
	2/21/2013	0.0002 U	0.0025	0.0026	0.0053	--
	9/6/2013	0.0002 U	0.0034	0.0034	0.0050 U	--
	3/21/2014	0.0002 U	0.0030	0.0029	0.0050 U	--
	9/10/2014	0.0002 U	0.0035	0.0037	0.0050 U	--
	3/3/2015	0.0002 U	0.0027	0.0026	0.100 UJ	--
	9/28/2015	0.0002 U	0.0033	0.0032	0.010 U	--
	3/3/2016	0.0002 U	0.0020 U	0.0026	0.031	--
	9/13/2016(d)	--	--	--	--	--
	3/23/2017	0.0002 U	0.0030	0.0029	0.010 U	--
	9/6/2017	0.0002 U	0.0034	0.0035	0.010 U	--
	3/12/2018	0.0002 U	0.0023	0.0021	0.019	--
	8/28/2018**	0.0002 U	0.0033	0.0035	0.010 U	0.10 U
	3/7/2019	0.0002 U	0.0019	0.0019	0.010 U	0.10 U
	9/17/2019	0.0002 U	0.0024	0.0025	0.010U/0.010U (b)	0.05 U
ATC7-20	2/1/2006	0.0001 U	0.00740	--	0.00500 U	--
Duplicate	2/1/2006	0.0001 U	0.00746	--	0.00500 U	--
	8/10/2006*	0.0001 U	0.00481	--	0.0100 U	--
	2/13/2007	0.0001 U	0.00716	--	0.0100 U	--
	9/6/2007*	0.000147 J	0.00427	--	0.0100 U	--
	2/13/2008	0.0001 U	0.00549	--	0.0100 U	--
	9/10/2008	0.0001 U	0.00564	--	0.00500 U	--
	2/6/2009	0.000079	0.00469	--	0.00500 U	--
	8/20/2009	0.0002 U	0.00959	--	0.00500 U	--
	3/26/2010	0.0002 U	0.00423	--	0.00500 U	--
	8/18/2010	0.0002 U	0.00480	--	0.00500 U	--
	2/4/2011	0.0002 U	0.00598	0.00579	0.00500 U	--
	9/23/2011	0.0002 U	0.00523	0.00553	0.00500 U	--
	2/29/2012	0.00025 U	0.0051	0.0051	0.00500 U	--
	2/21/2013	0.0002 U	0.0053	0.0058	0.0050 U	--
	9/6/2013	0.0002 U	0.0043	0.0044	0.0050 U	--
	3/21/2014	0.0002 U	0.0052	0.0059	0.0050 U	--
	9/10/2014	0.0002 U	0.0048	0.0048	0.0050 U	--
	3/3/2015	0.0002 U	0.0067	0.0068	0.010 U	--
	9/28/2015	0.0002 U	0.0036	0.0036	0.010 U	--
	3/3/2016	0.0002 U	0.0035	0.0060	0.010 U	--
	9/13/2016	0.0002 U	0.0039	0.0039	0.010 U	--
	3/24/2017	0.0002 U	0.0060	0.0057	R	--
	9/6/2017	0.0002 U	0.0051	0.0046	0.010 U	--
	3/12/2018	0.0002 U	0.0062	0.0060	0.010 U	--
	8/28/2018**	0.0002 U	0.0050	0.0051	0.010 U	0.10 UJ
	3/7/2019	0.0002 U	0.0051	0.0050	0.010 UJ	R
	9/17/2019	0.0002 U	0.0041	0.0041	0.010U/0.010U (b)	0.05 U
Site Cleanup Level (c)		0.0002	0.006	0.006	0.01	NA

Table 3
Summary of Groundwater Chemistry Data
Arsenic, Cyanide, and Mercury
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Total Mercury EPA 245.1 (mg/L)	Total Arsenic EPA 200.8 (mg/L)	Dissolved Arsenic EPA 200.8 (mg/L)	WAD Cyanide(a) EPA SM4500-CN (mg/L)	Total Sulfide EPA SM4500 S2D (mg/L)
MW07-90	2/1/2006	0.0001 U	0.00703	--	0.00500 U	--
	8/9/2006	0.0001 U	0.00571	--	0.0100 U	--
Duplicate	8/9/2006	0.0001 U	0.00600	--	0.0100 U	--
	2/13/2007	0.0001 U	0.00547	--	0.0100 U	--
Duplicate	2/13/2007	0.0001 U	0.00517	--	0.0100 U	--
	9/6/2007	0.000152 J	0.00796	--	0.0100 U	--
Duplicate	9/6/2007	0.000173 J	0.00815	--	0.0100 U	--
	2/13/2008	0.0001 U	0.00725	--	0.0100 U	--
Duplicate	2/13/2008	0.0001 U	0.00907	--	0.0100 U	--
	9/10/2008	0.0001 U	0.00508	--	0.0051	--
Duplicate	9/10/2008	0.0001 U	0.00530	--	0.0058	--
	2/6/2009	0.0002 U	0.00477	--	0.00500 U	--
Duplicate	2/6/2009	0.0002 U	0.00484	--	0.00500 U	--
	8/20/2009	0.0002 U	0.00469	--	0.00500 U	--
Duplicate	8/20/2009	0.0002 U	0.00466	--	0.00670	--
	3/26/2010	0.0002 U	0.00443	--	0.00500 U	--
Duplicate	3/26/2010	0.0002 U	0.00443	--	0.00500 U	--
	8/18/2010	0.0002 U	0.00492	--	0.00500 U	--
Duplicate	8/18/2010	0.0002 U	0.00474	--	0.00500 U	--
	2/4/2011	0.0002 U	0.00490	0.00489	0.00500 U	--
Duplicate	2/4/2011	0.0002 U	0.00524	0.00498	0.00500 U	--
	9/23/2011	0.0002 U	0.00479	0.00530	0.00500 U	--
Duplicate	9/23/2011	0.0002 U	0.00503	0.00515	0.00500 U	--
	2/29/2012	0.0002 U	0.0048	0.0050	0.00500 U	--
Duplicate	2/29/2012	0.0002 U	0.0047	0.0049	0.00500 U	--
	9/6/2012	0.0002 U	0.0057	0.0055	0.00500 UJ	--
Duplicate	9/6/2012	0.0002 U	0.0052	0.0054	0.03000 J	--
	2/21/2013	0.0002 U	0.0049	0.0045	0.0050 U	--
Duplicate	2/21/2013	0.0002 U	0.0046	0.0049	0.0050 U	--
	9/6/2013	0.0002 U	0.0055	0.0057	0.0050 U	--
Duplicate	9/6/2013	0.0002 U	0.0055	0.0054	0.0050 U	--
	3/21/2014	0.0002 U	0.0051	0.0055	0.0050 U	--
Duplicate	3/21/2014	0.0002 U	0.0049	0.0055	0.0050 U	--
	9/10/2014	0.0002 U	0.0065	0.0060	0.0050 U	--
Duplicate	9/10/2014	0.0002 U	0.0060	0.0062	0.0050 U	--
	3/3/2015	0.0002 U	0.0058	0.0055	0.010 U	--
Duplicate	3/3/2015	0.0002 U	0.0061	0.0055	0.010 U	--
	9/28/2015	0.0002 U	0.0045	0.0042	0.010 U	--
Duplicate	9/28/2015	0.0002 U	0.0046	0.0039	0.010 U	--
	3/4/2016	0.0002 U	0.0028	0.0051	0.010 U	--
Duplicate	3/4/2016	0.0002 U	0.0026	0.0120	0.010 U	--
	9/13/2016	0.0002 U	0.0048	0.0047	0.010 U	--
Duplicate	9/13/2016	0.0002 U	0.0044	0.0046	0.010 U	--
	3/24/2017	0.0002 U	0.0046	0.0044	0.010 U	--
Duplicate	3/24/2017	0.0002 U	0.0047	0.0045	0.010 U	--
	9/6/2017	0.0002 U	0.0047	0.0044	0.010 U	--
Duplicate	9/6/2017	0.0002 U	0.0048	0.0043	0.010 U	--
	3/12/2018	0.0002 U	0.0047	0.0045	0.010 U	--
Duplicate	3/12/2018	0.0002 U	0.0049	0.0045	0.010 U	--
	8/28/2018**	0.0002 U	0.0043	0.0049	0.010 U	0.10 U
Duplicate	8/28/2018**	0.0002 U	0.0043	0.0047	0.010 U	0.10 U
	3/7/2019	0.0002 U	0.0045	0.0048	0.027 J	0.10 U
Duplicate	3/7/2019	0.0002 U	0.0043	0.0048	0.010 UJ	0.10 U
	9/17/2019	0.0002 U	0.0042	0.0042	0.010U/0.010U (b)	0.05 U
Duplicate	9/17/2019	0.0002 U	0.0037	0.0042	0.010U/0.010U (b)	0.05 U
Site Cleanup Level (c)		0.0002	0.006	0.006	0.01	NA

Notes:

-- = not analyzed.

Concentrations boxed and shaded are at or above site cleanup levels.

J = Indicates the compound was detected; the reported sample concentration is an estimate.

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate, and may be inaccurate or imprecise.

R = The result was rejected due to zero spike recovery in the associated laboratory matrix spike and matrix spike duplicate samples.

* Sample field filtered.

** Sulfide samples collected August 30, 2018.

(a) WAD cyanide analyzed by SM4500-CN-I.

(b) During the September 2019 sampling event, split samples were collected and submitted to TestAmerica Spokane and Anatek Laboratory for WAD cyanide analysis. Reported results from both labs were non-detect at a reporting limit of 0.010 mg/L for all samples.

(c) Final Cleanup Action Plan (Ecology 2001).
(d) Well is dry; groundwater sample not collected.

Abbreviations and Acronyms:

EPA = U.S. Environmental Protection Agency
NS = not specified
NR = not run by laboratory
mg/L = milligrams per liter
WAD = weak acid dissociable

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
MW02-20	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/9/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 UJ	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	ND
	2/13/2007	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/6/2007	0.100 UJ	NA	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.107 J	0.126 J	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.126 J	0.100 UJ	0.100 UJ	**0.13**
	2/13/2008	0.146	NA	0.100 U	0.117	0.100 U	0.100 U	0.243	0.126	1.05	1.04	1.50	0.932	1.05	0.748	1.16	0.893	0.816	0.272	**1.30**
	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0943	0.100 U	0.100 U	0.09
	2/6/2009	0.100 U	NA	0.100 U	0.100 UJ	0.100 U	0.100 U	0.095	0.100 U	0.438	0.229 U	0.410	0.390	0.410	0.724	0.267 U	0.543 U	0.219 U	0.114 U	**0.66**
	8/20/2009	0.500 U	NA	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.32	1.35	1.24	1.30	1.57	2.92	0.500 U	1.89	1.16	0.500 U	**2.44**
	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/23/2011	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
	9/6/2012	0.0100 U	0.0100 U	0.013 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
	2/21/2013	0.0096 UJ	0.0096 UJ	0.012 UJ	0.0096 UJ	0.0096 U	0.0096 U	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 UJ	0.0096 U	0.0096 UJ	0.019 UJ	0.0096 UJ	0.0096 UJ	ND
	9/6/2013	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	0.0958 U	ND
	3/21/2014	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	ND
	9/10/2014	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	0.0914 U	ND
	3/3/2015	0.083 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	0.0830 U	ND
	9/28/2015	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/4/2016	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	ND
	9/13/2016	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
	3/23/2017	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
	9/6/2017	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	3/12/2018	0.075 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	ND
	8/28/2018	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	ND
	3/7/2019	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	9/17/2019	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	ND
												Toxicity Equivalency Factor(d)	0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
MW02-40	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/9/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 UJ	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	ND
	2/13/2007	0.100 U	NA	0.100 U	0.115	0.375	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.125	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/6/2007	0.100 UJ	NA	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	ND
	2/13/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/6/2009	0.100 U	NA	9.39	26.9 J	5.82	0.858	0.179	0.123	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.0943 U	ND
	8/20/2009	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/23/2011	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
	9/6/2012	0.0120	0.0100 U	0.013 U	0.0110	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
	2/21/2013	16 J	21 J	0.070 J	34 J	11	0.50	3.9 J	0.30 J	0.11 J	0.0097 UJ	0.11 J	0.0097 UJ	0.0097 UJ	0.0097 U	0.0097 UJ	0.019 UJ	0.0097 UJ	0.0097 UJ	ND
	9/6/2013	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	ND
	3/21/2014	17.0	31.8	1.85	42.3	14.5	2.82	0.625	0.115	0.0961 U	0.0961	0.154	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	0.0961 U	ND
	9/10/2014	0.176	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	ND
	3/3/2015	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	9/28/2015	0.098	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/3/2016	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	ND
	9/13/2016	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	ND
	3/23/2017	0.083 U	0.083 U	0.083 U	0.16	0.21	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	9/6/2017	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	3/12/2018	0.075 U	0.037 U	0.056 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.056 U	0.037 U	0.037 U	0.037 U	ND
	8/28/2018	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	ND
	3/7/2019	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	9/17/2019	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
												Toxicity Equivalency Factor(d)	0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
MW04-20	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/10/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 UJ	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	ND
	2/13/2007	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/6/2007	0.100 UJ	NA	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	ND
	2/13/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/6/2009	0.100 U	NA	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/20/2009	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/23/2011	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
	9/6/2012	0.0100 U	0.0100 U	0.013 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
	2/21/2013	0.0097 U	0.0097 U	0.013 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 U	0.0097 UJ	0.0097 U	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.019 UJ	0.0097 UJ	0.0097 UJ	ND
	9/6/2013	0.0967 U	0.0967 U	0.097 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.0967 U	0.097 U	0.0967 U	0.0967 U	ND
	3/21/2014	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	0.0964 U	ND
	9/10/2014	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	0.0905 U	ND
	3/3/2015	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	ND
	9/28/2015	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	ND
	3/3/2016	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	ND
	*9/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/23/2017	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	ND
	9/6/2017	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	3/12/2018	0.075 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	ND
	8/28/2018	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	ND
	3/7/2019	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	ND
	9/17/2019	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	ND
												Toxicity Equivalency Factor(d)	0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
ATC7-20	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/10/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 UJ	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	ND
	2/13/2007	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/6/2007	0.100 UJ	NA	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	ND
	2/13/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/6/2009	0.100 U	NA	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/20/2009	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/23/2011	0.263	0.105 U	0.295	0.253	0.105 U	0.179	0.389	0.105	0.105 U	0.105 U	0.116	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
	9/6/2012	0.0100 U	0.0100 U	0.013 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
	2/21/2013	0.0095 UJ	0.0095 UJ	0.012 UJ	0.0095 UJ	0.0095 U	0.0095 U	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 UJ	0.0095 U	0.0095 UJ	0.019 UJ	0.0095 UJ	0.0095 UJ	ND
	9/6/2013	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	0.0957 U	ND
	3/21/2014	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	0.0949 U	ND
	9/10/2014	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	0.0903 U	ND
	3/3/2015	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
	9/28/2015	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/3/2016	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	ND
	9/13/2016	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/24/2017	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	9/6/2017	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	3/12/2018	0.075 U	0.038 U	0.057 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.057 U	0.038 U	0.038 U	ND
	8/28/2018	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	0.090 U	ND
	3/7/2019	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	ND
	9/17/2019	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
											Toxicity Equivalency Factor(d)		0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
MW07-90	2/1/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/9/2006	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 UJ	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 UJ	0.107	0.01
Duplicate	8/9/2006	0.100 U	NA	0.100 U	0.107	0.117	0.136	0.165	0.146	0.155	0.214 J	0.204 J	0.194	0.117	0.214 J	0.175	0.194	0.214 J	0.184	**0.29**
	2/13/2007	0.100 U	NA	0.100 U	0.117	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	2/13/2007	0.100 U	NA	0.100 U	0.126	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/6/2007	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	9/6/2007	0.100 UJ	NA	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	0.100 UJ	ND
	2/13/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	2/13/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	9/10/2008	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/6/2009	0.100 U	NA	0.100 U	0.396 J	0.0966	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	2/6/2009	0.100 U	NA	0.100 U	0.100 UJ	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.105 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.124 U	0.124 U	ND
	8/20/2009	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	8/20/2009	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	3/26/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	8/18/2010	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
Duplicate	2/4/2011	0.100 U	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	ND
	9/23/2011	0.105 UJ	0.105 UJ	0.105 UJ	0.105 UJ	0.105 U	0.105 UJ	0.105 UJ	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
Duplicate	9/23/2011	1.13 J	0.484 J	1.64 J	0.832 J	0.105 U	0.295 J	0.442 J	0.126	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	0.105 U	ND
												Toxicity Equivalency Factor(d)	0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Table 4
Summary of Groundwater Chemistry Data
Polycyclic Aromatic Hydrocarbons
Hamilton Street Bridge Site
Spokane, Washington

Well	Date Sampled	Polycyclic Aromatic Hydrocarbons (µg/L)(a)																		
		PAH											cPAH							
		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Benzo (g,h,i) perylene	Pyrene	Benzo (a) anthracene(b)	Chrysene(b)	Benzo (b) fluoranthene(b)	Benzo (k) fluoranthene(b)	Benzo (a) pyrene(b)	Indeno (1,2,3-cd) pyrene(b)	Dibenz (a,h) anthracene(b)	Toxicity Equivalent Concentration(c)
MW07-90 Contin.																				
	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
Duplicate	2/29/2012	0.0096 U	0.0096 U	0.013 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.0096 U	0.019 U	0.0096 U	0.0096 U	ND
	9/6/2012	0.0100 U	0.0100 U	0.013 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
Duplicate	9/6/2012	0.0100 U	0.0100 U	0.013 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.020 U	0.0100 U	0.0100 U	ND
	2/21/2013	0.0097 UJ	0.010	0.013 UJ	0.014 J	0.0097 U	0.0097 U	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 UJ	0.0097 U	0.0097 UJ	0.019 UJ	0.0097 UJ	0.0097 UJ	ND
Duplicate	2/21/2013	0.0098 UJ	0.0098 UJ	0.013 UJ	0.0098 UJ	0.0098 UJ	0.0098 U	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 U	0.0098 UJ	0.020 UJ	0.0098 UJ	0.0098 UJ	ND
	9/6/2013	0.0974 U	0.0974 U	0.097 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	0.0974 U	ND
Duplicate	9/6/2013	0.0977 U	0.0977 U	0.098 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	0.0977 U	ND
	3/21/2014	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	0.0959 U	ND
Duplicate	3/21/2014	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	ND
	9/10/2014	0.0899 U	0.0899 U	0.0899 U	0.0899 U	0.0899 U	0.0899 U	0.0940	0.0899 U	0.0899 U	0.0899 U	0.0899 U	0.0899 U	0.292 J	0.0899 U	0.0899 U	0.102	0.0899 U	0.0899 U	0.0899 U	**0.1J**
Duplicate	9/10/2014	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 UJ	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	0.0896 U	ND
	3/3/2015	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
Duplicate	3/3/2015	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	9/28/2015	0.22	0.45	0.083 U	0.19	2.0	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
Duplicate	9/28/2015	0.24	0.48	0.083 U	0.21	2.2	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/4/2016	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	ND
Duplicate	3/4/2016	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	ND
	9/13/2016	2.3 J	3.8	0.083 U	0.34	4.0	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
Duplicate	9/13/2016	3.0 J	4.0	0.083 U	0.34	3.9	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	ND
	3/24/2017	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
Duplicate	3/24/2017	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
	9/6/2017	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	ND
Duplicate	9/6/2017	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	ND
	3/12/2018	0.075 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.056 U	0.038 U	0.038 U	0.038 U	ND
Duplicate	3/12/2018	0.077 U	0.038 U	0.058 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.058 U	0.038 U	0.038 U	0.038 U	ND
	8/28/2018	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	ND
Duplicate	8/28/2018	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	ND
	3/7/2019	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.13	0.084 U	0.087	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
Duplicate	3/7/2019	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
	9/17/2019	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
Duplicate	9/17/2019	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	ND
											Toxicity Equivalency Factor(d)		0.100	0.010	0.100	0.100	1.000	0.100	0.100	
Site Cleanup Level (e)		320	NS	NS	NS	643	640	NS	4800	90.2	NS	480	--	--	--	--	--	--	--	0.1

Notes:

(a) PAH analyzed by EPA Method 8270-SIM.
(b) cPAH

(d) Toxicity Equivalency Factors for cPAHs, WAC 173-340 (Ecology 2007).
(e) Washington State MTCA Chapter 173-340 WAC Method A residential cleanup levels

(e) Washington State MTCA Chapter 173-340 WAC Method A residential cleanup levels.
Concentrations in bold are detected above the laboratory quantitation limit.
Concentrations boxed and shaded are at or above the site cleanup level.
Duplicate Sample ID = MW20-60
*Well is dry; groundwater sample not collected.
J = Indicates the compound was detected; the reported sample concentration is an estimate.
U = Indicates the compound was analyzed for, but was not detected at the given detection limit. Values may be rounded.

Abbreviations and Acronyms:

cPAH = carcinogenic polycylic aromatic hydrocarbons
EPA = U.S. Environmental Protection Agency
MTCA = Model Toxics Control Act
PAH = polycyclic aromatic hydrocarbons
WAC = Washington Administrative Code

APPENDIX A

Groundwater Sample Collection Forms

Summary of Groundwater Monitoring Well Measurements
Avista Hamilton Street Bridge
Spokane, Washington

Date Measured: 9/17/19
Field Personnel: Shane Kostka

Well Number	Time	Depth to Groundwater - below PVC casing (feet)
ATC7-20	10:12	18.45
MW2-20	9:47	14.14
MW2-40	9:43	16.12
MW4-20	10:26	15.56
MW7-90	9:33	15.87
MW8-20	9:50	21.38
MW8-90	9:53	26.70
MW9-20	9:14	17.67
MW9-100	9:11	18.39
River Stage	9:27	5.00' - 2.23' = 2.77'

NM = not measured

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT September 2019 GW Sampling

SAMPLE NO. MW-4-20-091719
DATE COLLECTED 9/17/19 TIME 11:30

WEATHER 13°C / Partly Cloudy COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other

Depth to Water (ft) 15.56 Time 10:26 Meas. From: [ ] Top of Protective Casing [x] Top of Well Casing

Well Casing Type: [x] PVC [ ] Stainless Steel [ ] Fiberglass Casing/Well Diameter (", whole no.): 2

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe ~~Above ground monument~~ Flush Mount

Sample Location: MW4-20

Begin Purge: Date/Time 9/17/19, 11:01 Casing Volume (gal): 1.1

End Purge: Date/Time 9/17/19, 11:29 Purge Volume (gal): 3.3

Total Depth of Well (ft. below top of well casing) 21.8

Casing Volume Calculation: (21.8 - 15.56)(0.17) = 1.1 gal

VOLUME OF SCHEDULE 40 PVC PIPE

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/ln ft)	Wt. Water (lbs/ln ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Purge Water Disposal to: [x] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Comments/Observations
1.1	14.37	196	6.17	7.72	149.5	2.57	15.55	ND	
2.2	14.34	200	6.09	7.64	152.4	2.33	15.56	ND	
3.3	14.31	200	6.03	7.55	155.7	2.35	15.56	ND	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri pump

Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [ ] Polyethylene [x] Dedicated [ ] Other

Decon Procedure: [x] Liquinox Wash [ ] Tap Rinse [x] DI Water [x] Dedicated [ ] Other

Sample Description (color, turbidity, odor, sheen, etc.): clear, colorless, no odor or sheen

Containers	ANALYSIS	Preservative
1	8270D SIM PAH	None
2	4500 WAD cyanide	NaOH
2	Total Metals (As) (Hg)	HNO3
1	Dissolved Metals (As)	Lab Filtered
1	Total Sulfide	NaOH, ZN Acetate

Duplicate Sample No(s): —

Comments:

Signature: [signature] Date 9/17/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT September 2019 GW Sampling

SAMPLE NO. MW-2-20-091719
DATE COLLECTED 9/17/19 TIME 12:25

WEATHER 16°C / Partly cloudy COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [X] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 14.19 Time: 11:49 Meas. From: [ ] Top of Protective Casing [X] Top of Well Casing
Well Casing Type: [X] PVC [ ] Stainless Steel [ ] Fiberglass Casing/Well Diameter (", whole no.): 2
Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe ~~Above ground monument~~ Flush mount
Sample Location: MW2-20
Begin Purge: Date/Time 9/17/19, 11:49 Casing Volume (gal): 1.4
End Purge: Date/Time 9/17/19, 12:19 Purge Volume (gal): 4.2
Total Depth of Well (ft. below top of well casing) 22.5
Casing Volume Calculation: (22.5 - 14.19)(0.17) = 1.4 gal

VOLUME OF SCHEDULE 40 PVC PIPE

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/in ft)	Wt. Water (lbs/in ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Purge Water Disposal to: [X] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Comments/Observations
1.4	13.96	187	6.38	7.49	158.0	3.16	14.19	ND	
2.8	13.98	187	6.31	7.53	157.7	2.25	14.19	ND	
4.2	14.03	187	6.30	7.54	156.8	1.86	14.19	ND	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [X] Pump/Type Peri - Pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [ ] Polyethylene [X] Dedicated [ ] Other
Decon Procedure: [X] Liquinox Wash [ ] Tap Rinse [X] DI Water [X] Dedicated [ ] Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, colorless, no odor or sheen

Containers	ANALYSIS	Preservative
1	8270D SIM PAH	None
2	4500 WAD cyanide	NaOH
2	Total Metals (As) (Hg)	HNO3
1	Dissolved Metals (As)	Lab Filtered
1	Total Sulfide	NaOH, ZN Acetate

Duplicate Sample No(s): —
Comments:

Signature: [signature] Date 9/17/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT September 2019 GW Sampling

SAMPLE NO. MW-2-40-091719
DATE COLLECTED 9/17/19 TIME 14:10

WEATHER 17°C/Partly Cloudy COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 16.10 Time: 12:43 Meas. From: [ ] Top of Protective Casing [x] Top of Well Casing
Well Casing Type: [x] PVC [ ] Stainless Steel [ ] Fiberglass Casing/Well Diameter (", whole no.): 2
Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe ~~Above-ground monument~~ Flush mount
Sample Location: MW2-40
Begin Purge: Date/Time 9/17/19, 12:43 Casing Volume (gal): 4.6
End Purge: Date/Time 9/17/19, 14:08 Purge Volume (gal): 13.8
Total Depth of Well (ft. below top of well casing) 43.0
Casing Volume Calculation: (43.0 - 16.10)(0.17) = 4.6

VOLUME OF SCHEDULE 40 PVC PIPE

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/ln ft)	Wt. Water (lbs/ln ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Purge Water Disposal to: [x] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Comments/Observations
4.6	14.10	193	5.06	7.29	161.0	2.88	16.09	ND	
9.2	14.15	192	4.99	7.28	162.7	2.60	16.09	ND	
13.8	14.21	192	4.95	7.28	164.1	2.01	16.08	ND	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type Peri - Pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [ ] Polyethylene [x] Dedicated [ ] Other
Decon Procedure: [x] Liquinox Wash [ ] Tap Rinse [x] DI Water [x] Dedicated [ ] Other
Sample Description (color, turbidity, odor, sheen, etc.): Clear, colorless, no odor or sheen

Containers	ANALYSIS	Preservative
1	8270D SIM PAH	None
2	4500 WAD cyanide	NaOH
2	Total Metals (As) (Hg)	HNO3
1	Dissolved Metals (As)	Lab Filtered
1	Total Sulfide	NaOH, ZN Acetate

Duplicate Sample No(s): —
Comments:

Signature: Date 9/17/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT September 2019 GW Sampling

SAMPLE NO. MW-7-90-091719
DATE COLLECTED 9/17/19 TIME 16:10

WEATHER 19°C / Partly Cloudy COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 15.83 Time: 15:22 Meas. From: [ ] Top of Protective Casing [x] Top of Well Casing
Well Casing Type: [x] PVC [ ] Stainless Steel [ ] Fiberglass Casing/Well Diameter (", whole no.): 2
Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe ~~Above ground monument~~ Flush mount
Sample Location: MW7-90
Begin Purge: Date/Time 9/17/19, 15:23 Casing Volume (gal): 13.1
End Purge: Date/Time 9/17/19, 16:00 Purge Volume (gal): 39.3
Total Depth of Well (ft. below top of well casing) 92.7
Casing Volume Calculation: (92.7 - 15.83)(0.17) =

VOLUME OF SCHEDULE 40 PVC PIPE

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/ln ft)	Wt. Water (lbs/ln ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Purge Water Disposal to: [x] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Comments/Observations
13.1	14.05	285	1.65	7.56	134.9	9.15	15.90	ND	
26.2	13.96	299	2.34	7.68	123.4	3.45	15.91	ND	
39.3	14.00	300	2.35	7.69	121.7	3.60	15.91	ND	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type Sub-Pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [ ] Polyethylene [x] Dedicated [ ] Other
Decon Procedure [x] Liquinox Wash [ ] Tap Rinse [x] DI Water [x] Dedicated [ ] Other
Sample Description (color, turbidity, odor, sheen, etc.): Clear, colorless, no odor or sheen

Containers	ANALYSIS	Preservative
2	8270D SIM PAH	None
4	4500 WAD cyanide	NaOH
4	Total Metals (As) (Hg)	HNO3
2	Dissolved Metals (As)	Lab Filtered
2	Total Sulfide	NaOH, ZN Acetate

Duplicate Sample No(s): MW20-60-091719 (10:20)
Comments:

Signature: Date 9/17/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT September 2019 GW Sampling

SAMPLE NO. ATC-7-20-091719
DATE COLLECTED 9/17/19 TIME 17:55
WEATHER 18°C / Overcast COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 18.40 Time: 17:30 Meas. From: [ ] Top of Protective Casing [x] Top of Well Casing
Well Casing Type: [x] PVC [ ] Stainless Steel [ ] Fiberglass Casing/Well Diameter (", whole no.): 2
Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe Above ground monument
Sample Location: ATC7-20
Begin Purge: Date/Time 9/17/19, 17:31 Casing Volume (gal): 0.7
End Purge: Date/Time 9/17/19 Purge Volume (gal): 2.1
Total Depth of Well (ft. below top of well casing) 22.3
Casing Volume Calculation (22.3 - 18.40 X0.17) = 0.7 gal

VOLUME OF SCHEDULE 40 PVC PIPE

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/ln ft)	Wt. Water (lbs/ln ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Purge Water Disposal to: [x] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Comments/Observations
0.7	12.79	453	7.38	7.54	19.7	4.77	18.39	ND	
1.4	12.72	452	7.71	7.50	51.2	2.42	18.39	ND	
2.1	12.69	450	7.74	7.49	63.3	3.59	18.39	ND	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri-pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [ ] Polyethylene [x] Dedicated [ ] Other
Decon Procedure: [x] Liquinox Wash [ ] Tap Rinse [x] DI Water [x] Dedicated [ ] Other
Sample Description (color, turbidity, odor, sheen, etc.): Clear, colorless, no odor or sheen

Containers	ANALYSIS	Preservative
3	8270D SIM PAH	None
6	4500 WAD cyanide	NaOH
6	Total Metals (As) (Hg)	HNO3
3	Dissolved Metals (As)	Lab Filtered
3	Total Sulfide	NaOH, ZN Acetate

Duplicate Sample No(s): MS/ MSD
Comments:

Signature: [signature] Date 9/17/19

APPENDIX B

Laboratory Data Sheets and Chain-of-Custody Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-11862-1
Client Project/Site: Avista Hamilton St. Bridge

For:
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Attn: Mr. Ryan Reich

Authorized for release by:
10/28/2019 4:34:03 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@testamericainc.com

Table of Contents

Case Narrative

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Job ID: 590-11862-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Receipt
The samples were received on 9/18/2019 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 245.1: The matrix spike (MS) recoveries for preparation batch 590-24183 and analytical batch 590-24229 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 245.1: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 590-24183 and analytical batch 590-24229 was outside control limits. Sample matrix interference is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11862-1	MW-20-60-091719	Water	09/17/19 10:20	09/18/19 08:50	
590-11862-2	MW-4-20-091719	Water	09/17/19 11:30	09/18/19 08:50	
590-11862-3	MW-2-20-091719	Water	09/17/19 12:25	09/18/19 08:50	
590-11862-4	MW-2-40-091719	Water	09/17/19 14:10	09/18/19 08:50	
590-11862-5	MW-7-90-091719	Water	09/17/19 16:10	09/18/19 08:50	
590-11862-6	ATC-7-20-091719	Water	09/17/19 17:55	09/18/19 08:50	

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone: 509-924-9200 Fax: 509-924-9290

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Shane Kosth	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-5005-1427.1
Client Contact: Mr. Ryan Reich	Phone: 208-819-1965	E-Mail: randee.arrington@testamericainc.com		Page: Page 1 of 1
Company: Landau & Associates, Inc.				Job #:
Address: 10 North Post Street, Suite 218	Due Date Requested:			
City: Spokane	TAT Requested (days): Standard			
State, Zip: WA, 99201				
Phone: 509-995-1665(Tel)	PO #: Purchase Order not required			
Email: rreich@landauinc.com	WO #:			
Project Name: Avista Hamilton St. Bridge	Project #: 59000367			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other: ✗ No Sodium Thiosulfate added

Special Instructions/Note:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	4500_CN_I - Weak Acid Dissociable Cyanide	200.8_CWA_LL - Total Arsenic	200.8_CWA_LL - Dissolved Arsenic	8270D_SIM - Polycyclic Aromatic Hydrocarbons	245.1 - Mercury	SM4500_S2_D - Total Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	D	N	N	D	CB		
MW-20-60-041719	4/17/19	10:20		Water	M	N	X	X	X	X	X	X	6	As QL ⇒ 1ug/L
MW-4-20-041719		11:30		Water										Hg QL ⇒ 0.2 ug/L
MW-2-20-041719		12:25		Water										PAH QL ⇒ 0.1 ug/L
MW-2-90-041719		14:10		Water										Cyanide QL ⇒ 10 ug/L
MW-7-90-041719		16:10		Water										
ATC-7-20-041719		17:55		Water		Y							18	MS/MSD ✗
				Water										
				Water										
				Water										
				Water										
				Water										

590-11862 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: ✗ MS/MSD from ATC-7-20

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Shane Kosth	9/18/19 8:50	LAI	Maria Proctor	9/18/19 8:50	TASPO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6°C

Ver: 01/16/2019

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone: 509-924-9200 Fax: 509-924-9290

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4742.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 590-11862-1
Address: 4955 Yarrow Street.	Due Date Requested: 9/30/2019			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Avista Hamilton St. Bridge	Project #: 59000367			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	4500_CN_I/4500_CN_I_Prep (MOD) Cyanide, Weak Acid Dissociable	SM4500_S2_D/ Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-20-60-091719 (590-11862-1)	9/17/19	10:20 Pacific		Water			X	X	2	
MW-4-20-091719 (590-11862-2)	9/17/19	11:30 Pacific		Water			X	X	2	
MW-2-20-091719 (590-11862-3)	9/17/19	12:25 Pacific		Water			X	X	2	
MW-2-40-091719 (590-11862-4)	9/17/19	14:10 Pacific		Water			X	X	2	
MW-7-90-091719 (590-11862-5)	9/17/19	16:10 Pacific		Water			X	X	2	
ATC-7-20-091719 (590-11862-6)	9/17/19	17:55 Pacific		Water			X	X	2	
ATC-7-20-091719 (590-11862-6MS)	9/17/19	17:55 Pacific	MS	Water			X	X	2	
ATC-7-20-091719 (590-11862-6MSD)	9/17/19	17:55 Pacific	MSD	Water			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Maria Olvera	9/18/19 15:19	TAPO		9/19/19 0920	TAEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.1, TO, IR6, 56, 9/19/19

Ver: 01/16/2019

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone: 509-924-9200 Fax: 509-924-9290

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4740.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 590-11862-1
Address: 5755 8th Street East,	Due Date Requested: 9/30/2019			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	PO #:			
Email:	WO #:			
Project Name: Avista Hamilton St. Bridge	Project #: 59000367			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.8_CWA/200.8_P_TOT (MOD) Arsenic, Total	200.8_CWA/FILTRATION (MOD) Arsenic, Dissolved	Total Number of containers	Special Instructions/Note:
		Preservation Code:								
MW-20-60-091719 (590-11862-1)	9/17/19	10:20 Pacific		Water			X	X	2	
MW-4-20-091719 (590-11862-2)	9/17/19	11:30 Pacific		Water			X	X	2	
MW-2-20-091719 (590-11862-3)	9/17/19	12:25 Pacific		Water			X	X	2	
MW-2-40-091719 (590-11862-4)	9/17/19	14:10 Pacific		Water			X	X	2	
MW-7-90-091719 (590-11862-5)	9/17/19	16:10 Pacific		Water			X	X	2	
ATC-7-20-091719 (590-11862-6)	9/17/19	17:55 Pacific		Water			X	X	2	
ATC-7-20-091719 (590-11862-6MS)	9/17/19	17:55 Pacific	MS	Water			X	X	2	
ATC-7-20-091719 (590-11862-6MSD)	9/17/19	17:55 Pacific	MSD	Water			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Maria Gloor	9/18/19 14:[illegible]	TASA		9/19/19 0930	TASEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

IR6 = 1.8/1.2

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone: 509-924-9200 Fax: 509-924-9290

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4820.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 590-11862-1
Address: 5755 8th Street East,	Due Date Requested: 9/30/2019			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	PO #:			
Email:	WO #:			
Project Name: Avista Hamilton St. Bridge	Project #: 59000367			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	200.8_CWA/200.8_P_TOT (MOD) Arsenic, Total	200.8_CWA/FILTRATION (MOD) Arsenic, Dissolved	200.8_CWA/200.8_P_TOT (MOD) Arsenic, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-20-60-091719 (590-11862-1)	9/17/19	10:20 Pacific		Water			X	X	X	1	
MW-4-20-091719 (590-11862-2)	9/17/19	11:30 Pacific		Water			X	X	X	1	
MW-2-20-091719 (590-11862-3)	9/17/19	12:25 Pacific		Water			X	X	X	1	
MW-2-40-091719 (590-11862-4)	9/17/19	14:10 Pacific		Water			X	X	X	1	
MW-7-90-091719 (590-11862-5)	9/17/19	16:10 Pacific		Water			X	X	X	1	
ATC-7-20-091719 (590-11862-6)	9/17/19	17:55 Pacific		Water			X	X	X	1	
ATC-7-20-091719 (590-11862-6MS)	9/17/19	17:55 Pacific	MS	Water			X	X	X	1	
ATC-7-20-091719 (590-11862-6MSD)	9/17/19	17:55 Pacific	MSD	Water			X	X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Maria O'Toole	10/7/19 14:53	TASPO	Tom Blankenship	10/8/19 0940	TA Sea
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR6 10.3 / 9.8

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-11862-1

Login Number: 11862
List Number: 1
Creator: O'Toole, Maria C

List Source: Eurofins TestAmerica, Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-11862-1

Login Number: 11862
List Number: 3
Creator: Zimmerman, Steven M

List Source: Eurofins TestAmerica, Denver
List Creation: 09/19/19 07:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-11862-1

Login Number: 11862
List Number: 2
Creator: Blankinship, Tom X

List Source: Eurofins TestAmerica, Seattle
List Creation: 09/19/19 05:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Client Sample ID: MW-20-60-091719
Date Collected: 09/17/19 10:20
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
2-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
1-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Acenaphthylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Acenaphthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Fluorene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Phenanthrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Benzo[a]anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Chrysene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Benzo[b]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Benzo[k]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Benzo[a]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Indeno[1,2,3-cd]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Dibenz(a,h)anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1
Benzo[g,h,i]perylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*76*		*36 - 126*	*09/19/19 11:52*	*09/24/19 18:02*	*1*
2-Fluorobiphenyl (Surr)	*72*		*44 - 120*	*09/19/19 11:52*	*09/24/19 18:02*	*1*
p-Terphenyl-d14	*93*		*51 - 121*	*09/19/19 11:52*	*09/24/19 18:02*	*1*

Client Sample ID: MW-4-20-091719
Date Collected: 09/17/19 11:30
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
2-Methylnaphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
1-Methylnaphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Acenaphthylene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Acenaphthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Fluorene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Phenanthrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Benzo[a]anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Chrysene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Benzo[b]fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Benzo[k]fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Benzo[a]pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Indeno[1,2,3-cd]pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Dibenz(a,h)anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1
Benzo[g,h,i]perylene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*81*		*36 - 126*	*09/19/19 11:52*	*09/24/19 18:25*	*1*
2-Fluorobiphenyl (Surr)	*78*		*44 - 120*	*09/19/19 11:52*	*09/24/19 18:25*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: MW-4-20-091719
Date Collected: 09/17/19 11:30
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14	*96*		*51 - 121*	*09/19/19 11:52*	*09/24/19 18:25*	*1*

Client Sample ID: MW-2-20-091719
Date Collected: 09/17/19 12:25
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
2-Methylnaphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
1-Methylnaphthalene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Acenaphthylene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Acenaphthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Fluorene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Phenanthrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Benzo[a]anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Chrysene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Benzo[b]fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Benzo[k]fluoranthene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Benzo[a]pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Indeno[1,2,3-cd]pyrene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Dibenz(a,h)anthracene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1
Benzo[g,h,i]perylene	ND		0.085		ug/L		09/19/19 11:52	09/24/19 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	*82*		*36 - 126*	*09/19/19 11:52*	*09/24/19 18:49*	*1*
2-Fluorobiphenyl (Surr)	*76*		*44 - 120*	*09/19/19 11:52*	*09/24/19 18:49*	*1*
p-Terphenyl-d14	*95*		*51 - 121*	*09/19/19 11:52*	*09/24/19 18:49*	*1*

Client Sample ID: MW-2-40-091719
Date Collected: 09/17/19 14:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
2-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
1-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Acenaphthylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Acenaphthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Fluorene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Phenanthrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Benzo[a]anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Chrysene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Benzo[b]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Benzo[k]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Benzo[a]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Indeno[1,2,3-cd]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: MW-2-40-091719
Date Collected: 09/17/19 14:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1
Benzo[g,h,i]perylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*85*		*36 - 126*	*09/19/19 11:52*	*09/24/19 19:12*	*1*
2-Fluorobiphenyl (Surr)	*78*		*44 - 120*	*09/19/19 11:52*	*09/24/19 19:12*	*1*
p-Terphenyl-d14	*98*		*51 - 121*	*09/19/19 11:52*	*09/24/19 19:12*	*1*

Client Sample ID: MW-7-90-091719
Date Collected: 09/17/19 16:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
2-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
1-Methylnaphthalene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Acenaphthylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Acenaphthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Fluorene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Phenanthrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Benzo[a]anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Chrysene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Benzo[b]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Benzo[k]fluoranthene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Benzo[a]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Indeno[1,2,3-cd]pyrene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Dibenz(a,h)anthracene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1
Benzo[g,h,i]perylene	ND		0.084		ug/L		09/19/19 11:52	09/24/19 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*76*		*36 - 126*	*09/19/19 11:52*	*09/24/19 19:35*	*1*
2-Fluorobiphenyl (Surr)	*70*		*44 - 120*	*09/19/19 11:52*	*09/24/19 19:35*	*1*
p-Terphenyl-d14	*87*		*51 - 121*	*09/19/19 11:52*	*09/24/19 19:35*	*1*

Client Sample ID: ATC-7-20-091719
Date Collected: 09/17/19 17:55
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
2-Methylnaphthalene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
1-Methylnaphthalene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Acenaphthylene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Acenaphthene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Fluorene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Phenanthrene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Anthracene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Fluoranthene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Pyrene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: ATC-7-20-091719 — **Lab Sample ID: 590-11862-6**
Date Collected: 09/17/19 17:55 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Chrysene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Benzo[b]fluoranthene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Benzo[k]fluoranthene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Benzo[a]pyrene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Indeno[1,2,3-cd]pyrene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Dibenz(a,h)anthracene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1
Benzo[g,h,i]perylene	ND		0.083		ug/L		09/19/19 11:52	09/24/19 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*72*		*36 - 126*	*09/19/19 11:52*	*09/24/19 19:58*	*1*
2-Fluorobiphenyl (Surr)	*70*		*44 - 120*	*09/19/19 11:52*	*09/24/19 19:58*	*1*
p-Terphenyl-d14	*93*		*51 - 121*	*09/19/19 11:52*	*09/24/19 19:58*	*1*

Method: 200.8 - Metals (ICP/MS)

Client Sample ID: MW-20-60-091719 — **Lab Sample ID: 590-11862-1**
Date Collected: 09/17/19 10:20 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0037**		0.0010		mg/L		10/28/19 11:43	10/28/19 13:56	1

Client Sample ID: MW-4-20-091719 — **Lab Sample ID: 590-11862-2**
Date Collected: 09/17/19 11:30 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0024**		0.0010		mg/L		10/28/19 11:43	10/28/19 13:59	1

Client Sample ID: MW-2-20-091719 — **Lab Sample ID: 590-11862-3**
Date Collected: 09/17/19 12:25 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0018**		0.0010		mg/L		10/28/19 11:43	10/28/19 14:02	1

Client Sample ID: MW-2-40-091719 — **Lab Sample ID: 590-11862-4**
Date Collected: 09/17/19 14:10 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0011**		0.0010		mg/L		10/28/19 11:43	10/28/19 14:05	1

Client Sample ID: MW-7-90-091719 — **Lab Sample ID: 590-11862-5**
Date Collected: 09/17/19 16:10 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0042**		0.0010		mg/L		10/28/19 11:43	10/28/19 13:21	1

Client Sample ID: ATC-7-20-091719 — **Lab Sample ID: 590-11862-6**
Date Collected: 09/17/19 17:55 — **Matrix: Water**
Date Received: 09/18/19 08:50

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0041**		0.0010		mg/L		10/28/19 11:43	10/28/19 13:24	1

Method: 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-20-60-091719
Date Collected: 09/17/19 10:20
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0042		0.0010		mg/L		10/28/19 11:51	10/28/19 14:08	1

Client Sample ID: MW-4-20-091719
Date Collected: 09/17/19 11:30
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0025		0.0010		mg/L		10/28/19 11:51	10/28/19 14:10	1

Client Sample ID: MW-2-20-091719
Date Collected: 09/17/19 12:25
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0018		0.0010		mg/L		10/28/19 11:51	10/28/19 14:13	1

Client Sample ID: MW-2-40-091719
Date Collected: 09/17/19 14:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012		0.0010		mg/L		10/28/19 11:51	10/28/19 14:16	1

Client Sample ID: MW-7-90-091719
Date Collected: 09/17/19 16:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0042		0.0010		mg/L		10/28/19 11:51	10/28/19 14:19	1

Client Sample ID: ATC-7-20-091719
Date Collected: 09/17/19 17:55
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0041		0.0010		mg/L		10/28/19 11:51	10/28/19 14:34	1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: MW-20-60-091719
Date Collected: 09/17/19 10:20
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	F1 F2	0.20		ug/L		09/18/19 10:28	09/19/19 15:42	1

Client Sample ID: MW-4-20-091719
Date Collected: 09/17/19 11:30
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:28	09/19/19 15:51	1

Client Sample ID: MW-2-20-091719
Date Collected: 09/17/19 12:25
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:28	09/19/19 15:58	1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: MW-2-40-091719
Date Collected: 09/17/19 14:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:28	09/19/19 16:00	1

Client Sample ID: MW-7-90-091719
Date Collected: 09/17/19 16:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:28	09/19/19 16:03	1

Client Sample ID: ATC-7-20-091719
Date Collected: 09/17/19 17:55
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:28	09/19/19 16:05	1

General Chemistry

Client Sample ID: MW-20-60-091719
Date Collected: 09/17/19 10:20
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:13	09/25/19 16:00	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Client Sample ID: MW-4-20-091719
Date Collected: 09/17/19 11:30
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:13	09/25/19 16:02	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Client Sample ID: MW-2-20-091719
Date Collected: 09/17/19 12:25
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:14	09/25/19 16:04	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Client Sample ID: MW-2-40-091719
Date Collected: 09/17/19 14:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:14	09/25/19 16:16	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Client Sample ID: MW-7-90-091719
Date Collected: 09/17/19 16:10
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:14	09/25/19 16:18	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

General Chemistry

Client Sample ID: ATC-7-20-091719
Date Collected: 09/17/19 17:55
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:13	09/25/19 15:54	1
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 590-24220/1-A
Matrix: Water
Analysis Batch: 24289

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24220

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
2-Methylnaphthalene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
1-Methylnaphthalene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Acenaphthylene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Acenaphthene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Fluorene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Phenanthrene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Anthracene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Fluoranthene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Pyrene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Benzo[a]anthracene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Chrysene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Benzo[b]fluoranthene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Benzo[k]fluoranthene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Benzo[a]pyrene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Indeno[1,2,3-cd]pyrene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Dibenz(a,h)anthracene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1
Benzo[g,h,i]perylene	ND		0.090		ug/L		09/19/19 11:52	09/24/19 15:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*86*		*36 - 126*	*09/19/19 11:52*	*09/24/19 15:19*	*1*
2-Fluorobiphenyl (Surr)	*80*		*44 - 120*	*09/19/19 11:52*	*09/24/19 15:19*	*1*
p-Terphenyl-d14	*99*		*51 - 121*	*09/19/19 11:52*	*09/24/19 15:19*	*1*

Lab Sample ID: LCS 590-24220/2-A
Matrix: Water
Analysis Batch: 24289

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24220

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	1.60	1.22		ug/L		76	52 - 120
2-Methylnaphthalene	1.60	1.20		ug/L		75	44 - 120
1-Methylnaphthalene	1.60	1.22		ug/L		76	49 - 120
Acenaphthylene	1.60	1.27		ug/L		79	57 - 120
Acenaphthene	1.60	1.29		ug/L		81	54 - 120
Fluorene	1.60	1.30		ug/L		81	59 - 120
Phenanthrene	1.60	1.40		ug/L		87	57 - 120
Anthracene	1.60	1.42		ug/L		89	66 - 120
Fluoranthene	1.60	1.38		ug/L		86	64 - 120
Pyrene	1.60	1.43		ug/L		90	52 - 120
Benzo[a]anthracene	1.60	1.35		ug/L		84	68 - 120
Chrysene	1.60	1.42		ug/L		89	69 - 120
Benzo[b]fluoranthene	1.60	1.31		ug/L		82	63 - 120
Benzo[k]fluoranthene	1.60	1.39		ug/L		87	67 - 120
Benzo[a]pyrene	1.60	1.33		ug/L		83	70 - 120
Indeno[1,2,3-cd]pyrene	1.60	1.40		ug/L		87	58 - 120
Dibenz(a,h)anthracene	1.60	1.41		ug/L		88	58 - 120
Benzo[g,h,i]perylene	1.60	1.42		ug/L		89	56 - 120

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 590-24220/2-A
Matrix: Water
Analysis Batch: 24289

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24220

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	*86*		*36 - 126*
2-Fluorobiphenyl (Surr)	*80*		*44 - 120*
p-Terphenyl-d14	*91*		*51 - 121*

Lab Sample ID: LCSD 590-24220/3-A
Matrix: Water
Analysis Batch: 24289

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24220

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			1.60	1.18		ug/L		74	52 - 120	3	30
2-Methylnaphthalene			1.60	1.17		ug/L		73	44 - 120	2	35
1-Methylnaphthalene			1.60	1.19		ug/L		74	49 - 120	3	35
Acenaphthylene			1.60	1.27		ug/L		79	57 - 120	0	30
Acenaphthene			1.60	1.31		ug/L		82	54 - 120	1	30
Fluorene			1.60	1.36		ug/L		85	59 - 120	5	30
Phenanthrene			1.60	1.44		ug/L		90	57 - 120	3	30
Anthracene			1.60	1.46		ug/L		91	66 - 120	3	30
Fluoranthene			1.60	1.42		ug/L		89	64 - 120	3	30
Pyrene			1.60	1.50		ug/L		94	52 - 120	4	30
Benzo[a]anthracene			1.60	1.41		ug/L		88	68 - 120	4	30
Chrysene			1.60	1.48		ug/L		92	69 - 120	4	24
Benzo[b]fluoranthene			1.60	1.35		ug/L		85	63 - 120	3	30
Benzo[k]fluoranthene			1.60	1.46		ug/L		91	67 - 120	5	30
Benzo[a]pyrene			1.60	1.39		ug/L		87	70 - 120	5	30
Indeno[1,2,3-cd]pyrene			1.60	1.46		ug/L		91	58 - 120	4	30
Dibenz(a,h)anthracene			1.60	1.45		ug/L		91	58 - 120	3	30
Benzo[g,h,i]perylene			1.60	1.48		ug/L		92	56 - 120	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5	*84*		*36 - 126*
2-Fluorobiphenyl (Surr)	*78*		*44 - 120*
p-Terphenyl-d14	*93*		*51 - 121*

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 24289

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 24220

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	ND		1.50	1.12		ug/L		74	52 - 120
2-Methylnaphthalene	ND		1.50	1.07		ug/L		71	44 - 120
1-Methylnaphthalene	ND		1.50	1.13		ug/L		75	49 - 120
Acenaphthylene	ND		1.50	1.16		ug/L		77	57 - 120
Acenaphthene	ND		1.50	1.19		ug/L		79	54 - 120
Fluorene	ND		1.50	1.20		ug/L		80	59 - 120
Phenanthrene	ND		1.50	1.30		ug/L		86	57 - 120
Anthracene	ND		1.50	1.32		ug/L		88	66 - 120
Fluoranthene	ND		1.50	1.32		ug/L		87	64 - 120
Pyrene	ND		1.50	1.41		ug/L		94	52 - 120

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 24289

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 24220

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	ND		1.50	1.34		ug/L		89	68 - 120
Chrysene	ND		1.50	1.41		ug/L		94	69 - 120
Benzo[b]fluoranthene	ND		1.50	1.32		ug/L		88	63 - 120
Benzo[k]fluoranthene	ND		1.50	1.35		ug/L		90	67 - 120
Benzo[a]pyrene	ND		1.50	1.31		ug/L		87	70 - 120
Indeno[1,2,3-cd]pyrene	ND		1.50	1.37		ug/L		91	58 - 120
Dibenz(a,h)anthracene	ND		1.50	1.37		ug/L		91	58 - 120
Benzo[g,h,i]perylene	ND		1.50	1.39		ug/L		92	56 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5	*90*		*36 - 126*
2-Fluorobiphenyl (Surr)	*80*		*44 - 120*
p-Terphenyl-d14	*99*		*51 - 121*

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 24326

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 24220

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	ND		1.48	1.11		ug/L		75	52 - 120	1	30
2-Methylnaphthalene	ND		1.48	1.07		ug/L		72	44 - 120	0	35
1-Methylnaphthalene	ND		1.48	1.11		ug/L		75	49 - 120	2	35
Acenaphthylene	ND		1.48	1.16		ug/L		78	57 - 120	0	30
Acenaphthene	ND		1.48	1.19		ug/L		81	54 - 120	0	30
Fluorene	ND		1.48	1.23		ug/L		83	59 - 120	3	30
Phenanthrene	ND		1.48	1.30		ug/L		88	57 - 120	0	30
Anthracene	ND		1.48	1.26		ug/L		86	66 - 120	5	30
Fluoranthene	ND		1.48	1.31		ug/L		89	64 - 120	0	30
Pyrene	ND		1.48	1.39		ug/L		94	52 - 120	1	30
Benzo[a]anthracene	ND		1.48	1.34		ug/L		91	68 - 120	0	30
Chrysene	ND		1.48	1.41		ug/L		95	69 - 120	0	24
Benzo[b]fluoranthene	ND		1.48	1.40		ug/L		94	63 - 120	6	30
Benzo[k]fluoranthene	ND		1.48	1.33		ug/L		90	67 - 120	2	30
Benzo[a]pyrene	ND		1.48	1.32		ug/L		89	70 - 120	0	30
Indeno[1,2,3-cd]pyrene	ND		1.48	1.38		ug/L		94	58 - 120	1	30
Dibenz(a,h)anthracene	ND		1.48	1.40		ug/L		95	58 - 120	3	30
Benzo[g,h,i]perylene	ND		1.48	1.41		ug/L		95	56 - 120	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5	*92*		*36 - 126*
2-Fluorobiphenyl (Surr)	*81*		*44 - 120*
p-Terphenyl-d14	*100*		*51 - 121*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 580-313750/14-A
Matrix: Water
Analysis Batch: 313980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313750

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/09/19 11:39	10/10/19 20:49	1

Lab Sample ID: MB 580-315286/10-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315286

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/28/19 11:43	10/28/19 13:18	1

Lab Sample ID: LCS 580-315286/11-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315286

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1.00	1.02		mg/L		102	85 - 115		

Lab Sample ID: LCSD 580-315286/12-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315286

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			1.00	1.03		mg/L		103	85 - 115	1	20

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 315286

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	0.0041		1.00	0.897		mg/L		89	70 - 130		

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 315286

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0041		1.00	0.976		mg/L		97	70 - 130	8	20

Lab Sample ID: 590-11862-6 DU
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 315286

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Arsenic	0.0041			0.00428		mg/L				4	20

Lab Sample ID: MB 580-315287/10-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315287

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/28/19 11:51	10/28/19 14:31	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: LCS 580-315287/11-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315287

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.04		mg/L		104	85 - 115

Lab Sample ID: LCSD 580-315287/12-A
Matrix: Water
Analysis Batch: 315330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315287

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	1.03		mg/L		103	85 - 115	1	20

Lab Sample ID: MB 580-312618/20-B
Matrix: Water
Analysis Batch: 313536

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 312853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010		mg/L		10/01/19 09:42	10/04/19 16:40	1

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Dissolved
Prep Batch: 315287

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0041		1.00	0.958		mg/L		95	70 - 130

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Dissolved
Prep Batch: 315287

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0041		1.00	0.945		mg/L		94	70 - 130	1	20

Lab Sample ID: 590-11862-6 DU
Matrix: Water
Analysis Batch: 315330

Client Sample ID: ATC-7-20-091719
Prep Type: Dissolved
Prep Batch: 315287

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.0041		0.00409		mg/L		0.1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 590-24183/9-A
Matrix: Water
Analysis Batch: 24229

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24183

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		09/18/19 10:27	09/19/19 15:33	1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 590-24183/8-A
Matrix: Water
Analysis Batch: 24229

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24183

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg			2.00	1.98		ug/L		99	85 - 115		

Lab Sample ID: 590-11862-1 MS
Matrix: Water
Analysis Batch: 24229

Client Sample ID: MW-20-60-091719
Prep Type: Total/NA
Prep Batch: 24183

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg	ND	F1 F2	2.00	0.499	F1	ug/L		25	70 - 130		

Lab Sample ID: 590-11862-1 MSD
Matrix: Water
Analysis Batch: 24229

Client Sample ID: MW-20-60-091719
Prep Type: Total/NA
Prep Batch: 24183

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND	F1 F2	2.00	2.05	F2	ug/L		103	70 - 130	122	20

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 24229

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 24183

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg	ND		2.00	2.37		ug/L		119	70 - 130		

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 24229

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 24183

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		2.00	2.29		ug/L		115	70 - 130	3	20

Lab Sample ID: 590-11862-1 DU
Matrix: Water
Analysis Batch: 24229

Client Sample ID: MW-20-60-091719
Prep Type: Total/NA
Prep Batch: 24183

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Hg	ND	F1 F2		ND		ug/L				NC	20

Method: SM 4500 CN I - Cyanide, Weak Acid Dissociable

Lab Sample ID: MB 280-471767/4-A
Matrix: Water
Analysis Batch: 471920

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471767

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		0.010		mg/L		09/24/19 17:13	09/25/19 15:52	1

Method: SM 4500 CN I - Cyanide, Weak Acid Dissociable (Continued)

Lab Sample ID: HLCS 280-471767/1-A
Matrix: Water
Analysis Batch: 471920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471767

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Weak Acid Dissociable	0.350	0.346		mg/L		99	75 - 120

Lab Sample ID: LCS 280-471767/3-A
Matrix: Water
Analysis Batch: 471920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Weak Acid Dissociable	0.100	0.0919		mg/L		92	75 - 120

Lab Sample ID: LLCS 280-471767/2-A
Matrix: Water
Analysis Batch: 471920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471767

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Weak Acid Dissociable	0.100	0.101		mg/L		101	75 - 120

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 471920

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 471767

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Weak Acid Dissociable	ND		0.100	0.0998		mg/L		100	75 - 120

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 471920

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA
Prep Batch: 471767

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Weak Acid Dissociable	ND		0.100	0.102		mg/L		102	75 - 120	2	20

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 280-471483/11
Matrix: Water
Analysis Batch: 471483

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050		mg/L			09/21/19 13:33	1

Lab Sample ID: LCS 280-471483/9
Matrix: Water
Analysis Batch: 471483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.464	0.537		mg/L		116	81 - 122

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Method: SM 4500 S2 D - Sulfide, Total (Continued)

Lab Sample ID: LCSD 280-471483/10
Matrix: Water
Analysis Batch: 471483

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			0.464	0.536		mg/L		115	81 - 122	0	10

Lab Sample ID: 590-11862-6 MS
Matrix: Water
Analysis Batch: 471483

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	ND		0.464	0.519		mg/L		112	81 - 122		

Lab Sample ID: 590-11862-6 MSD
Matrix: Water
Analysis Batch: 471483

Client Sample ID: ATC-7-20-091719
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		0.464	0.485		mg/L		105	81 - 122	7	10

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Client Sample ID: MW-20-60-091719

Lab Sample ID: 590-11862-1

Date Collected: 09/17/19 10:20

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 18:02	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:08	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 13:56	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 15:42	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:13	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 16:00	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Client Sample ID: MW-4-20-091719

Lab Sample ID: 590-11862-2

Date Collected: 09/17/19 11:30

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 18:25	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:10	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 13:59	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 15:51	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:13	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 16:02	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Client Sample ID: MW-2-20-091719

Lab Sample ID: 590-11862-3

Date Collected: 09/17/19 12:25

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 18:49	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:13	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 14:02	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 15:58	JSP	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Client Sample ID: MW-2-20-091719

Lab Sample ID: 590-11862-3

Date Collected: 09/17/19 12:25

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:14	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 16:04	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Client Sample ID: MW-2-40-091719

Lab Sample ID: 590-11862-4

Date Collected: 09/17/19 14:10

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 19:12	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:16	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 14:05	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 16:00	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:14	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 16:16	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Client Sample ID: MW-7-90-091719

Lab Sample ID: 590-11862-5

Date Collected: 09/17/19 16:10

Matrix: Water

Date Received: 09/18/19 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 19:35	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:19	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 13:21	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 16:03	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:14	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 16:18	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Client Sample ID: ATC-7-20-091719

Date Collected: 09/17/19 17:55
Date Received: 09/18/19 08:50

Lab Sample ID: 590-11862-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			24220	09/19/19 11:52	AMB	TAL SPK
Total/NA	Analysis	8270D SIM		1	24289	09/24/19 19:58	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			312618	09/28/19 10:24	A1B	TAL SEA
Dissolved	Prep	200.8			315287	10/28/19 11:51	A1B	TAL SEA
Dissolved	Analysis	200.8		1	315330	10/28/19 14:34	FCW	TAL SEA
Total/NA	Prep	200.8			315286	10/28/19 11:43	A1B	TAL SEA
Total/NA	Analysis	200.8		1	315330	10/28/19 13:24	FCW	TAL SEA
Total/NA	Prep	245.1			24183	09/18/19 10:28	SJK	TAL SPK
Total/NA	Analysis	245.1		1	24229	09/19/19 16:05	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			471767	09/24/19 17:13	CKB	TAL DEN
Total/NA	Analysis	SM 4500 CN I		1	471920	09/25/19 15:54	JAM	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	471483	09/21/19 13:33	JLA	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 590-11862-1
Project/Site: Avista Hamilton St. Bridge

Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-19
A2LA	ISO/IEC 17025	2907.01	10-31-19
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	01-08-20
Arizona	State	AZ0713	12-20-19
Arkansas DEQ	State	19-047-0	06-01-20
California	State	2513	01-08-20
Connecticut	State	PH-0686	09-30-20
Florida	NELAP	E87667-57	06-30-20
Georgia	State	4025-011	01-08-20
Georgia	State Program	N/A	01-08-20
Illinois	NELAP	2000172019-1	04-30-20
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-20
Louisiana	NELAP	30785	06-30-20
Maine	State	2019011 (231)	03-03-21
Maine	State Program	CO0002	03-03-21
Minnesota	NELAP	1545373	12-31-19
Nevada	State	CO000262020-1	07-31-20
New Hampshire	NELAP	205310	04-28-20
New Hampshire	NELAP	205319	04-28-20
New Jersey	NELAP	190002	06-30-20
New York	NELAP	59923	04-01-20
North Carolina (WW/SW)	State	<cert No.>	12-31-19
North Carolina (WW/SW)	State Program	358	12-31-19
North Dakota	State	R-034	01-08-20
Oregon	NELAP	4025-011	01-08-20
Pennsylvania	NELAP	013	08-01-20
South Carolina	State	72002001	01-08-20
South Carolina	State Program	72002001	01-08-20
Texas	NELAP	T104704183-19-17	09-30-19
US Fish & Wildlife	Federal		07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal		03-26-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	CO000262019-11	07-31-20
Virginia	NELAP	10490	06-14-20
Washington	State	C583-19	08-05-20
West Virginia DEP	State	354	11-30-19
West Virginia DEP	State Program	354	11-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 590-11862-1
Project/Site: Avista Hamilton St. Bridge

Laboratory: Eurofins TestAmerica, Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999615430	08-31-20
Wyoming (UST)	A2LA	2907.01	10-31-19
Wyoming (UST)	A2LA	2907.01	10-31-21

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Avista Hamilton St. Bridge

Job ID: 590-11862-1

Method	Method Description	Protocol	Laboratory
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SPK
200.8	Metals (ICP/MS)	EPA	TAL SEA
245.1	Mercury (CVAA)	EPA	TAL SPK
SM 4500 CN I	Cyanide, Weak Acid Dissociable	SM	TAL DEN
SM 4500 S2 D	Sulfide, Total	SM	TAL DEN
200.8	Preparation, Total Metals	EPA	TAL SEA
245.1	Preparation, Mercury	EPA	TAL SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
FILTRATION	Sample Filtration	None	TAL SEA
SM 4500 CN I	Cyanide, Distillation for Weak Acid Dissociable	SM	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: LANDAU ASSOCIATES, INC.
Address: 10 N POST, SUITE 218
SPOKANE, WA 99201
Attn: RYAN REICH

Batch #: 190918074
Project Name: H58 0236042

Analytical Results Report

Sample Number 190918074-001 **Sampling Date** 9/17/2019 **Date/Time Received** 9/18/2019 9:30 AM
Client Sample ID MW-20-60-091719 **Sampling Time** 10:20 AM **Extraction Date**
Matrix Water **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:38:00 AM	TLM	SM4500CNI	

Sample Number 190918074-002 **Sampling Date** 9/17/2019 **Date/Time Received** 9/18/2019 9:30 AM
Client Sample ID MW-4-20-091719 **Sampling Time** 11:30 AM **Extraction Date**
Matrix Water **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:38:00 AM	TLM	SM4500CNI	

Sample Number 190918074-003 **Sampling Date** 9/17/2019 **Date/Time Received** 9/18/2019 9:30 AM
Client Sample ID MW-2-20-091719 **Sampling Time** 12:25 PM **Extraction Date**
Matrix Water **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:40:00 AM	TLM	SM4500CNI	

Sample Number 190918074-004 **Sampling Date** 9/17/2019 **Date/Time Received** 9/18/2019 9:30 AM
Client Sample ID MW-2-40-091719 **Sampling Time** 2:10 PM **Extraction Date**
Matrix Water **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:41:00 AM	TLM	SM4500CNI	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: LANDAU ASSOCIATES, INC.
Address: 10 N POST, SUITE 218
SPOKANE, WA 99201
Attn: RYAN REICH

Batch #: 190918074
Project Name: H58 0236042

Analytical Results Report

Sample Number	190918074-005	**Sampling Date**	9/17/2019	**Date/Time Received**	9/18/2019	9:30 AM
Client Sample ID	MW-7-90-091719	**Sampling Time**	4:10 PM	**Extraction Date**		
Matrix	Water	**Sample Location**				
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:42:00 AM	TLM	SM4500CNI	

Sample Number	190918074-006	**Sampling Date**	9/17/2019	**Date/Time Received**	9/18/2019	9:30 AM
Client Sample ID	ATC-7-20-091719	**Sampling Time**	5:53 PM	**Extraction Date**		
Matrix	Water	**Sample Location**				
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (wad)	ND	mg/L	0.01	10/1/2019 9:43:00 AM	TLM	SM4500CNI	

Authorized Signature

Kathleen A. Sattler

Kathleen A. Sattler, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Client: LANDAU ASSOCIATES, INC.
Address: 10 N POST, SUITE 218
SPOKANE, WA 99201
Attn: RYAN REICH

Batch #: 190918074
Project Name: H58 0236042

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide (wad)	0.101	mg/L	0.1	101.0	80-120	10/1/2019	10/1/2019

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
190918074-006	Cyanide (wad)	ND	0.0837	mg/L	0.1	83.7	80-120	10/1/2019	10/1/2019

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (wad)	0.0830	mg/L	0.1	83.0	0.8	0-25	10/1/2019	10/1/2019

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (wad)	ND	mg/L	0.01	10/1/2019	10/1/2019

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Login Report

Customer Name: LANDAU ASSOCIATES, INC.
10 N POST, SUITE 218
SPOKANE WA 99201

Order ID: 190918074
Order Date: 9/18/2019

Contact Name: RYAN REICH

Project Name: H58 0236042

Comment:

Sample #: 190918074-001 **Customer Sample #:** MW-20-60-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 10:20 AM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Sample #: 190918074-002 **Customer Sample #:** MW-4-20-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 11:30 AM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Sample #: 190918074-003 **Customer Sample #:** MW-2-20-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 12:25 PM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Customer Name: LANDAU ASSOCIATES, INC.
10 N POST, SUITE 218
SPOKANE WA 99201

Order ID: 190918074
Order Date: 9/18/2019

Contact Name: RYAN REICH

Project Name: H58 0236042

Comment:

Sample #: 190918074-004 **Customer Sample #:** MW-2-40-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 2:10 PM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Sample #: 190918074-005 **Customer Sample #:** MW-7-90-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 4:10 PM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Sample #: 190918074-006 **Customer Sample #:** ATC-7-20-091719

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 5:53 PM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Sample #: 190918074-006A **Customer Sample #:** ATC-7-20-091719MS

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019
Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 5:53 PM
Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

Customer Name: LANDAU ASSOCIATES, INC.
10 N POST, SUITE 218
SPOKANE WA 99201

Order ID: 190918074
Order Date: 9/18/2019

Contact Name: RYAN REICH

Project Name: H58 0236042

Comment:

Sample #: 190918074-006B **Customer Sample #:** ATC-7-20-091719MSD

Recv'd: ☑ **Matrix:** Water **Collector:** SHANE KOSTKU **Date Collected:** 9/17/2019

Quantity: 1 **Date Received:** 9/18/2019 9:30:00 AM **Time Collected:** 5:53 PM

Comment:

Test	Lab	Method	Due Date	Priority
CYANIDE WAD	S	SM4500CNI	9/30/2019	***Normal (~10 Days)***

SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature of the sample(s)? (°C)	5.5
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Labels and chain agree?	Yes
Total number of containers?	8

190918 074 **LAND** Last Due 9/30/2019
1st SAMP 9/17/2019 1st RCVD 9/18/2019
F 58 0236042

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Company Name: Landau Assc.	Project Manager: Ryan Reich
Address: 10 N. Post St. Ste 218	Project Name & #: HSB 0236042
City: Spokane State: WA Zip: 99201	Email Address: RReich@LandauInc.com
Phone: 509-327-9737	Purchase Order #: 0236042
Fax:	Sampler Name & phone: Shane Kostka 208-819-1965

Turn Around Time & Reporting

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__ Next Day*
__ 2nd Day*
__ Other*_____

*All rush order requests must be prior approved.

__ Phone
__ Mail
__ Fax
X Email

Provide Sample Description

List Analyses Requested

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	~~SM4500 S2- D Total Sulfide~~	4500 CD WAD Cyanide NaOH	
	MW-20-60-091714	9/17/14, 10:20	W	1			X	
	MW-4-20-091714	11:30						
	MW-2-20-091714	12:25						
	MW-2-40-091714	14:10						
	MW-7-90-091714	16:10						
	ATC-7-20-091714	17:55		3				

Note Special Instructions/Comments

SWBS

Cyanide QL ⇒ 10 µg/L

MS/MSD X

Inspection Checklist

Received Intact?	(Y)	N
Labels & Chains Agree?	(Y)	N
Containers Sealed?	(Y)	N
VOC Head Space?	Y	N

hd/Coolwice

Temperature (°C): 5.5° dig-04
Preservative: NaOH P16204-3711
pH P18285-300
Date & Time: 9-18-19 1640
Inspected By: WK

	Printed Name	Signature	Company	Date	Time
Relinquished by	Shane Kostka		LAI	9/18/19	9:30
Received by	KScott		anatek	9/18/19	0930
Relinquished by					
Received by					
Relinquished by					
Received by					