Semiannual Monitoring Report
March 7, 2019 Sampling Event
Hamilton Street Bridge Site
Spokane, Washington

June 5, 2019

Prepared for

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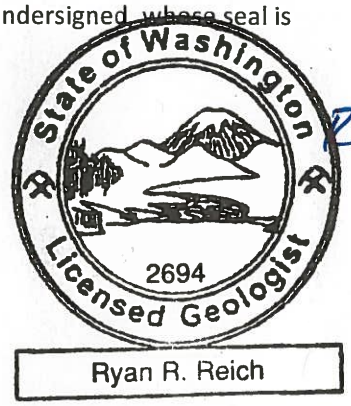

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LIST OF ABBREVIATIONS AND ACRONYMS

Avista ..... Avista Corporation
BNSF ..... BNSF Railway Company
CMP ..... compliance monitoring plan
cPAH ..... carcinogenic polycyclic aromatic hydrocarbon
Ecology ..... Washington State Department of Ecology
EPA ..... U.S. Environmental Protection Agency
ft ..... foot/feet
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
RPD ..... relative percent difference
SIM ..... selected ion monitoring
WAD ..... weak acid dissociable cyanide

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1.0 INTRODUCTION

On behalf of the Avista Corporation (Avista) and BNSF Railway Company (BNSF), Landau Associates, Inc. has prepared this semiannual report, summarizing the results of the first quarter 2019 compliance monitoring event 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 cyanide (WAD), 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, MW2-20, MW4-20, MW8-20, and MW9-20 and deep monitoring wells MW7-90, MW8-90, and MW9-100. 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 MW2-20, MW2-40, MW4-20, MW7-90, 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 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 field screening for chlorine and sulfide in monitoring wells MW2-20, MW2-40, MW4-20, MW7-90, and ATC7-20. Ecology also recommended that groundwater samples collected from the wells be submitted to an analytical laboratory for sulfide testing. Chorine and sulfide in groundwater have been suspected sources of matrix inference in previous cyanide analysis (Ecology 2018). Ecology will evaluate the need for further chlorine and sulfide screening based on the results of sulfide analysis and field screening completed during the first quarter 2019 and second quarter 2019 monitoring events.

2.1 Investigation Methods

On March 7, 2019, depth-to-groundwater was measured at select shallow and deep monitoring wells 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). Water levels were recorded on a field data sheet, and depth-to-groundwater data were combined with well elevation data to determine groundwater elevations in each well.

Semiannual groundwater samples were collected from monitoring wells MW2-20, MW2-40, MW4-20, MW7-90, and ATC7-20, and submitted for chemical analysis, per the CMP. During this event, samples were also collected for sulfide analysis. For quality assurance, a duplicate sample (MW20-60) was collected from monitoring well MW7-90, and matrix spike/matrix spike duplicate (MS/MSD) samples were collected from monitoring well ATC7-20, and submitted for chemical analysis.

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. LaMotte test strips and lead acetate test strips, respectively, were used to field screen purged groundwater for chlorine and 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.

Groundwater samples were collected in containers supplied by the analytical laboratory. 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 TestAmerica Laboratories, Inc. in Spokane, Washington. All samples were analyzed for PAHs/cPAHs using U.S. 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.

3.0 MONITORING RESULTS

3.1 Groundwater Elevation

The March 7, 2019 depth-to-groundwater measurements and calculated groundwater elevations are presented in Table 1. Groundwater elevations in monitoring wells ATC7-20, MW2-20, MW4-20, MW8-20, and MW9-20 and deep monitoring wells MW7-90, MW8-90, and MW9-100 ranged from 1,869.98 ft (ATC07-20) to 1,871.59 (MW09-20) ft. Groundwater elevations in all wells were below the river stage elevation (1,872.26 ft) recorded on March 7, 2019.

3.2 Field Screening – Sulfide and Chlorine

Based on the colorimetric response of sulfide and chlorine test strips, these constituents were not present in the groundwater samples collected. The results of sulfide and chlorine field screening are presented in Table 2.

3.3 Groundwater Analytical Results

All groundwater samples were received by the laboratory in good condition, and were prepared and analyzed within allowable holding times. LAI completed a data quality evaluation of the laboratory analytical results. All data, except for the sulfide result for the samples collected from monitoring well ATC7-20, were deemed acceptable for project use without qualification. The sample spike recoveries for sulfide in the matrix spike MS/MSD samples collected from monitoring well ATC7-20 were zero; therefore, the sulfide result (undetected) in the associated sample from monitoring well ATC7-20 was rejected.

In the samples collected from monitoring well ATC7-20 for WAD cyanide analysis, MS recovery was above the laboratory control limits, and MSD recovery was below the laboratory control limits. The MS/MSD relative percent difference (RPD) was greater than the control limit. There was no detection of WAD cyanide in the associated sample from monitoring well ATC7-20 (ATC7-20-030719), which was flagged as “estimated” (UJ). The RPD for WAD cyanide in the sample and field duplicate sample collected from monitoring well MW7-90 exceeded the control limits; both results were flagged as “estimated” (J or UJ).

A copy of the laboratory analytical report is 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 0.0014 milligrams per liter (mg/L; MW2-20 and MW2-40) to 0.0051 mg/L (ATC7-20). 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 0.0014 mg/L (MW2-40) to 0.0050 (ATC7-20). None of the reported concentrations exceeded the 0.006-mg/L site cleanup level.

- **WAD cyanide.** WAD cyanide was reported above the RL in groundwater samples collected from monitoring wells MW2-20 (0.022 mg/L), MW2-40 (0.011 mg/L), and MW7-90 (0.027 J mg/L). All of the detections exceeded the site cleanup level (0.01 mg/L).
- **PAHs.** PAH compounds phenanthrene and fluoranthrene were reported above the RL in the groundwater sample from MW7-90 at 0.13 and 0.087 micrograms per liter (µg/L), respectively. There is no site cleanup level for phenanthrene and the concentration of fluoranthene is below the site cleanup level (90.2 µg/L). No detections of cPAH compounds were reported.
- **Sulfide.** No detections of total sulfide were reported. As noted, the sulfide result reported for monitoring well ATC7-20 was rejected.
- **Mercury.** No detections of total mercury were reported.

3.4 Summary

Total and dissolved arsenic were detected above the RL in all groundwater samples, but none of the detections exceeded the site cleanup level. Cyanide concentrations in groundwater samples from monitoring wells MW2-20 (0.022 mg/L), MW2-40 (0.011 mg/L), and MW7-90 (0.027 J mg/L) exceeded the site cleanup level of 0.01 mg/L.

No detections of mercury or cPAHs were reported.

Because there was no sulfide spike recovery in the MS/MSD samples collected from monitoring well ATC7-20, the result for sulfide (non-detected) in the associated sample from well ATC7-20 was rejected.

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 Landau Associates, Inc. (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.

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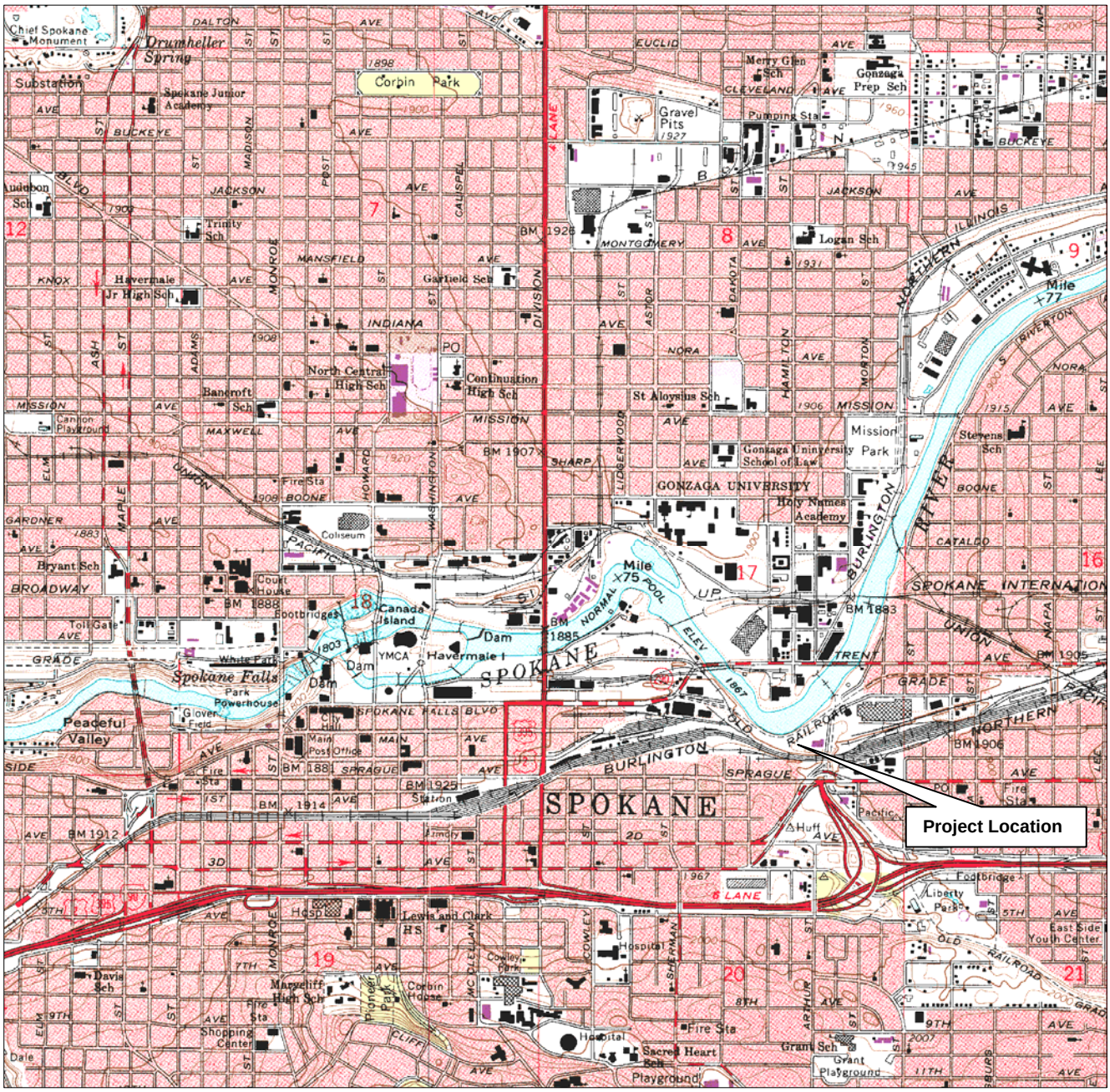
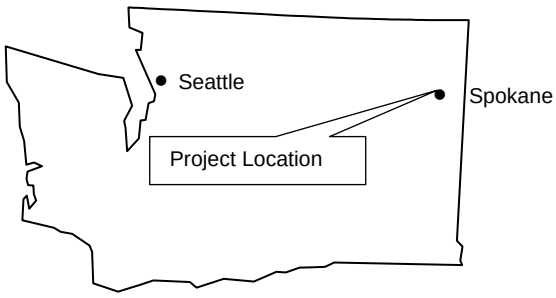


Source: USGS Spokane NW, WA Quad, 1974; PR 1986. Scale 1:24,000



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

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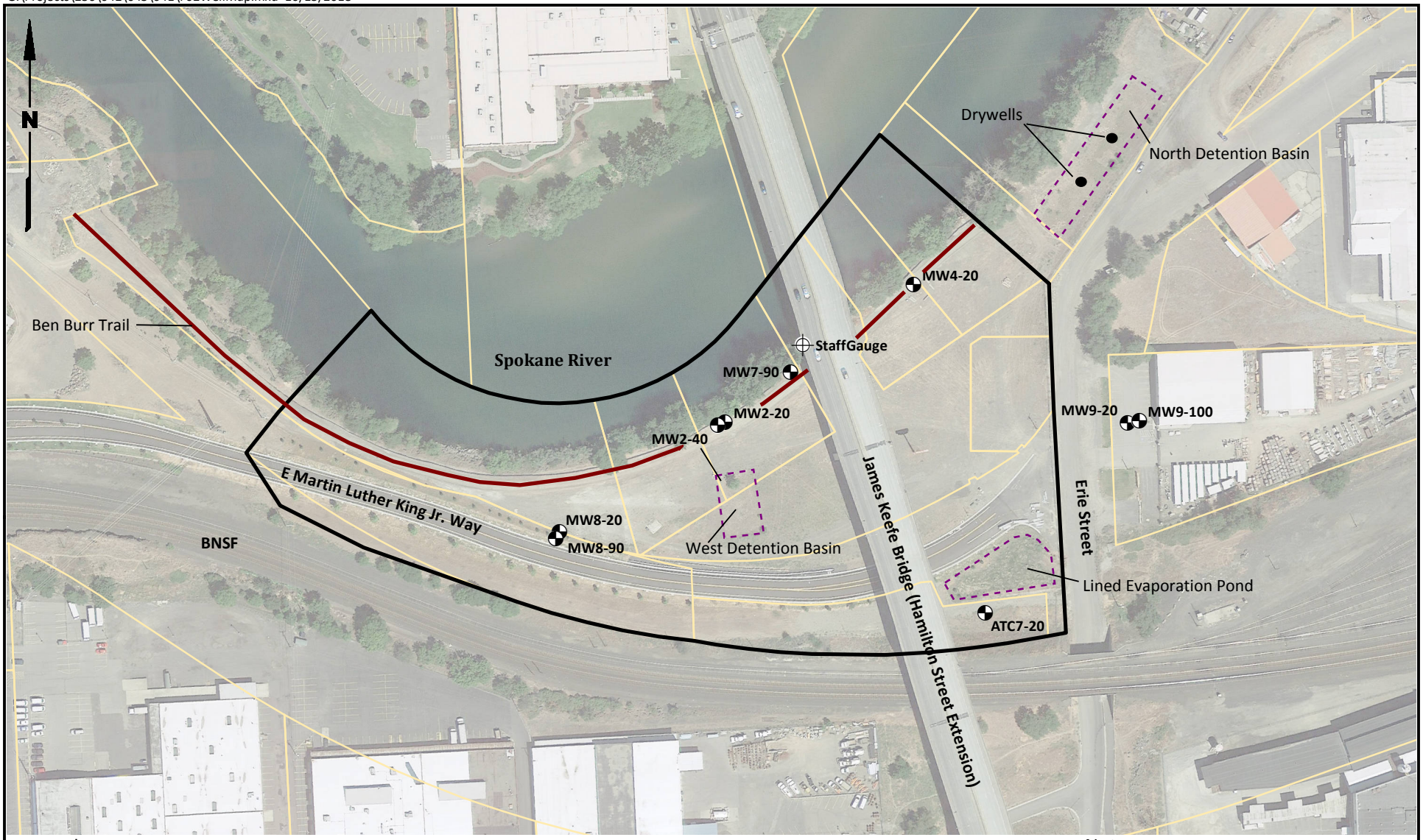

Legend

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

0 200 400

Scale in Feet

Source: Google Earth Pro, July 2018; Spokane County GIS

Note

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

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Hamilton Street Bridge Site Spokane, Washington	**Site 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	1,868.50	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	1,873.28	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	1,869.88	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	1,870.03	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	1,870.33	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	1,871.04	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	1,870.35	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	1,875.34	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	1,870.42	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	1,872.19	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	1,870.34	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	1,872.79	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	1,869.08	--	--	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	1,880.39	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	1,870.41	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	1,871.40	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	1,870.58	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	1,870.86	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

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							
		Chlorine(a)	Sulfide(b)	pH	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
MW02-20	3/7/2019	ND	ND	7.81	4.55	137	10.31	239.4	2.65
MW04-20	3/7/2019	ND	ND	6.65	3.95	154	7.91	259.8	1.82
MW02-40	3/7/2019	ND	ND	7.53	4.95	115	7.65	246.9	0.49
MW07-90	3/7/2019	ND	ND	7.74	10.11	493	8.00	230.6	0.50
ATC7-20	3/7/2019	ND	ND	7.61	10.45	533	7.82	248.9	0.37

Notes:

-- = Dry monitoring well

Values are final measurements recorded after purging three well casing volumes.

(a) Field screened using LaMotte chlorine test paper. Detection is based on color change. Detection limit is 10 ppm.

(b) Field screened using lead acetate test strip. Detection is positive or negative based on color change.

ND = no detection based on colorimetric response.

Abbreviations and Acronyms:

C = Celsius

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter

mV = millivolts

NTU = nephelometric turbidity units

ppm = parts per million

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
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
Site Cleanup Level (b)		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(c)	--	--	--	--	--
	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
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
Site Cleanup Level (b)		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
Site Cleanup Level (b)		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.

* Sample field filtered.

** Sulfide samples collected August 30, 2018.

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

(b) Final Cleanup Action Plan (Ecology 2001).

(c) Well is dry; groundwater sample not collected.

Abbreviations and Acronyms:

EPA = U.S. Environmental Protection Agency

mg/L = milligrams per liter

NR = not run by laboratory

NS = not specified

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	0.038 U	0.056 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
												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	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	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	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	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	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	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	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	0.037 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	0.056 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	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
												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	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	0.0097 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	0.019 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	0.097 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	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	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	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	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	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	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	0.038 U	0.056 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	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	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	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	0.263	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	0.0096 U	0.019 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	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
												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	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	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	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	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	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
												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
(c) Calculated in accordance with WAC 173-340-708(8).
(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: 3/7/19
Field Personnel: Shane Eddth

Well Number	Time	Depth to Groundwater - below PVC casing (feet)
ATC7-20	9:00	16.78
MW2-20	8:35	13.98
MW2-40	8:40	14.70
MW4-20	8:20	14.20
MW7-90	8:25	14.36
MW8-20	8:45	21.16
MW8-90	8:50	25.20
MW9-20	8:10	16.00
MW9-100	8:15	16.67
River Stage	8:30	5.00-2.03' = 2.97

NM = not measured

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT March 2019

SAMPLE NO. MW4-20-030719
DATE COLLECTED 3/7/19 TIME 10:25
WEATHER 0°C/Sun COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 14.20 Time: 9:43 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: MW4-20

Begin Purge: Date/Time 3/7/19, 9:44 Casing Volume (gal): 1.3
End Purge: Date/Time 3/7/19, 10:20 Purge Volume (gal): 3.9
Total Depth of Well (ft. below top of well casing) 21.8
Casing Volume Calculation: (21.8 - 14.20)(0.17) = 1.3 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)	Chlorine (mg/L)	Comments/Observations
1.3	3.86	153	7.94	6.28	378.4	3.59	14.20	ND	<10	
2.6	3.91	152	7.93	6.50	268.4	0.96	14.20	ND	<10	
3.9	3.95	154	7.91	6.65	259.8	1.82	14.20	ND	<10	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri-pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [x] 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

Chlorine (measured with test strips)

Initial concentration: ND

Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____

Containers	ANALYSIS		Preservative
1	8270D SIM PAH		None
X 1	4500 WAD cyanide	With 0 drops Sodium Thiosulfate	NaOH; ~~None~~
2	Total Metals (As) (Hg)		NO3
1	Dissolved Metals (As)		Lab Filtered
1	Total Sulfide		NaOH, ZN Acetate

Duplicate Sample No(s): ____
Comments: ____

Signature: [signature] Date 3/7/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT March 2019

SAMPLE NO. MW7-40-030719
DATE COLLECTED 3/7/19 TIME 12:00

WEATHER 2°C/clouds COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

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

Depth to Water (ft) 14.33 Time 11:15 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 3/7/19, 11:16 Casing Volume (gal): 13.3

End Purge: Date/Time 3/7/19, 11:55 Purge Volume (gal): 39.6

Total Depth of Well (ft. below top of well casing) 92.7

Casing Volume Calculation: (92.7 - 14.33)(0.17) = 13.3 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)	Chlorine (mg/L)	Comments/Observations
13.3	9.96	484	5.33	7.70	228.7	2.55	14.40	ND	<10	
26.6	10.10	491	7.90	7.73	229.4	1.97	14.40	ND	<10	
39.9	10.11	493	8.00	7.74	230.6	0.56	14.40	ND	<10	

SAMPLE COLLECTION DATA

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

Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [x] 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

Chlorine (measured with test strips)

Initial concentration: ND

Sodium Thiosulfate added: Concentration: Sodium Thiosulfate added: Concentration:

Sodium Thiosulfate added: Concentration: Sodium Thiosulfate added: Concentration:

Containers	ANALYSIS		Preservative
1	8270D SIM PAH		None
~~X~~ 1	4500 WAD cyanide	With 0 drops Sodium Thiosulfate	NaOH; ~~None~~
2	Total Metals (As) (Hg)		NO3
1	Dissolved Metals (As)		Lab Filtered
1	Total Sulfide		NaOH, ZN Acetate

Duplicate Sample No(s): MW20-60 -030719 (9:20)

Comments:

Signature: Date 3/7/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT March 2019

SAMPLE NO. MW2-20-030719
DATE COLLECTED 3/7/19 TIME 13:35
WEATHER 4°C / Cloudy COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 13.91 Time: 12:57 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 3/7/19, 12:57 Casing Volume (gal): 1.5
End Purge: Date/Time 3/7/19, 13:33 Purge Volume (gal): 4.5
Total Depth of Well (ft. below top of well casing) 22.5
Casing Volume Calculation: (22.5 - 13.91)(0.17) = 1.5

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)	Chlorine (mg/L)	Comments/Observations
1.5	4.36	138	10.25	7.85	242.4	1.17	13.91	ND	<10	
3.0	4.55	137	10.20	7.82	240.7	1.24	13.91	ND	<10	
4.5	4.55	137	10.31	7.81	239.4	2.65	13.91	ND	<10	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri-pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [x] 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

Chlorine (measured with test strips)

Initial concentration: ND

Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____

Containers	ANALYSIS		Preservative
1	8270D SIM PAH		None
~~X~~ 1	4500 WAD cyanide	With 0 drops Sodium Thiosulfate	NaOH; ~~None~~ X
2	Total Metals (As) (Hg)		NO3
1	Dissolved Metals (As)		Lab Filtered
1	Total Sulfide		NaOH, ZN Acetate

Duplicate Sample No(s): —
Comments:

Signature: [signature] Date 3/7/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT March 2019

SAMPLE NO. MW2-40-030719
DATE COLLECTED 3/7/19 TIME 15:25
WEATHER 30°C / Sun COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 14.69 Time 13:45 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~~ MW2-40
Begin Purge: Date/Time 3/7/19 13:46 Casing Volume (gal): 4.8
End Purge: Date/Time 3/7/19 Purge Volume (gal): 14.4
Total Depth of Well (ft. below top of well casing) ~~43~~ 43.0
Casing Volume Calculation (~~43~~ 43.0 - 14.69) x(0.17) = 4.8 gal
Purge Water Disposal to: [x] 55-gal drum [ ] Storage Tank [ ] Ground [ ] Other

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

Vol. Purged (gal)	Temp. (°C)	Cond. (uS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Sulfide (D/ND)	Chlorine (mg/L)	Comments/Observations
4.8	4.81	115	1.87	7.57	241.6	0.04	14.64	ND	<10	
9.6	4.83	115	1.77	7.55	242.3	0.56	14.66	ND	<10	
14.4	4.95	115	1.65	7.53	246.9	0.49	14.66	ND	<10	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri-pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [x] 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, cold-less, no odor or sheen

Chlorine (measured with test strips)

Initial concentration: ND

Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____

Containers	ANALYSIS		Preservative
1	8270D SIM PAH		None
~~X~~ 1	4500 WAD cyanide	With 0 drops Sodium Thiosulfate	NaOH; ~~None~~
2	Total Metals (As) (Hg)		NO3
1	Dissolved Metals (As)		Lab Filtered
1	Total Sulfide		NaOH, ZN Acetate

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

Signature: [signature] Date 3/7/19

LANDAU ASSOCIATES

Groundwater/Surface Water Sample Collection Form

PROJECT Avista HSB PROJ. NO. 236042
EVENT March 2019

SAMPLE NO. ATC7-20-030719
DATE COLLECTED 3/7/19 TIME 16:35
WEATHER 2°C / Sun COLLECTOR Shane Kostka

WATER LEVEL/WELL/PURGE DATA

Sample Type: [x] Groundwater [ ] Surface Water [ ] Other
Depth to Water (ft) 16.76 Time: 16:01 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: ~~MW2-40~~ ATC 7-20
Begin Purge: Date/Time 3/7/19, 16:03 Casing Volume (gal): 1.0
End Purge: Date/Time 3/7/19, 16:28 Purge Volume (gal): 3.0
Total Depth of Well (ft. below top of well casing) ~~40.0~~ 22.3
Casing Volume Calculation: (~~40.0~~ 22.3 - 16.76) X 0.17 = ~~6.8~~ 1.0

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)	Chlorine (mg/L)	Comments/Observations
1.0	10.41	532	7.64	7.58	246.4	0.33	16.76	ND	<10	
2.0	10.46	533	7.79	7.62	247.6	1.06	16.76	ND	<10	
3.0	10.45	533	7.83	7.61	248.9	0.37	16.76	ND	<10	

SAMPLE COLLECTION DATA

Sample Collected With: [ ] Bailer [x] Pump/Type peri-pump
Made of: [ ] Stainless Steel [ ] PVC [ ] Teflon [x] 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

Chlorine (measured with test strips)

Initial concentration: ND

Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____
Sodium Thiosulfate added: ____ Concentration: ____ Sodium Thiosulfate added: ____ Concentration: ____

Containers	ANALYSIS		Preservative
X 3	8270D SIM PAH		None
X 3	4500 WAD cyanide	With 0 drops Sodium Thiosulfate	NaOH; None X
X 6	Total Metals (As) (Hg)		NO3
X 3	Dissolved Metals (As)		Lab Filtered
X 3	Total Sulfide		NaOH, ZN Acetate

Duplicate Sample No(s): MS/MSD
Comments: No Cap on well

Signature: [signature] Date 3/7/19

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Shane Kostka	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4413-1427.1
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:	Analysis 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#:			

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: # No Sodium Thiosulfate added

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wastewater, Sludge, Groundwater, 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 - (MOD) Total Sulfide	WAD Cyanide (amber)	WAD Cyanide (poly)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		N	N	B	D	N	N	D	CB	N	N		
MW20-60-030719	3/7/19	9:20		Water	N	N	X	X	X	X	X	X			6	As QL ⇒ 1ug/L
MW4-20-030719		10:25		Water												Hg QL ⇒ 0.2ug/L
MW7-40-030719		12:00		Water												PAH QL ⇒ 0.1ug/L
MW2-20-030719		13:35		Water												Cyanide QL ⇒ 10ug/L
MW2-40-030719		15:25		Water												
ATC7-20-030719	↓	16:35		Water	↓	X	↓	↓	↓	↓	↓	↓			18	MS/MSD #
				Water												
				Water												
				Water												
				Water												
				Water												

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 ATC7-20

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Shane Kostka	3/8/19, 8:40	LAI	Matt Suda	3.8.19 0840	TA-SPO
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: 0.8°C (IR006)

Ver: 01/16/2019

APPENDIX B

Laboratory Data Sheets and Chain-of-Custody Reports

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 590-10531-1
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:
3/26/2019 1:14:19 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

TestAmerica Job ID: 590-10531-1

Job ID: 590-10531-1

Laboratory: TestAmerica Spokane

Narrative

Receipt
The samples were received on 3/8/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

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

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

General Chemistry
Method SM 4500 S2 D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 490-580301 recovered outside control limits for the following analytes: Sulfide. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method SM 4500 S2 D: The matrix spike and matrix spike duplicate (MS/MSD) for analytical batch 490-580301 had no recovery detected. Matrix interference is suspected. The samples and MS/MSD samples were re-prepped and re-analyzed with concurring results.

Method SM 4500 CN I: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 490-582202 and analytical batch 490-582858 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 4500 CN I: The following samples were tested for Sulfide prior to analysis as per the method and Sulfide was not detected: MW20-60-030719 (590-10531-1), MW4-20-030719 (590-10531-2), MW7-90-030719 (590-10531-3), MW2-20-030719 (590-10531-4), MW2-40-030719 (590-10531-5), ATC7-20-030719 (590-10531-6), ATC7-20-030719 (590-10531-6[MS]) and ATC7-20-030719 (590-10531-6[MSD])

No additional analytical or quality issues were noted, other than those described above or 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

TestAmerica Job ID: 590-10531-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
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

TestAmerica Job ID: 590-10531-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-10531-1	MW20-60-030719	Water	03/07/19 09:20	03/08/19 08:40
590-10531-2	MW4-20-030719	Water	03/07/19 10:25	03/08/19 08:40
590-10531-3	MW7-90-030719	Water	03/07/19 12:00	03/08/19 08:40
590-10531-4	MW2-20-030719	Water	03/07/19 13:35	03/08/19 08:40
590-10531-5	MW2-40-030719	Water	03/07/19 15:25	03/08/19 08:40
590-10531-6	ATC7-20-030719	Water	03/07/19 16:35	03/08/19 08:40

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

3/26/2019

Client Information	Sampler: Shane Kostka	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4413-1427.1
Client Contact: Mr. Ryan Reich	Phone: 208-819-1465	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:	Analysis Requested	Preservation Codes:
City: Spokane	TAT Requested (days): Standard		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)
State, Zip: WA, 99201			
Phone: 509-995-1665(Tel)	PO #: Purchase Order not required		Other: # No Sodium Thiosulfate added
Email: rreich@landauinc.com	WO #:		
Project Name: Avista Hamilton St. Bridge	Project #: 59000367		
Site:	SSOW#:		

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 - (MOD) Total Sulfide	WAD Cyanide (amber)	WAD Cyanide (poly)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				B	D	N	N	D	CB	N	N		
MW20-60-030719	3/7/19	9:20		Water	N	N	X	X	X	X	X	X			6	As QL ⇒ 1ug/L
MW4-20-030719		10:25		Water												Hg QL ⇒ 0.2ug/L
MW7-40-030719		12:00		Water												PAH QL ⇒ 0.1ug/L
MW2-20-030719		13:35		Water												Cyanide QL ⇒ 10ug/L
MW2-40-030719		15:25		Water												
ATC7-20-030719		16:35		Water		X									18	MS/MSD #
				Water												
				Water												
				Water												
				Water												
				Water												

590-10531 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 ATC7-20

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Shane Kostka	Date/Time: 3/8/19, 8:40	Company: LAI	Received by: Matt Suda
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Date/Time: 3.8.19 0840	Company: TA-SPO
Date/Time:	Company:
Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.3°C (IR0016)

Ver: 01/16/2019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Anchorage

590-10531 Chain of Custody

Cooler Received/Opened On 03-09-2019 @ 09:15

Time Samples Removed From Cooler 13:20 Time Samples Placed In Storage 14:32 (2 Hour Window)

1. Tracking # 6876 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 31470368 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 1.6 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES NO NA

If yes, how many and where: _____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ← Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) JD

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) JD

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) JD

I certify that I attached a label with the unique LIMS number to each container (intial) JD

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

3/26/2019

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

Chain of Custody Record

590-10531

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E		o: 178.1
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 #: 590-10531-1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 3/20/2019			
City: Nashville	TAT Requested (days):			
State, Zip: TN, 37204				
Phone: 615-726-0177(Tel) 615-726-3404(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 Weak Acid Dissociable Cyanide	SM4500_S2_D/ (MOD) Total Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW20-60-030719 (590-10531-1)	3/7/19	09:20 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
MW4-20-030719 (590-10531-2)	3/7/19	10:25 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
MW7-90-030719 (590-10531-3)	3/7/19	12:00 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
MW2-20-030719 (590-10531-4)	3/7/19	13:35 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
MW2-40-030719 (590-10531-5)	3/7/19	15:25 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
ATC7-20-030719 (590-10531-6)	3/7/19	16:35 Pacific		Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
ATC7-20-030719 (590-10531-6MS)	3/7/19	16:35 Pacific	MS	Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present
ATC7-20-030719 (590-10531-6MSD)	3/7/19	16:35 Pacific	MSD	Water			X	X	2	Please include NCM stating that Sulfide was checked and corrected for if present

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: Maria Otoole	Date/Time: 3/8/19 14:16	Company TA SPO	Received by: Jaweinis Jordon	Date/Time: 09:15 03/09/19	Company TA-NAS
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: 1.6

Ver: 01/16/2019

3/26/2019

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 590-4183.1
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 #: 590-10531-1
Address: 5755 8th Street East,	Due Date Requested: 3/20/2019			
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_LL/200.8_P_TOT (MOD) Total Arsenic	200.8_CWA_LL/FILTRATION (MOD) Dissolved Arsenic	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW20-60-030719 (590-10531-1)	3/7/19	09:20 Pacific		Water			X	X	2	
MW4-20-030719 (590-10531-2)	3/7/19	10:25 Pacific		Water			X	X	2	
MW7-90-030719 (590-10531-3)	3/7/19	12:00 Pacific		Water			X	X	2	
MW2-20-030719 (590-10531-4)	3/7/19	13:35 Pacific		Water			X	X	2	
MW2-40-030719 (590-10531-5)	3/7/19	15:25 Pacific		Water			X	X	2	
ATC7-20-030719 (590-10531-6)	3/7/19	16:35 Pacific		Water			X	X	2	
ATC7-20-030719 (590-10531-6MS)	3/7/19	16:35 Pacific	MS	Water			X	X	2	
ATC7-20-030719 (590-10531-6MSD)	3/7/19	16:35 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 OToole	3/11/19 14:27	TA SPO	Tom Blank	3/12/19 0955	TA-Spo
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: IR5 0.9/0.9

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-10531-1

Login Number: 10531
List Number: 1
Creator: O'Toole, Maria C

List Source: TestAmerica Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	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?	N/A	Not requested on COC.
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: 590-10531-1

Login Number: 10531
List Number: 3
Creator: Gall, Brandon A

List Source: TestAmerica Seattle
List Creation: 03/12/19 04:33 PM

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.	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	IR5=0.9/0.9
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?	N/A	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: MW20-60-030719
Date Collected: 03/07/19 09:20
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
2-Methylnaphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
1-Methylnaphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Acenaphthylene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Acenaphthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Fluorene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Phenanthrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Fluoranthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Benzo[a]anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Chrysene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Benzo[b]fluoranthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Benzo[k]fluoranthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Benzo[a]pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Indeno[1,2,3-cd]pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Dibenz(a,h)anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1
Benzo[g,h,i]perylene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*77*		*45 - 126*	*03/13/19 13:38*	*03/13/19 15:25*	*1*
2-Fluorobiphenyl (Surr)	*80*		*44 - 120*	*03/13/19 13:38*	*03/13/19 15:25*	*1*
p-Terphenyl-d14	*96*		*51 - 121*	*03/13/19 13:38*	*03/13/19 15:25*	*1*

Client Sample ID: MW4-20-030719
Date Collected: 03/07/19 10:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
2-Methylnaphthalene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
1-Methylnaphthalene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Acenaphthylene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Acenaphthene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Fluorene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Phenanthrene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Anthracene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Fluoranthene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Pyrene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Benzo[a]anthracene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Chrysene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Benzo[b]fluoranthene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Benzo[k]fluoranthene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Benzo[a]pyrene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Indeno[1,2,3-cd]pyrene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Dibenz(a,h)anthracene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1
Benzo[g,h,i]perylene	ND		0.091		ug/L		03/13/19 13:38	03/13/19 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*78*		*45 - 126*	*03/13/19 13:38*	*03/13/19 15:52*	*1*
2-Fluorobiphenyl (Surr)	*70*		*44 - 120*	*03/13/19 13:38*	*03/13/19 15:52*	*1*

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

Client Sample ID: MW4-20-030719
Date Collected: 03/07/19 10:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl-d14	*90*		*51 - 121*	*03/13/19 13:38*	*03/13/19 15:52*	*1*

Client Sample ID: MW7-90-030719
Date Collected: 03/07/19 12:00
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
2-Methylnaphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
1-Methylnaphthalene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Acenaphthylene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Acenaphthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Fluorene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Phenanthrene	**0.13**		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Fluoranthene	**0.087**		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Benzo[a]anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Chrysene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Benzo[b]fluoranthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Benzo[k]fluoranthene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Benzo[a]pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Indeno[1,2,3-cd]pyrene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Dibenz(a,h)anthracene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1
Benzo[g,h,i]perylene	ND		0.084		ug/L		03/13/19 13:38	03/13/19 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*84*		*45 - 126*	*03/13/19 13:38*	*03/13/19 16:18*	*1*
2-Fluorobiphenyl (Surr)	*75*		*44 - 120*	*03/13/19 13:38*	*03/13/19 16:18*	*1*
p-Terphenyl-d14	*89*		*51 - 121*	*03/13/19 13:38*	*03/13/19 16:18*	*1*

Client Sample ID: MW2-20-030719
Date Collected: 03/07/19 13:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
2-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
1-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Acenaphthylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Acenaphthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Fluorene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Phenanthrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Benzo[a]anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Chrysene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Benzo[b]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Benzo[k]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Benzo[a]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Indeno[1,2,3-cd]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1

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

Client Sample ID: MW2-20-030719
Date Collected: 03/07/19 13:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1
Benzo[g,h,i]perylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*79*		*45 - 126*	*03/13/19 13:38*	*03/13/19 16:45*	*1*
2-Fluorobiphenyl (Surr)	*72*		*44 - 120*	*03/13/19 13:38*	*03/13/19 16:45*	*1*
p-Terphenyl-d14	*86*		*51 - 121*	*03/13/19 13:38*	*03/13/19 16:45*	*1*

Client Sample ID: MW2-40-030719
Date Collected: 03/07/19 15:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
2-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
1-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Acenaphthylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Acenaphthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Fluorene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Phenanthrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Benzo[a]anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Chrysene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Benzo[b]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Benzo[k]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Benzo[a]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Indeno[1,2,3-cd]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Dibenz(a,h)anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1
Benzo[g,h,i]perylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*75*		*45 - 126*	*03/13/19 13:38*	*03/13/19 17:11*	*1*
2-Fluorobiphenyl (Surr)	*66*		*44 - 120*	*03/13/19 13:38*	*03/13/19 17:11*	*1*
p-Terphenyl-d14	*80*		*51 - 121*	*03/13/19 13:38*	*03/13/19 17:11*	*1*

Client Sample ID: ATC7-20-030719
Date Collected: 03/07/19 16:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
2-Methylnaphthalene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
1-Methylnaphthalene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Acenaphthylene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Acenaphthene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Fluorene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Phenanthrene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Anthracene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Fluoranthene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Pyrene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1

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

Client Sample ID: ATC7-20-030719 — **Lab Sample ID: 590-10531-6**
Date Collected: 03/07/19 16:35 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Chrysene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Benzo[b]fluoranthene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Benzo[k]fluoranthene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Benzo[a]pyrene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Indeno[1,2,3-cd]pyrene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Dibenz(a,h)anthracene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1
Benzo[g,h,i]perylene	ND		0.085		ug/L		03/13/19 13:38	03/13/19 17:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*79*		*45 - 126*	*03/13/19 13:38*	*03/13/19 17:38*	*1*
2-Fluorobiphenyl (Surr)	*71*		*44 - 120*	*03/13/19 13:38*	*03/13/19 17:38*	*1*
p-Terphenyl-d14	*90*		*51 - 121*	*03/13/19 13:38*	*03/13/19 17:38*	*1*

Method: 200.8 LL - Metals (ICP/MS)

Client Sample ID: MW20-60-030719 — **Lab Sample ID: 590-10531-1**
Date Collected: 03/07/19 09:20 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0043		0.0010		mg/L		03/20/19 18:31	03/21/19 11:42	1

Client Sample ID: MW4-20-030719 — **Lab Sample ID: 590-10531-2**
Date Collected: 03/07/19 10:25 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0019		0.0010		mg/L		03/15/19 14:16	03/18/19 19:54	1

Client Sample ID: MW7-90-030719 — **Lab Sample ID: 590-10531-3**
Date Collected: 03/07/19 12:00 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0045		0.0010		mg/L		03/20/19 18:31	03/21/19 11:29	1

Client Sample ID: MW2-20-030719 — **Lab Sample ID: 590-10531-4**
Date Collected: 03/07/19 13:35 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0014		0.0010		mg/L		03/20/19 18:31	03/21/19 11:33	1

Client Sample ID: MW2-40-030719 — **Lab Sample ID: 590-10531-5**
Date Collected: 03/07/19 15:25 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0014		0.0010		mg/L		03/20/19 18:31	03/21/19 11:37	1

Client Sample ID: ATC7-20-030719 — **Lab Sample ID: 590-10531-6**
Date Collected: 03/07/19 16:35 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0051		0.0010		mg/L		03/20/19 18:31	03/21/19 10:28	1

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

Client Sample ID: MW20-60-030719 — **Lab Sample ID: 590-10531-1**
Date Collected: 03/07/19 09:20 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0048		0.0010		mg/L		03/18/19 17:49	03/19/19 16:23	1

Client Sample ID: MW4-20-030719 — **Lab Sample ID: 590-10531-2**
Date Collected: 03/07/19 10:25 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0019		0.0010		mg/L		03/18/19 17:49	03/19/19 16:19	1

Client Sample ID: MW7-90-030719 — **Lab Sample ID: 590-10531-3**
Date Collected: 03/07/19 12:00 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0048		0.0010		mg/L		03/18/19 17:49	03/19/19 16:14	1

Client Sample ID: MW2-20-030719 — **Lab Sample ID: 590-10531-4**
Date Collected: 03/07/19 13:35 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0016		0.0010		mg/L		03/18/19 17:49	03/19/19 16:10	1

Client Sample ID: MW2-40-030719 — **Lab Sample ID: 590-10531-5**
Date Collected: 03/07/19 15:25 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0014		0.0010		mg/L		03/18/19 17:49	03/19/19 16:06	1

Client Sample ID: ATC7-20-030719 — **Lab Sample ID: 590-10531-6**
Date Collected: 03/07/19 16:35 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	0.0050		0.0010		mg/L		03/18/19 17:49	03/19/19 15:26	1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: MW20-60-030719 — **Lab Sample ID: 590-10531-1**
Date Collected: 03/07/19 09:20 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:35	1

Client Sample ID: MW4-20-030719 — **Lab Sample ID: 590-10531-2**
Date Collected: 03/07/19 10:25 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:39	1

Client Sample ID: MW7-90-030719 — **Lab Sample ID: 590-10531-3**
Date Collected: 03/07/19 12:00 — **Matrix: Water**
Date Received: 03/08/19 08:40

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:41	1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: MW2-20-030719
Date Collected: 03/07/19 13:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:44	1

Client Sample ID: MW2-40-030719
Date Collected: 03/07/19 15:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:46	1

Client Sample ID: ATC7-20-030719
Date Collected: 03/07/19 16:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:48	1

General Chemistry

Client Sample ID: MW20-60-030719
Date Collected: 03/07/19 09:20
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	*	0.10		mg/L			03/11/19 17:25	1

Client Sample ID: MW4-20-030719
Date Collected: 03/07/19 10:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	*	0.10		mg/L			03/11/19 17:25	1

Client Sample ID: MW7-90-030719
Date Collected: 03/07/19 12:00
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	**27**		10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	*	0.10		mg/L			03/11/19 17:25	1

Client Sample ID: MW2-20-030719
Date Collected: 03/07/19 13:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	**22**		10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	*	0.10		mg/L			03/11/19 17:25	1

Client Sample ID: MW2-40-030719
Date Collected: 03/07/19 15:25
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	**11**		10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	*	0.10		mg/L			03/11/19 17:25	1

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

TestAmerica Job ID: 590-10531-1

General Chemistry

Client Sample ID: ATC7-20-030719
Date Collected: 03/07/19 16:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND	F1 F2	10		ug/L		03/20/19 13:53	03/21/19 08:24	1
Sulfide	ND	F1 *	0.10		mg/L			03/11/19 17:25	1

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

Lab Sample ID: MB 590-21299/1-A
Matrix: Water
Analysis Batch: 21284

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21299

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
2-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
1-Methylnaphthalene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Acenaphthylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Acenaphthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Fluorene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Phenanthrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Benzo[a]anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Chrysene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Benzo[b]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Benzo[k]fluoranthene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Benzo[a]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Indeno[1,2,3-cd]pyrene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Dibenz(a,h)anthracene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1
Benzo[g,h,i]perylene	ND		0.090		ug/L		03/13/19 13:38	03/13/19 14:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*86*		*45 - 126*	*03/13/19 13:38*	*03/13/19 14:06*	*1*
2-Fluorobiphenyl (Surr)	*75*		*44 - 120*	*03/13/19 13:38*	*03/13/19 14:06*	*1*
p-Terphenyl-d14	*93*		*51 - 121*	*03/13/19 13:38*	*03/13/19 14:06*	*1*

Lab Sample ID: LCS 590-21299/2-A
Matrix: Water
Analysis Batch: 21284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21299

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	1.60	1.24		ug/L		78	52 - 121
2-Methylnaphthalene	1.60	1.26		ug/L		79	44 - 134
1-Methylnaphthalene	1.60	1.27		ug/L		79	56 - 123
Acenaphthylene	1.60	1.28		ug/L		80	57 - 134
Acenaphthene	1.60	1.28		ug/L		80	54 - 132
Fluorene	1.60	1.27		ug/L		80	59 - 141
Phenanthrene	1.60	1.32		ug/L		82	57 - 141
Anthracene	1.60	1.34		ug/L		84	60 - 136
Fluoranthene	1.60	1.43		ug/L		89	76 - 133
Pyrene	1.60	1.37		ug/L		85	59 - 145
Benzo[a]anthracene	1.60	1.37		ug/L		85	76 - 138
Chrysene	1.60	1.42		ug/L		89	69 - 138
Benzo[b]fluoranthene	1.60	1.40		ug/L		87	69 - 144
Benzo[k]fluoranthene	1.60	1.51		ug/L		94	67 - 141
Benzo[a]pyrene	1.60	1.38		ug/L		86	70 - 141
Indeno[1,2,3-cd]pyrene	1.60	1.39		ug/L		87	73 - 146
Dibenz(a,h)anthracene	1.60	1.41		ug/L		88	68 - 144
Benzo[g,h,i]perylene	1.60	1.42		ug/L		89	68 - 150

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

Lab Sample ID: LCS 590-21299/2-A
Matrix: Water
Analysis Batch: 21284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21299

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*99*		*45 - 126*
2-Fluorobiphenyl (Surr)	*81*		*44 - 120*
p-Terphenyl-d14	*97*		*51 - 121*

Lab Sample ID: LCSD 590-21299/3-A
Matrix: Water
Analysis Batch: 21284

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 21299

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			1.60	1.27		ug/L		79	52 - 121	2	30
2-Methylnaphthalene			1.60	1.24		ug/L		78	44 - 134	2	30
1-Methylnaphthalene			1.60	1.21		ug/L		76	56 - 123	5	30
Acenaphthylene			1.60	1.22		ug/L		76	57 - 134	5	30
Acenaphthene			1.60	1.26		ug/L		79	54 - 132	2	30
Fluorene			1.60	1.27		ug/L		80	59 - 141	0	30
Phenanthrene			1.60	1.40		ug/L		87	57 - 141	6	30
Anthracene			1.60	1.39		ug/L		87	60 - 136	4	30
Fluoranthene			1.60	1.50		ug/L		94	76 - 133	5	30
Pyrene			1.60	1.40		ug/L		87	59 - 145	2	30
Benzo[a]anthracene			1.60	1.39		ug/L		87	76 - 138	2	30
Chrysene			1.60	1.45		ug/L		91	69 - 138	2	30
Benzo[b]fluoranthene			1.60	1.45		ug/L		91	69 - 144	4	30
Benzo[k]fluoranthene			1.60	1.39		ug/L		87	67 - 141	9	30
Benzo[a]pyrene			1.60	1.37		ug/L		86	70 - 141	1	30
Indeno[1,2,3-cd]pyrene			1.60	1.39		ug/L		87	73 - 146	0	30
Dibenz(a,h)anthracene			1.60	1.39		ug/L		87	68 - 144	2	30
Benzo[g,h,i]perylene			1.60	1.40		ug/L		88	68 - 150	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Nitrobenzene-d5	*91*		*45 - 126*
2-Fluorobiphenyl (Surr)	*73*		*44 - 120*
p-Terphenyl-d14	*90*		*51 - 121*

Lab Sample ID: 590-10531-6 MS
Matrix: Water
Analysis Batch: 21284

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 21299

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	ND		1.61	1.11		ug/L		69	52 - 121
2-Methylnaphthalene	ND		1.61	1.10		ug/L		68	44 - 134
1-Methylnaphthalene	ND		1.61	1.14		ug/L		71	56 - 123
Acenaphthylene	ND		1.61	1.16		ug/L		72	57 - 134
Acenaphthene	ND		1.61	1.16		ug/L		72	54 - 132
Fluorene	ND		1.61	1.19		ug/L		74	59 - 141
Phenanthrene	ND		1.61	1.20		ug/L		74	57 - 141
Anthracene	ND		1.61	1.23		ug/L		76	60 - 136
Fluoranthene	ND		1.61	1.24		ug/L		77	76 - 133
Pyrene	ND		1.61	1.22		ug/L		76	59 - 145

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

Lab Sample ID: 590-10531-6 MS
Matrix: Water
Analysis Batch: 21284

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 21299

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	ND		1.61	1.23		ug/L		76	76 - 138
Chrysene	ND		1.61	1.26		ug/L		78	69 - 138
Benzo[b]fluoranthene	ND		1.61	1.28		ug/L		79	69 - 144
Benzo[k]fluoranthene	ND		1.61	1.24		ug/L		77	67 - 141
Benzo[a]pyrene	ND		1.61	1.21		ug/L		75	70 - 141
Indeno[1,2,3-cd]pyrene	ND		1.61	1.21		ug/L		75	73 - 146
Dibenz(a,h)anthracene	ND		1.61	1.21		ug/L		75	68 - 144
Benzo[g,h,i]perylene	ND		1.61	1.21		ug/L		75	68 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5	*80*		*45 - 126*
2-Fluorobiphenyl (Surr)	*74*		*44 - 120*
p-Terphenyl-d14	*87*		*51 - 121*

Lab Sample ID: 590-10531-6 MSD
Matrix: Water
Analysis Batch: 21284

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 21299

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	ND		1.52	1.12		ug/L		74	52 - 121	1	30
2-Methylnaphthalene	ND		1.52	1.10		ug/L		72	44 - 134	1	30
1-Methylnaphthalene	ND		1.52	1.09		ug/L		72	56 - 123	5	30
Acenaphthylene	ND		1.52	1.12		ug/L		74	57 - 134	4	30
Acenaphthene	ND		1.52	1.11		ug/L		73	54 - 132	5	30
Fluorene	ND		1.52	1.14		ug/L		75	59 - 141	4	30
Phenanthrene	ND		1.52	1.17		ug/L		77	57 - 141	3	30
Anthracene	ND		1.52	1.22		ug/L		81	60 - 136	1	30
Fluoranthene	ND		1.52	1.26		ug/L		83	76 - 133	2	30
Pyrene	ND		1.52	1.18		ug/L		78	59 - 145	4	30
Benzo[a]anthracene	ND		1.52	1.22		ug/L		80	76 - 138	1	30
Chrysene	ND		1.52	1.27		ug/L		84	69 - 138	1	30
Benzo[b]fluoranthene	ND		1.52	1.26		ug/L		83	69 - 144	2	30
Benzo[k]fluoranthene	ND		1.52	1.27		ug/L		84	67 - 141	2	30
Benzo[a]pyrene	ND		1.52	1.20		ug/L		79	70 - 141	1	30
Indeno[1,2,3-cd]pyrene	ND		1.52	1.19		ug/L		78	73 - 146	2	30
Dibenz(a,h)anthracene	ND		1.52	1.20		ug/L		79	68 - 144	1	30
Benzo[g,h,i]perylene	ND		1.52	1.20		ug/L		79	68 - 150	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5	*82*		*45 - 126*
2-Fluorobiphenyl (Surr)	*74*		*44 - 120*
p-Terphenyl-d14	*89*		*51 - 121*

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 580-296414/14-A
Matrix: Water
Analysis Batch: 296584

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296414

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	ND		0.0010		mg/L		03/15/19 14:16	03/18/19 18:44	1

Lab Sample ID: LCS 580-296414/15-A
Matrix: Water
Analysis Batch: 296584

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
As	1.00	0.970		mg/L		97	85 - 115

Lab Sample ID: LCSD 580-296414/16-A
Matrix: Water
Analysis Batch: 296584

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296414

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
As	1.00	0.968		mg/L		97	85 - 115	0	20

Lab Sample ID: MB 580-296811/14-A
Matrix: Water
Analysis Batch: 296890

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296811

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	ND		0.0010		mg/L		03/20/19 18:31	03/21/19 10:15	1

Lab Sample ID: LCS 580-296811/15-A
Matrix: Water
Analysis Batch: 296890

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296811

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
As	1.00	0.954		mg/L		95	85 - 115

Lab Sample ID: LCSD 580-296811/16-A
Matrix: Water
Analysis Batch: 296890

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296811

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
As	1.00	0.933		mg/L		93	85 - 115	2	20

Lab Sample ID: 590-10531-6 MS
Matrix: Water
Analysis Batch: 296890

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 296811

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
As	0.0051		1.00	0.948		mg/L		94	70 - 130

Lab Sample ID: 590-10531-6 MSD
Matrix: Water
Analysis Batch: 296890

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 296811

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
As	0.0051		1.00	1.00		mg/L		100	70 - 130	6	20

Lab Sample ID: 590-10531-6 DU
Matrix: Water
Analysis Batch: 296890

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 296811

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
As	0.0051			0.00489		mg/L				4	20

Lab Sample ID: MB 580-296368/21-C
Matrix: Water
Analysis Batch: 296708

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 296583

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
As	ND		0.0010		mg/L		03/18/19 17:49	03/19/19 15:13	1

Lab Sample ID: LCS 580-296368/22-C
Matrix: Water
Analysis Batch: 296708

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 296583

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

Lab Sample ID: LCSD 580-296368/23-C
Matrix: Water
Analysis Batch: 296708

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 296583

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
As			1.00	1.01		mg/L		101	85 - 115	1	20

Lab Sample ID: 590-10531-6 MS
Matrix: Water
Analysis Batch: 296708

Client Sample ID: ATC7-20-030719
Prep Type: Dissolved
Prep Batch: 296583

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
As	0.0050		1.00	0.995		mg/L		99	70 - 130		

Lab Sample ID: 590-10531-6 MSD
Matrix: Water
Analysis Batch: 296708

Client Sample ID: ATC7-20-030719
Prep Type: Dissolved
Prep Batch: 296583

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
As	0.0050		1.00	0.997		mg/L		99	70 - 130	0	20

Lab Sample ID: 590-10531-6 DU
Matrix: Water
Analysis Batch: 296708

Client Sample ID: ATC7-20-030719
Prep Type: Dissolved
Prep Batch: 296583

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
As	0.0050			0.00503		mg/L				1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 590-21406/9-A
Matrix: Water
Analysis Batch: 21427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 21406

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20		ug/L		03/21/19 11:02	03/22/19 11:32	1

Lab Sample ID: LCS 590-21406/8-A
Matrix: Water
Analysis Batch: 21427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 21406

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg			2.00	2.02		ug/L		101	85 - 115		

Lab Sample ID: 590-10531-6 MS
Matrix: Water
Analysis Batch: 21427

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 21406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg	ND		2.00	1.92		ug/L		96	70 - 130		

Lab Sample ID: 590-10531-6 MSD
Matrix: Water
Analysis Batch: 21427

Client Sample ID: ATC7-20-030719
Prep Type: Total/NA
Prep Batch: 21406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		2.00	2.08		ug/L		104	70 - 130	8	20

Lab Sample ID: 590-10531-1 DU
Matrix: Water
Analysis Batch: 21427

Client Sample ID: MW20-60-030719
Prep Type: Total/NA
Prep Batch: 21406

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

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

Lab Sample ID: MB 490-582202/1-A
Matrix: Water
Analysis Batch: 582858

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 582202

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Weak Acid Dissociable	ND		10		ug/L		03/20/19 13:53	03/21/19 08:24	1

Lab Sample ID: LCS 490-582202/2-A
Matrix: Water
Analysis Batch: 582858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 582202

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Weak Acid Dissociable			100	108		ug/L		108	80 - 120		

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

Lab Sample ID: 590-10531-6 MS — **Client Sample ID: ATC7-20-030719**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 582858 — **Prep Batch: 582202**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Weak Acid Dissociable	ND	F1 F2	100	143	F1	ug/L		143	70 - 130

Lab Sample ID: 590-10531-6 MSD — **Client Sample ID: ATC7-20-030719**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 582858 — **Prep Batch: 582202**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Weak Acid Dissociable	ND	F1 F2	100	64.7	F1 F2	ug/L		65	70 - 130	75	43

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 490-580301/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 580301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10		mg/L			03/11/19 17:25	1

Lab Sample ID: LCS 490-580301/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 580301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1.00	1.20	*	mg/L		120	90 - 110

Lab Sample ID: LCSD 490-580301/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 580301

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	1.00	1.19	*	mg/L		119	90 - 110	1	10

Lab Sample ID: 590-10531-6 MS — **Client Sample ID: ATC7-20-030719**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 580301

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND	F1 *	1.00	ND	F1	mg/L		0	70 - 130

Lab Sample ID: 590-10531-6 MSD — **Client Sample ID: ATC7-20-030719**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 580301

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND	F1 *	1.00	ND	F1	mg/L		0	70 - 130	NC	20

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

Lab Sample ID: MB 490-581981/2
Matrix: Water
Analysis Batch: 581981

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10		mg/L			03/19/19 17:08	1

Lab Sample ID: LCS 490-581981/3
Matrix: Water
Analysis Batch: 581981

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			1.00	1.05		mg/L		105	90 - 110		

Client Sample ID: MW20-60-030719

Lab Sample ID: 590-10531-1

Date Collected: 03/07/19 09:20

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 15:25	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 16:23	FCW	TAL SEA
Total/NA	Prep	200.8			296811	03/20/19 18:31	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296890	03/21/19 11:42	FCW	TAL SEA
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:35	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Client Sample ID: MW4-20-030719

Lab Sample ID: 590-10531-2

Date Collected: 03/07/19 10:25

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 15:52	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 16:19	FCW	TAL SEA
Total/NA	Prep	200.8			296414	03/15/19 14:16	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296584	03/18/19 19:54	FCW	TAL SEA
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:39	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Client Sample ID: MW7-90-030719

Lab Sample ID: 590-10531-3

Date Collected: 03/07/19 12:00

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 16:18	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 16:14	FCW	TAL SEA
Total/NA	Prep	200.8			296811	03/20/19 18:31	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296890	03/21/19 11:29	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 590-10531-1

Client Sample ID: MW7-90-030719

Lab Sample ID: 590-10531-3

Date Collected: 03/07/19 12:00

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:41	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Client Sample ID: MW2-20-030719

Lab Sample ID: 590-10531-4

Date Collected: 03/07/19 13:35

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 16:45	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 16:10	FCW	TAL SEA
Total/NA	Prep	200.8			296811	03/20/19 18:31	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296890	03/21/19 11:33	FCW	TAL SEA
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:44	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Client Sample ID: MW2-40-030719

Lab Sample ID: 590-10531-5

Date Collected: 03/07/19 15:25

Matrix: Water

Date Received: 03/08/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 17:11	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 16:06	FCW	TAL SEA
Total/NA	Prep	200.8			296811	03/20/19 18:31	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296890	03/21/19 11:37	FCW	TAL SEA
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:46	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Lab Chronicle

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

TestAmerica Job ID: 590-10531-1

Client Sample ID: ATC7-20-030719

Date Collected: 03/07/19 16:35
Date Received: 03/08/19 08:40

Lab Sample ID: 590-10531-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			21299	03/13/19 13:38	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	21284	03/13/19 17:38	NMI	TAL SPK
Dissolved	Filtration	FILTRATION			296368	03/15/19 10:21	T1H	TAL SEA
Dissolved	Prep	200.8			296583	03/18/19 17:49	T1H	TAL SEA
Dissolved	Analysis	200.8 LL		1	296708	03/19/19 15:26	FCW	TAL SEA
Total/NA	Prep	200.8			296811	03/20/19 18:31	JKM	TAL SEA
Total/NA	Analysis	200.8 LL		1	296890	03/21/19 10:28	FCW	TAL SEA
Total/NA	Prep	245.1			21406	03/21/19 11:02	JSP	TAL SPK
Total/NA	Analysis	245.1		1	21427	03/22/19 11:48	JSP	TAL SPK
Total/NA	Prep	SM 4500 CN I			582202	03/20/19 13:53	LDT	TAL NSH
Total/NA	Analysis	SM 4500 CN I		1	582858	03/21/19 08:24	REM	TAL NSH
Total/NA	Analysis	SM 4500 S2 D		1	580301	03/11/19 17:25	DRR	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

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

TestAmerica Job ID: 590-10531-1

Laboratory: TestAmerica Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	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: TestAmerica Nashville

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

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	06-30-19
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19 *
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19 *
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 590-10531-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD / DOE		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

Method Summary

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

TestAmerica Job ID: 590-10531-1

Method	Method Description	Protocol	Laboratory
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SPK
200.8 LL	Metals (ICP/MS)	EPA	TAL SEA
245.1	Mercury (CVAA)	EPA	TAL SPK
SM 4500 CN I	Cyanide, Weak Acid Dissociable	SM	TAL NSH
SM 4500 S2 D	Sulfide, Total	SM	TAL NSH
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 NSH

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310
TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200