November 29, 2017

Alexis McKinnon
Solid Waste Specialist
Kitsap County Public Works
Solid Waste Division
614 Division Street MS-27
Port Orchard, WA 98366

Re: Third Quarter 2017 Environmental Monitoring Report, Hansville Landfill, Kitsap County, Washington
Project No. 160423-05.1

Dear Alexis:

This quarterly report summarizes the results of the environmental monitoring conducted at the Hansville Landfill (Site) during the third quarter of 2017, and was prepared by Aspect Consulting, LLC (Aspect) on behalf of Kitsap County Public Works Solid Waste Division and Waste Management of Washington (WMW). Ongoing environmental monitoring at the Site supports the selected remedy of natural attenuation of groundwater with enhanced monitoring and institutional controls that was established under Amended Consent Decree No. 95-2-03005-1 (August 5, 2011). The data sets presented in this letter report were collected in accordance with the Site Cleanup Action Plan (CAP) and the Compliance Monitoring Plan with Sampling & Analysis Plan and Quality Assurance Plan (Compliance Monitoring Plan) (SCS, 2011), except where otherwise noted.

During the third quarter 2017, conditions monitored at the Site were consistent with historical trends showing improvements in protection of human health and the environment. This report is organized consistent with quarterly reporting topics listed in the Compliance Monitoring Plan (SCS, 2011) and includes:

- Site monitoring and maintenance activities, along with a discussion of any deviations from the CAP or required tasks not otherwise documented in project plans.
- Landfill gas monitoring results and gas collection system adjustments.
- Determination of groundwater flow direction and gradient, including a groundwater surface elevation contour map.
- Water quality sampling results, including tabulated field data and laboratory analyses.

Also included are time-series plots and projected trends in groundwater concentrations for selected analytes at selected monitoring locations. Finally, this report discusses geochemical parameters as indicators of landfill effects on groundwater and surface water.

Site Activities—Third Quarter 2017

Site activities included environmental monitoring of landfill gas, groundwater, and surface water. Landfill gas monitoring data are presented in Attachment A. Groundwater elevations, a groundwater contour map, and groundwater and surface water quality analytical results are presented in Attachment B. Summary statistics, time-series graphs, and graphs of projected

groundwater concentrations for arsenic and vinyl chloride at selected monitoring wells are presented in Attachment C. Supporting field records, laboratory data reports, and chain-of-custody documentation are presented in Attachment D. A chronology of on-Site activities performed during the third quarter of 2017 is provided below.

- On July 11, 2017, groundwater and surface water sampling was completed by Aspect representatives. Groundwater and surface water samples were collected in accordance with the Compliance Monitoring Plan (SCS, 2011).
- On July 27, 2017, WMW personnel installed new wellheads with orifice plates on ten landfill gas extraction wells. The wells with newly installed wellheads are: R-1, R-4, R-5, R-6, R-7, R-8, R-10, TD-1, TR1, and TR-4.
- On July 11 and August 18, 2017, Aspect conducted monthly system tuning of the landfill gas system.
- On September 14 and 20, 2017, Aspect conducted landfill gas monitoring in accordance with the Compliance Monitoring Plan (SCS, 2011). During the September 14 landfill gas monitoring, flow rates at selected wells were adjusted to ensure capture of landfill gasses. These changes included increasing the flowrate at R-1, R-3, R-12, TR-2, TR-3, TR-6, and TD-1. It was also noted that the wellhead on TR-5 could not be adjusted and likely needs replacing, and an observed leak at the R-13 wellhead was patched just prior to measurement.

Deviations from the Compliance Monitoring Plan

There were deviations from the Compliance Monitoring Plan (SCS, 2011) during third quarter sampling, but these deviations do not affect project schedule for Site cleanup. The causes of the deviations are identified below, as are solutions for avoiding these issues during future monitoring events.

During first quarter sampling, samples were not able to be field filtered due to low pressures produced by dedicated pumps in the monitoring wells (Aspect, 2017). During subsequent sampling events, a peristaltic pump was used as a booster pump, with disposable tubing inserted into the outlet of the dedicated Grundfos pumps, and water pumped through a 0.45-micrometer (µm) filter. This setup allows for samples to be field filtered as specified in the Compliance Monitoring Plan (SCS, 2011).

Summary of Landfill Gas Conditions

The following sections provide a discussion of landfill gas monitoring, gas extraction system performance, and condensate system maintenance conducted during third quarter 2017. The layout of the landfill gas extraction system is shown on Figure A-1.

Landfill Gas Monitoring

During the third quarter 2017, compliance monitoring of the landfill gas collection system and compliance probes occurred on September 14 and 20, and the landfill gas collection system was tuned on July 11 and August 18.

Measurements were made with a GEM-5000 multigas meter. Landfill gas monitoring parameters collected for the compliance monitoring event are summarized in Table A-1, and listed below:

- Landfill gas composition measurements included methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), and balance gas (Balance) concentrations.
- Collection system pressure measurements included the static pressure measured before and after any valve adjustments, reported as "initial" and "adjusted," respectively.
- Collection system flow-rate measurements were obtained at selected locations. At locations with orifice plates, the differential pressure and gas temperature were measured to calculate flow. These locations include the blower inlet, extraction wells R-1 through R-8, R-10, R-11, and R-12, and trench collectors TD-1, TR-1, TR-2, TR-4, and TR-7. Table A-1 presents flow rates measured after valve adjustments, reported "adjusted."

Landfill Gas System Performance

During the third quarter 2017, the flow at the blower inlet was approximately 72.5 standard cubic feet per minute (scfm). Methane and carbon dioxide concentrations at the blower inlet remained relatively stable after increasing during the first half of 2017. Oxygen concentrations remained low after decreasing during the first half of 2017. Wellfield optimization will continue to focus on increasing methane and carbon dioxide collection rates.

Explosive Gas Control

Methane was not detected in any of the compliance gas probes. Carbon dioxide concentrations were less than 5 percent, which is within the range of natural conditions.

Summary of Groundwater and Surface Water Conditions

The following sections provide a discussion on groundwater flow, water quality, and an evaluation of statistical trends for selected groundwater parameters.

Groundwater Flow

Groundwater surface elevations from the third quarter 2017 are presented in Table B-1. Groundwater elevations ranged from 238.5 feet North American Vertical Datum of 1988 (NAVD88) in MW-12I to 268.3 feet NAVD88 in MW-5. Groundwater at the Site flows generally towards the southwest. Groundwater gradients range from 0.007 feet/feet in the upgradient areas, to 0.03 feet/feet further downgradient, with the gradient steepening as it approaches the groundwater discharge area (Figure B-1). Groundwater elevation and gradient conditions are consistent with those presented in previous monitoring events.

Groundwater and Surface Water Quality

Groundwater quality results from the third quarter 2017 are presented in Table B-2, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the third quarter 2017, vinyl chloride concentrations in groundwater were above the Site-specific groundwater cleanup level of 0.025 micrograms per liter (µg/L) at three monitoring wells, including MW-6 (0.15 µg/L), MW-12I (0.099 µg/L), and MW-14 (0.14 µg/L). These values are consistent with the decreasing trend in vinyl chloride concentrations observed during previous monitoring events. The arsenic concentration in groundwater was above the Site-specific cleanup levels of 0.005 milligrams per liter (mg/L) only at monitoring well MW-14 (0.015 mg/L), which is consistent with previous monitoring events.

Surface water quality results from the third quarter 2017 are presented in Table B-3, including field parameters, conventional parameters, dissolved metals, and volatile organic compounds. During the third quarter of 2017, no volatile organic compounds were detected in surface water samples. Vinyl chloride has not been detected in surface water samples since the third quarter of 2013, and reporting limits have been less than the Site-specific cleanup level of 0.025 µg/L. Arsenic was detected in each surface water sample, and one sample, SW-6, had a concentration of 0.00811 µg/L, exceeding the Site-specific cleanup level for arsenic of 0.005 µg/L. The increased concentration of arsenic is likely correlated to the seasonally low stream flows. Historically, SW-6 has had arsenic exceedances during seasonally low stream flows, most recently in the third quarter 2016 (SCS, 2016).

Time-Series Plots and Projected Trends

Groundwater sampling results since 2007 are shown on time-series plots for dissolved arsenic (Figure C-1) and vinyl chloride (Figure C-2) at all compliance monitoring locations. In general, dissolved arsenic concentrations in groundwater have been less than the cleanup level of 0.005 mg/L, except at MW-14. Vinyl chloride concentrations in groundwater have been less than the cleanup level of 0.025 µg/L, except at MW-6, MW-12I, and MW-14.

Figure C-3 shows time-series plots of historical and 10-year projected groundwater concentrations for MW-6 (vinyl chloride), MW-12I (vinyl chloride), and MW-14 (arsenic and vinyl chloride). Projected groundwater concentrations reflect the exponential trend of historical groundwater concentrations. Optimizing the existing landfill gas collection system will reduce the gas-to-groundwater pathway, and may achieve groundwater cleanup levels within a shorter time frame than shown on Figure C-3.

Statistical Evaluation of Groundwater Trends

Dissolved arsenic and/or vinyl chloride concentrations in groundwater show statistically significant decreasing trends at monitoring wells MW-6, MW-12I, and MW-14, where one or both constituents have been detected above Site-specific cleanup levels.

Statistical analysis of groundwater data was performed in accordance with the Compliance Monitoring Plan (SCS, 2011) for historical data collected since January 23, 2007. The program Sanitas WQStat (ver. 9.0.34) was used to evaluate the Mann-Kendall Test and Sen's Slope. Mann-Kendall testing was performed to assess whether there were statistically significant trends in groundwater concentrations using the two-tailed test (alpha = 0.05). Mann-Kendall results are reported as an approximated normal distribution Test Value "Z" (where the number of data points was greater than 40). Sen's slope analysis was performed to identify the trend direction for statistically significant trends, and reflects the median of the slopes of all pairs of historical data.

Table C-1 provides results of statistical analysis for arsenic and vinyl chloride for monitoring wells, where the most recent quarterly results exceeded their Site-specific cleanup levels. The statistical trend summarizes the results of Mann-Kendall Test and Sen's Slope analysis. In all cases, the trends are statistically significant because the magnitude of the Mann-Kendall Test Value (Z) was greater than the Critical Value (which is based on the number of data points and alpha). In all cases,

the trends are decreasing because the Sen's Slope is negative[1]. In summary, Table C-1 shows that dissolved arsenic concentrations in groundwater at MW-14, and vinyl chloride concentrations in groundwater at MW-6, MW-12I, and MW-14, have statistically significant downward trends.

The annual report will provide additional statistical evaluation, including updates for the upper and lower confidence limits at selected wells to provide context for projected groundwater concentrations.

Geochemical Parameters

Geochemical parameters in groundwater and surface water serve as indicators of landfill effects, and can distinguish leachate impacts from gas-to-groundwater impacts. As shown in Tables B-2 and B-3, geochemical parameters collected at the Site include field parameters (dissolved oxygen, pH, Redox [reduction-oxidation potential], specific conductivity, and temperature), alkalinity/carbonate/bicarbonate, chloride, nitrate/nitrite/ammonia, sulfate, and total organic carbon.

During the third quarter 2017, dissolved oxygen represented the clearest indicator of landfill effects. The downgradient monitoring wells show lower dissolved oxygen concentrations than the upgradient well (MW-5) or surface water sampling locations (SW-1, SW-4, SW-6, and SW-7), consistent with previous observations. Based on similar concentrations for other geochemical parameters (such as chloride) across the Site, there appears to be little if any leachate effect on groundwater and surface water quality. Optimizing landfill gas collection will reduce the gas-to-groundwater pathway that appears to be affecting groundwater geochemistry, and will reduce the potential for vinyl chloride and arsenic impacts to groundwater.

References

Aspect Consulting, LLC (Aspect), 2017, First Quarter 2017 Environmental Monitoring Report, Hansville Landfill, Kitsap County, WA, April 28, 2017.

SCS Engineers (SCS), 2011, Compliance Monitoring Plan with Sampling & Analysis Plan and Quality Assurance Plan – Remedial Action at the Hansville Landfill, September 15, 2011.

SCS Engineers (SCS), 2016, Third Quarter 2016 Environmental Monitoring Report, Hansville Landfill, Kitsap County, WA, October 2016.

[1] Sen's slope values reflect the median of the slopes of historical data pairs, and were provided in units of µg/L per day in reports by SCS Engineers through 2016. Starting in 2017, Sen's slope values will be provided in units of µg/L per year, to support interpretation. For comparison, Table C-1 provides Sen's slope values for both units.

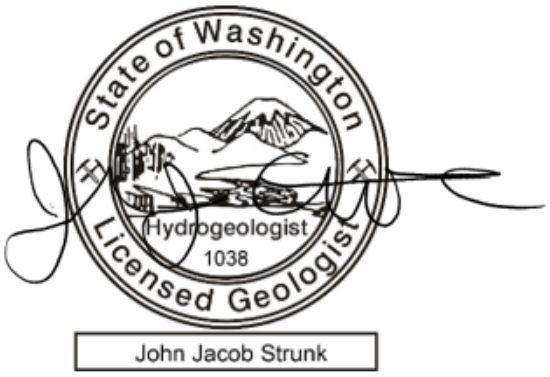
Limitations

Work for this project was performed for the Kitsap County Public Works, Solid Waste Division (Client), and this letter was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Sincerely,

Aspect consulting, LLC



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Attachments: A – Landfill Gas Data
B – Water Quality Results
C – Groundwater Statistics and Time-Series Plots
D – Field Forms and Laboratory Reports

cc: Phil Perley, Waste Management of Washington
Jan Brower, Kitsap Public Health District
Ron Timm, Washington State Department of Ecology
Sam Phillips, Port Gamble S'Klallam Tribe

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Attachment A

Landfill Gas Data

Table A-1. Landfill Gas Data, September 14-20, 2017

Project No. 160423, Hansville Landfill, Hansville, WA

Location	Device ID	Date/Time	Methane, CH4 (% by vol)	Carbon Dioxide, CO2 (% by vol)	Oxygen, O2 (% by vol)	Balance, Bal (% by vol)	Static Pressure (inches H2O)			Gas Temperature (degrees F)			Flow Rate (SCFM)			
							Initial	Adjusted	Maximum	Initial	Adjusted	Maximum	Initial		Adjusted	
Blower Inlet	HANSBLIN	9/14/2017 8:58	4.50	15.10	1.70	78.70	-3.57	-3.56	-3.56	64.30	64.30	64.3	72.60	*	71.50	*
Blower Outlet	HANSBLOT	9/14/2017 9:01	4.40	15.20	1.70	78.70	-0.04	-0.04	-0.04	59.30	59.30	59.3	N/A		N/A	
Extraction Well 001	HANSR001	9/14/2017 10:07	5.60	12.60	0.20	81.60	-1.04	-1.07	-1.04	71.60	71.30	71.6	1.40	*	1.60	*
Extraction Well 002	HANSR002	9/14/2017 11:43	1.40	13.80	3.00	81.80	-1.98	-1.98	-1.98	74.50	74.50	74.5	2.60	*	2.70	*
Extraction Well 003	HANSR003	9/14/2017 11:38	6.70	12.30	0.00	81.00	-1.21	-1.23	-1.21	77.60	78.90	78.9	2.50	*	2.80	*
Extraction Well 004	HANSR004	9/14/2017 11:26	2.30	15.90	0.00	81.80	-1.59	-1.60	-1.59	73.30	73.30	73.3	2.20	*	2.20	*
Extraction Well 005	HANSR005	9/14/2017 11:18	1.50	16.90	0.30	81.30	-1.10	-1.13	-1.1	75.60	75.60	75.6	2.40	*	2.40	*
Extraction Well 006	HANSR006	9/14/2017 11:03	2.00	15.90	2.50	79.60	-1.44	-1.46	-1.44	79.20	79.20	79.2	1.60	*	1.60	*
Extraction Well 007	HANSR007	9/14/2017 10:58	0.60	13.40	0.10	85.90	-0.88	-0.88	-0.88	72.80	72.80	72.8	2.80	*	2.80	*
Extraction Well 008	HANSR008	9/14/2017 9:38	4.00	16.80	0.10	79.10	-1.24	-1.25	-1.24	65.80	65.80	65.8	2.20	*	2.20	*
Extraction Well 009	HANSR009	9/14/2017 9:55	1.00	14.80	2.10	82.10	-2.43	-2.39	-2.39	77.50	77.50	77.5	0.30		0.40	
Extraction Well 010	HANSR010	9/14/2017 10:00	4.60	9.00	4.20	82.20	-1.15	-1.16	-1.15	73.40	73.50	73.5	1.30	*	1.30	*
Extraction Well 011	HANSR011	9/14/2017 10:22	2.60	5.20	0.00	92.20	-1.04	-1.06	-1.04	74.00	74.10	74.1	0.70	*	0.70	*
Extraction Well 012	HANSR012	9/14/2017 10:28	10.00	2.00	0.00	88.00	-1.26	-1.40	-1.26	72.00	72.40	72.4	1.00	*	1.50	*
Extraction Well 013	HANSR013	9/14/2017 10:52	1.00	9.20	5.60	84.20	-1.70	-1.71	-1.7	73.40	73.50	73.5	3.10		3.10	
Trench Collector TD-1	HANSTD01	9/14/2017 9:15	4.60	20.90	0.00	74.50	-0.09	-0.07	-0.07	70.20	68.20	70.2	1.30	*	3.20	*
Trench Collector TR-1	HANSTR01	9/14/2017 11:08	0.10	13.60	4.60	81.70	-1.05	-1.06	-1.05	79.50	79.70	79.7	2.40	*	2.40	*
Trench Collector TR-2	HANSTR02	9/14/2017 9:50	6.50	16.40	0.60	76.50	-1.83	-1.55	-1.55	67.10	67.70	67.7	0.60		2.70	
Trench Collector TR-3	HANSTR03	9/14/2017 10:17	6.60	16.50	0.70	76.20	-1.43	-1.41	-1.41	71.60	71.30	71.6	0.40		1.00	
Trench Collector TR-4	HANSTR04	9/14/2017 11:22	2.60	18.20	0.00	79.20	-1.06	-1.06	-1.06	78.80	78.80	78.8	2.20	*	2.20	*
Trench Collector TR-5	HANSTR05	9/14/2017 10:43	0.00	0.10	20.50	79.40	-1.15	-1.16	-1.15	70.70	77.00	77	3.60		3.60	
Trench Collector TR-6	HANSTR06	9/14/2017 10:35	7.50	15.50	0.60	76.40	-2.02	-1.29	-1.29	67.60	68.10	68.1	0.80		2.20	
Trench Collector TR-7	HANSTR07	9/14/2017 11:32	8.90	15.10	0.40	75.60	-1.13	-1.13	-1.13	71.90	71.90	71.9	2.80	*	2.80	*
Native Soil Extraction Well 1 Shallow	HANSN01S	9/14/2017 11:57	0.00	1.50	18.70	79.80	-0.73	-0.97	-0.73	66.80	67.50	67.5	1.20		0.30	
Native Soil Extraction Well 1 Deep	HANSN01D	9/14/2017 11:51	0.00	1.60	18.60	79.80	-1.08	-1.13	-1.08	65.40	64.60	65.4	1.00		0.30	
Native Soil Extraction Well 2 Shallow	HANSN02S	9/14/2017 12:11	0.00	0.10	19.90	80.00	-0.14	-0.15	-0.14	85.80	85.90	85.9	0.30		0.00	
Native Soil Extraction Well 2 Deep	HANSN02D	9/14/2017 12:06	0.00	0.20	20.00	79.80	-0.09	-0.09	-0.09	80.60	80.70	80.7	0.00		0.00	
Native Soil Extraction Well 3 Shallow	HANSN03S	9/14/2017 12:21	0.00	1.80	18.10	80.10	-1.00	-0.53	-0.53	68.30	69.40	69.4	3.90		4.60	
Native Soil Extraction Well 3 Deep	HANSN03D	9/14/2017 12:16	0.00	1.60	18.30	80.10	-0.59	-0.31	-0.31	76.20	79.40	79.4	4.20		4.70	
Native Soil Extraction Well 4 Shallow	HANSN04S	9/20/2017 16:15	0.00	1.40	20.10	78.50	-0.26	-0.25	-0.25	64.00	64.00	64	0.00		0.00	
Native Soil Extraction Well 4 Deep	HANSN04D	9/20/2017 16:11	0.00	1.40	19.90	78.70	-0.17	-0.16	-0.16	64.00	64.00	64	0.00		0.00	
Native Soil Extraction Well 5 Shallow	HANSN05S	9/20/2017 16:04	0.00	1.40	20.00	78.60	-0.62	-0.54	-0.54	64.00	64.00	64	0.00		0.00	
Native Soil Extraction Well 5 Deep	HANSN05D	9/20/2017 16:01	0.00	1.10	20.40	78.50	-0.34	-0.33	-0.33	64.00	64.00	64	0.00		0.00	
Gas Probe 1	HANSGP01	9/20/2017 14:07	0.00	1.00	20.80	78.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 2 Shallow	HANSGP2S	9/20/2017 14:21	0.00	0.10	21.60	78.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 2 Middle	HANSGP2M	9/20/2017 14:32	0.00	1.20	19.00	79.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 2 Deep	HANSGP2D	9/20/2017 14:49	0.00	1.30	18.50	80.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 3	HANSGP03	9/20/2017 14:58	0.00	1.00	21.30	77.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 4	HANSGP04	9/20/2017 15:09	0.00	1.20	20.90	77.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 5	HANSGP05	9/20/2017 15:42	0.00	1.10	20.80	78.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 6	HANSGP06	9/20/2017 15:52	0.00	2.40	19.00	78.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	
Gas Probe 7	HANSGP07	9/20/2017 15:28	0.00	3.20	19.10	77.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	

Notes

* Flow rate measured using orifice plate.

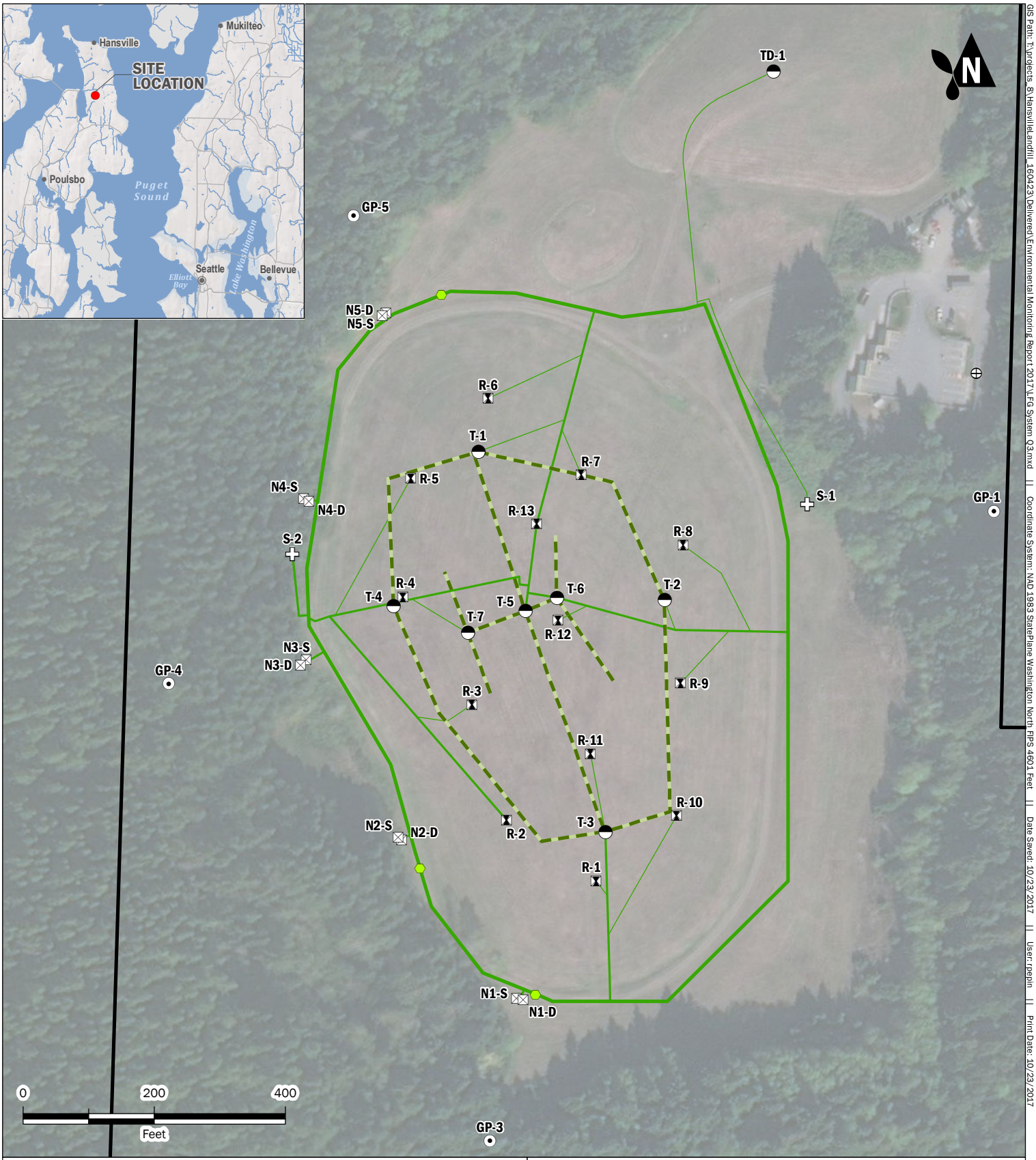
** Flow rate measured with a hot-wire anemometer on 5/2/17

"N/A" indicates parameter not measured.

"inches H2O" - inches water column

"degrees F" - degrees Fahrenheit

"SCFM" - standard cubic feet per minute



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Exploration

- Condensate Sump
- Gas Detection Probe
- Gas Extraction Well (Native Soil Completion)
- Gas Extraction Well (in Refuse Completion)
- Trench Completion
- Well Geologic Control

Landfill Gas System

- LFG Pipe - 2"
- LFG Pipe - 4"
- LFG Pipe - 6"
- Trench
- LFG Valve
- Landfill Boundary

Landfill Gas System

Third Quarter 2017 Environmental Monitoring Report
Hansville Landfill
Kitsap County, Washington

Aspect CONSULTING	OCT-2017	BY: AHP / RAP / KES	FIGURE NO. A-1
	PROJECT NO. 160423	REVISED BY: ---	

Attachment B

Water Quality Results

Table B-1. Water Level Elevations

Project No. 160423, Hansville Landfill, Hansville, WA

Well	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Screen Elevation (ft NAVD88)		Depth to Water (ft)	Water Level Elevation (ft NAVD88)
			Top	Bottom		
MW-5	363.7	366.9	244	234	98.6	268.3
MW-6	332	332.7	260	245	72.9	259.9
MW-7	344.3	346.0	259	244	83.3	262.7
MW-12I	245.6	248.1	217	207	9.6	238.5
MW-13D	258.1	260.4	205	195	10.4	250.0
MW-14	338.6	341.1	262	247	80.7	260.4

Notes

Depths to water collected July 11, 2017

Elevations relative to North American Vertical Datum of 1988 (NAVD88).

Table B-2. Groundwater Quality Results

Project No. 160423, Hansville Landfill, Hansville, WA

Parameter	Site Cleanup Level	MW-5	MW-6	MW-7	MW-12I	MW-13D	MW-14
Conventional Parameters							
Alkalinity		**60**	**130**	**150**	**87**	**76**	**110**
Ammonia (as N)		U	U	U	U	U	U
Bicarbonate		**60**	**130**	**150**	**87**	**76**	**110**
Carbonate		U	U	U	U	U	U
Chloride		**2.8**	**9.9**	**1.6**	**3.2**	**6.0**	**4.7**
Nitrate (as N)		**1.01**	**1.37**	**0.555**	**2.18**	0.1 U	**0.224**
Nitrite (as N)		0.1 U	**0.355**	0.1 U	0.1 U	0.1 U	0.1 U
Orthophosphate (as P)		0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	**0.12**
Sulfate		**8.8**	**23**	**4.4**	**6.3**	**18**	**13**
Total Organic Carbon (TOC)		U	U	**1.2**	**1.9**	U	U
Dissolved Metals (mg/L)							
Arsenic	0.005	**0.00199**	**0.00216**	**0.0011**	**0.00228**	**0.00437**	**0.015**
Manganese	2.24	**1.3**	**470**	U	**54**	**25**	**870**
Field Parameters							
Dissolved Oxygen (mg/L)		**8.37**	**0.42**	**1.78**	**0.14**	**0.13**	**2.48**
pH (units)		**7.47**	**7.2**	**6.92**	**7.38**	**7.76**	**7.05**
Redox (mV)		**113.2**	**117.3**	**114.6**	**138.6**	**191**	**100.1**
Specific Conductivity (uS)		**150.8**	**331.6**	**299.6**	**183.6**	**201.8**	**251.3**
Temperature (degrees C)		**13.9**	**16.6**	**12.3**	**11**	**11.3**	**15.7**
Turbidity (NTU)		**0.08**	**0.16**	**0.2**	**0.13**	**0.3**	**0.42**
Volatile Organic Compounds							
Vinyl Chloride (8260 SIM)	0.025	U	**0.15**	U	**0.099**	U	**0.14**

Notes

Bold - detected

Shaded - Exceeded Site Cleanup Level

U - Not detected at or above reporting limit

J or UJ - Estimated "usable"

R - Rejected data, not representative of site conditions

mg/L - milligrams per liter

mV - millivolts

uS - microSiemens

degrees C - degrees Celcius

NTU - Nephthalometric Turbidity Units

ug/L - micrograms per liter

Table B-3. Surface Water Quality Results

Project No. 16423, Hansville Landfill, Hansville, WA

Parameter	Site Cleanup Level	SW-1	SW-4	SW-6	SW-7
Conventional Parameters					
Alkalinity		**80**	**160**	**69**	**58**
Ammonia (as N)		U	U	**0.066**	U
Bicarbonate		**80**	**160**	**69**	**58**
Carbonate		U	U	U	U
Chloride		**4.8**	**15**	**4.0**	**3.6**
Nitrate (as N)		**1.55**	**0.931**	**0.218**	**0.763**
Nitrite (as N)		0.1 U	0.1 U	0.1 U	0.1 U
Orthophosphate (as P)		0.1 U	0.1 U	0.1 U	0.1 U
Sulfate		**11**	**23**	**2.2**	**6.9**
Total Organic Carbon (TOC)		**1.6**	**4.4**	**16**	**6.6**
Dissolved Metals (mg/L)					
Arsenic	0.005	**0.00156**	**0.00197**	**0.00811**	**0.00158**
Manganese	2.24	U	**73**	**330**	**5.6**
Field Parameters					
Dissolved Oxygen (mg/L)		**8.35**	**8.35**	**10.23**	**10.47**
pH (units)		**7.82**	**8.06**	**7.56**	**7.94**
Redox (mV)		**166.6**	**166.6**	**343.1**	**114.7**
Specific Conductivity (uS)		**195.3**	**195.3**	**168.6**	**143.7**
Temperature (degrees C)		**11.7**	**11.7**	**14.5**	**12.7**
Turbidity (NTU)		**2.32**	**8.91**	**18.8**	**3.17**
Volatile Organic Compounds					
Vinyl Chloride (8260 SIM)	0.025	U	U	U	U

Notes

Bold - detected
Shaded - Exceeded Site Cleanup Level
U - Not detected at or above reporting limit
J or UJ - Estimated "usable"
R - Rejected data, not representative of site conditions

mg/L - milligrams per liter
mV - millivolts
uS - microSiemens
degrees C - degrees Celcius
NTU - Nephthalometric Turbidity Units

ug/L - micrograms per liter

Attachment C

Groundwater Statistics and Time-Series Plots

Table C-1. Statistical Analysis

Project 160423, Hansville Landfill, Hansville, WA

Dissolved Arsenic Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(ug/L per day)	(ug/L per year)
MW-5	--[3]	--	--	--	--	--	--
MW-6	--	--	--	--	--	--	--
MW-7	--	--	--	--	--		--
MW-12I	--	--	--	--	--	--	--
MW-13D	--	--	--	--	--		--
MW-14	Decreasing	-5.7	-1.96	42	Yes	-3.6E-06	-0.0013

Vinyl Chloride Statistical Results

Well	Statistical Trend[1]	Mann-Kendall Test[2]				Sen's Slope	
		Test Value, Z	Critical Value	Number of data points, n	Statistical Significance	(ug/L per day)	(ug/L per year)
MW-5	--[3]	--	--	--	--		--
MW-6	Decreasing	-4.8	-1.96	43	Yes	-6.4E-05	-0.023
MW-7	--	--	--	--	--		--
MW-12I	Decreasing	-5.9	-1.96	43	Yes	-1.2E-04	-0.043
MW-13D	--	--	--	--	--		--
MW-14	Decreasing	-7.1	-1.96	43	Yes	-1.0E-04	-0.038

Notes

1 - The Statistical Trend indicates:

"Non-significant" if the magnitude of the Test Value is less than the Critical Value,

"Increasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is positive, or

"Decreasing" if the magnitude of the Test Value is greater than the Critical Value and the Sen's Slope is negative.

2 - Mann-Kendall tests were performed with alpha = 0.05 (95% confidence level).

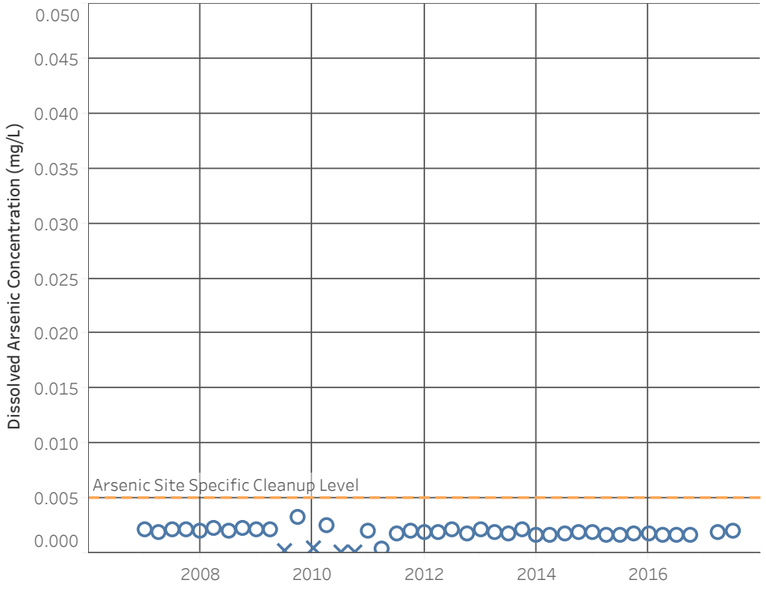
For N>40, Mann-Kendall uses an approximation of a normal distribution, represented by Test Value Z.

For N<=40, Mann-Kendall scores are reported as Test Value S.

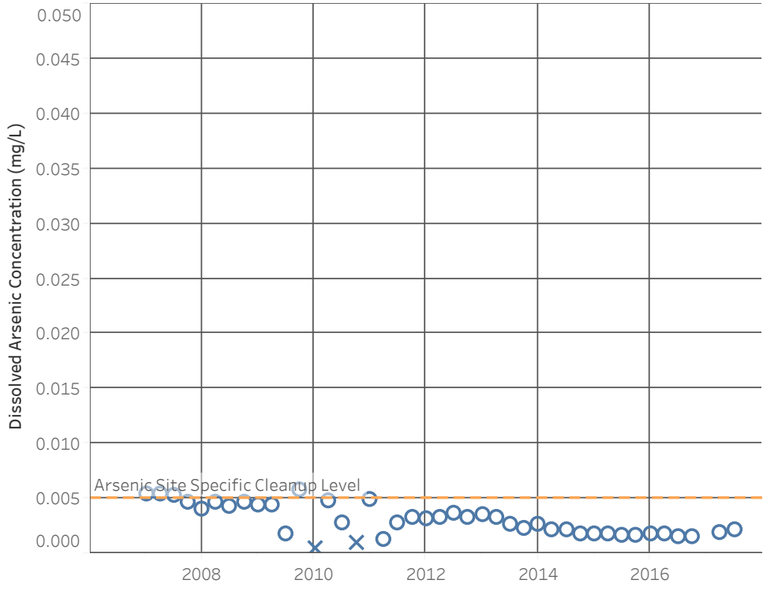
3 - "--" Indicates most recent groundwater concentrations were below the Site-specific cleanup level.

"ug/L" - micrograms per liter

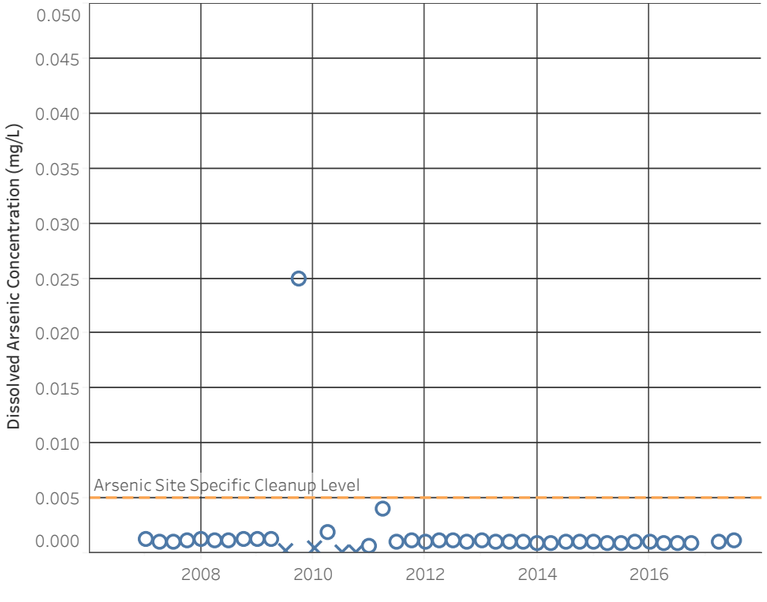
MW-5 (Background Well)



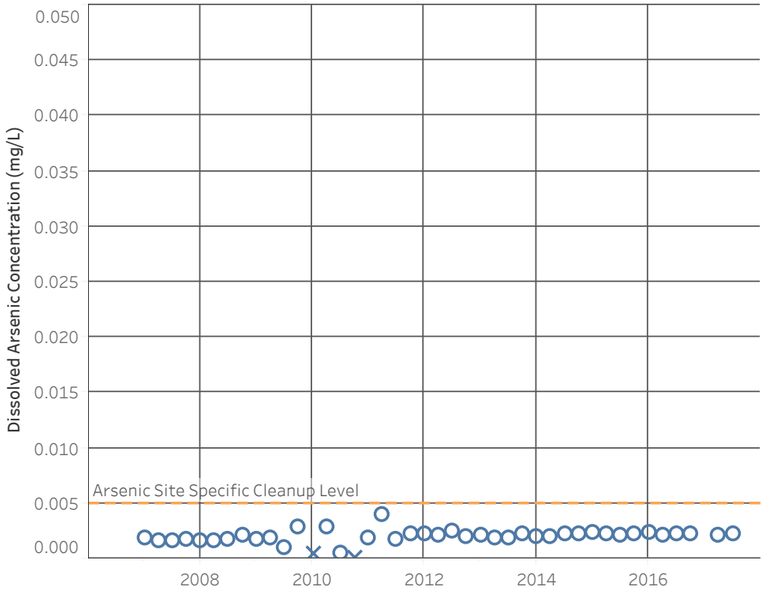
MW-6



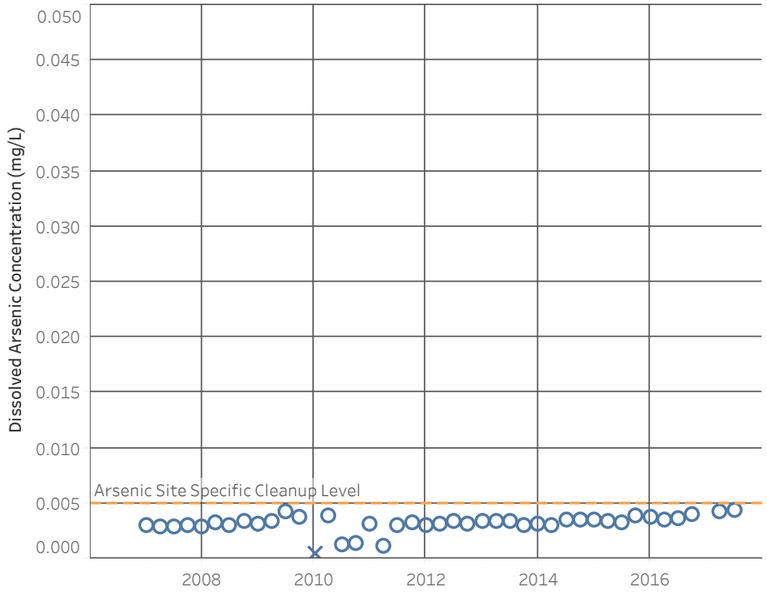
MW-7



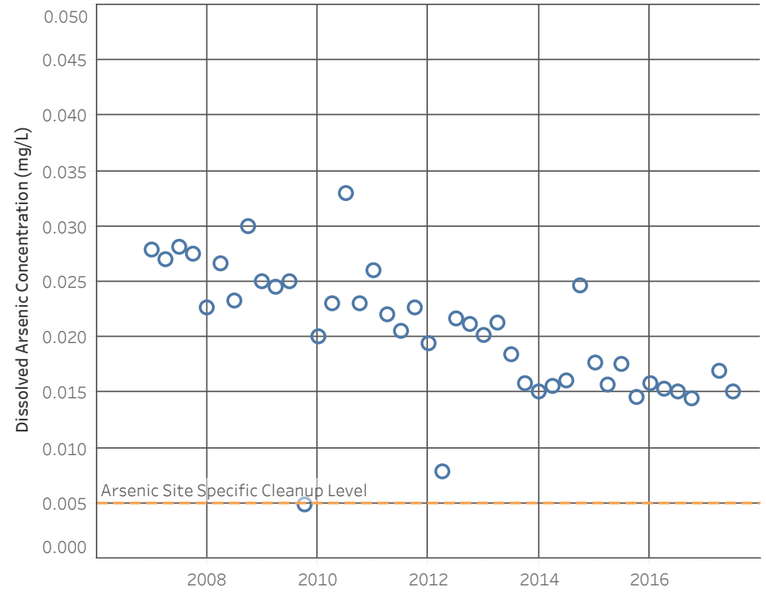
MW-12I



MW-13D



MW-14

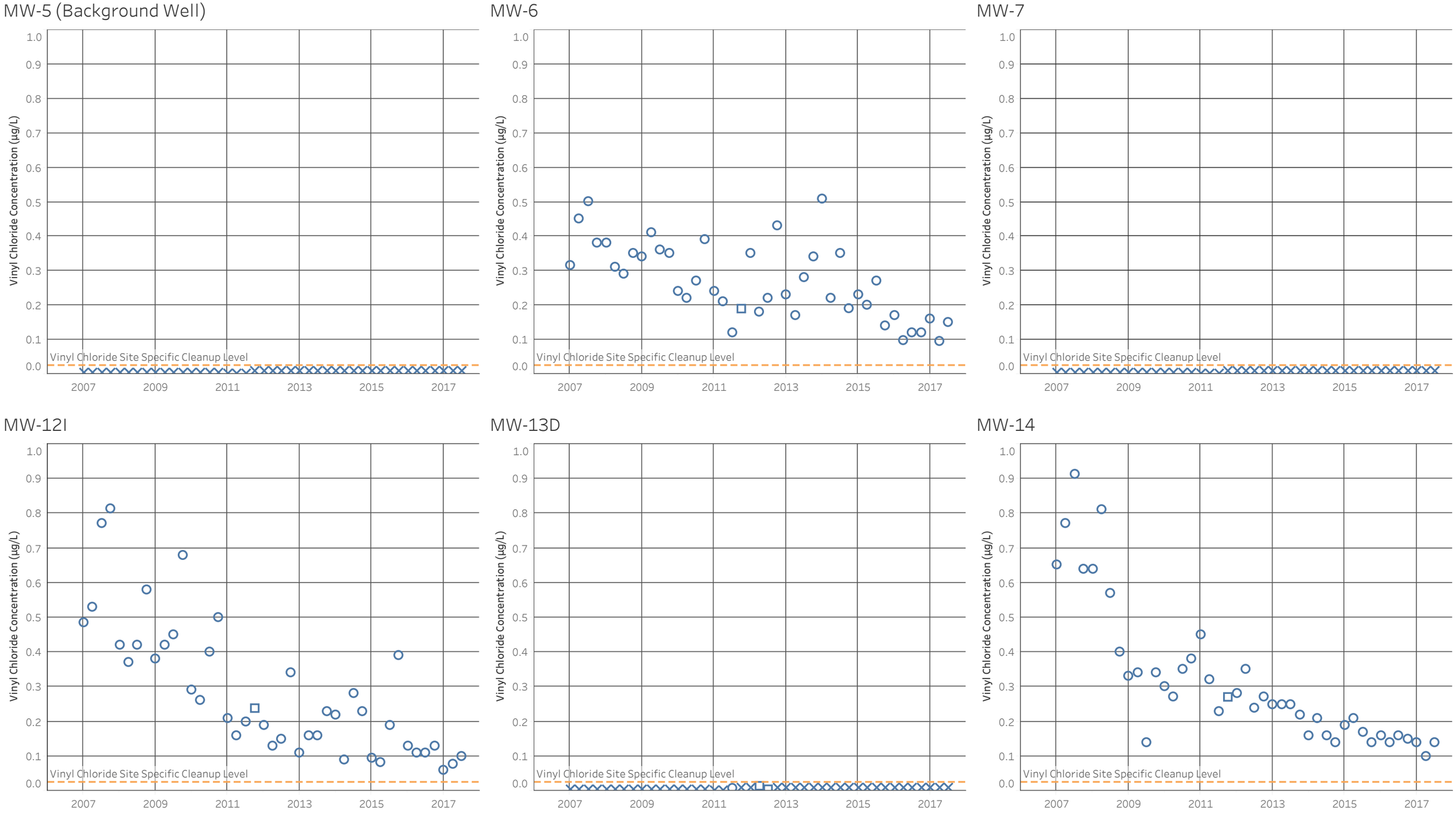


Note: Non-detected values are shown at 1/2 the reporting limit.
Results from First Quarter 2017 were rejected. See text.

Result Flags
O Detected
✕ U - Non-Detect

Aspect Consulting
10/29/2017
Trend Plots (As)

Figure C-1 - Dissolved Arsenic Sampling Results
Third Quarter 2017 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

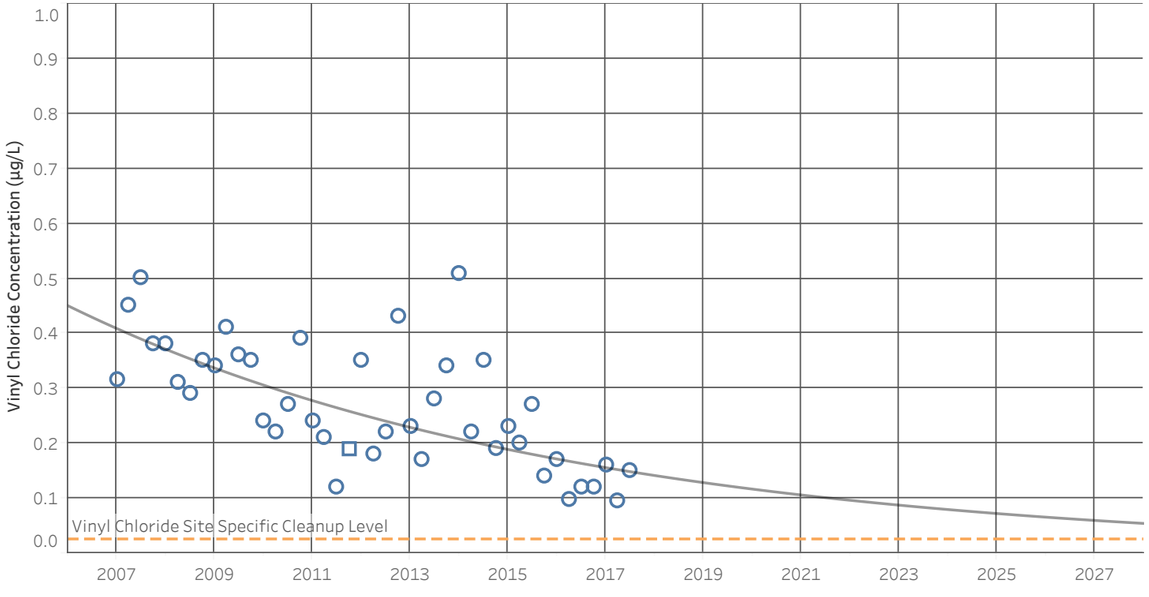


Note: Non-detected values are shown at 1/2 the reporting limit.

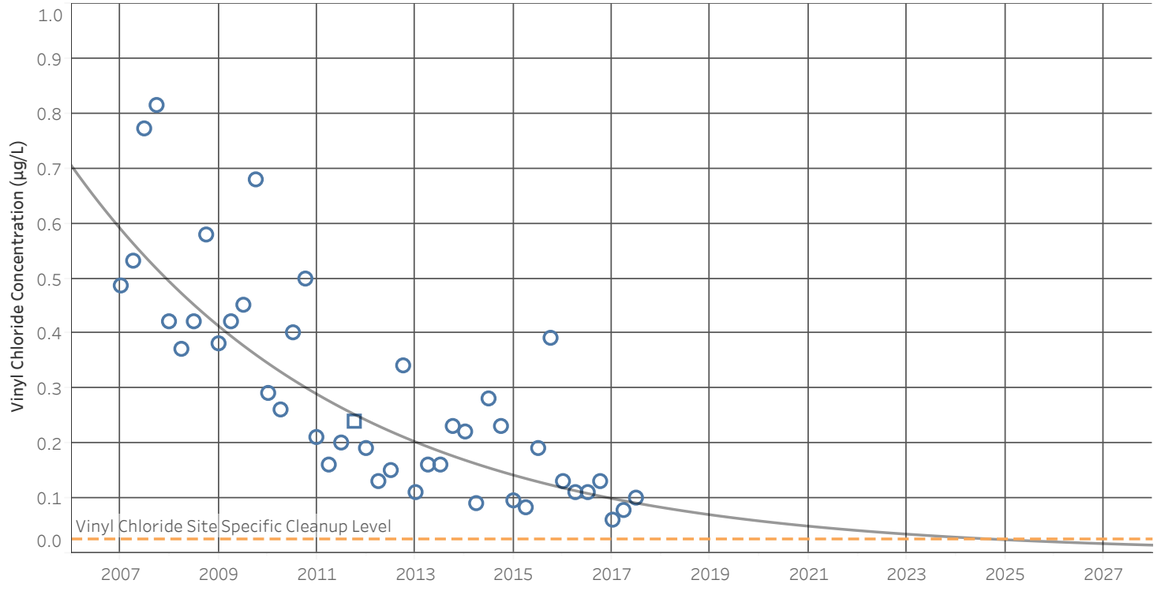
Aspect Consulting
10/29/2017
Trend Plots (VC)

Figure C-2 - Vinyl Chloride Sampling Results
Third Quarter 2017 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

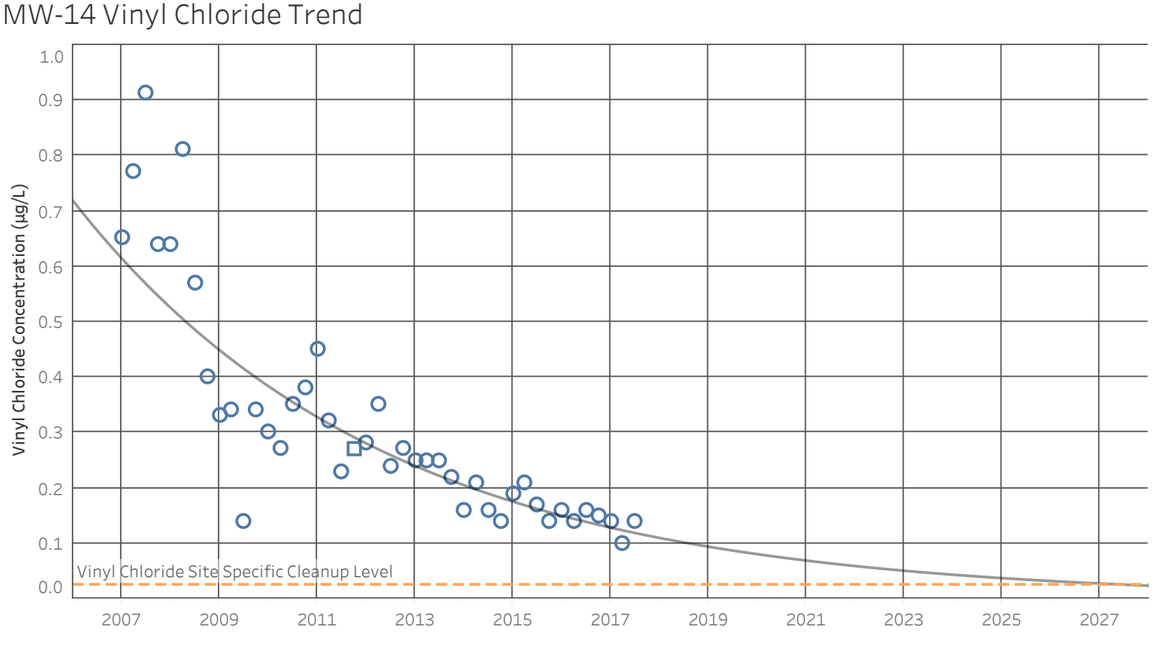
MW-6 Vinyl Chloride Trend



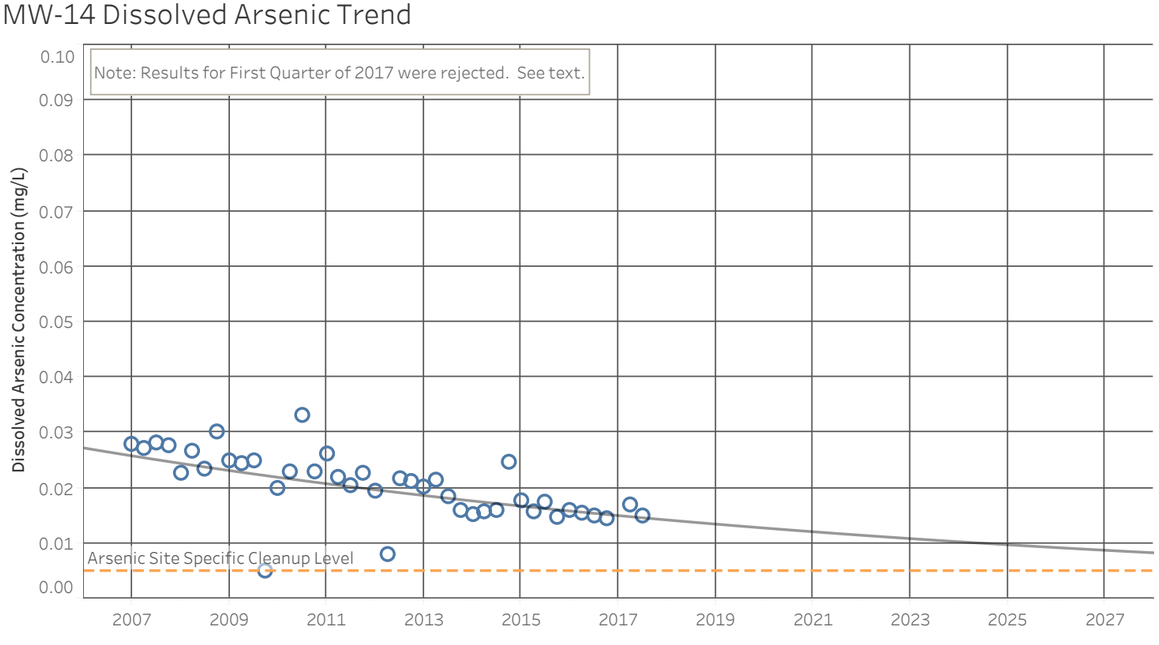
MW-12I Vinyl Chloride Trend



MW-14 Vinyl Chloride Trend



MW-14 Dissolved Arsenic Trend



Note: Non-detected values are shown at 1/2 the reporting limit.
Attentuation curves based on exponential least squares fit to the data.

Result Flags
○ Detected □ J - Estimate ✕ U - Non-Detect

Aspect CONSULTING

Aspect Consulting
10/29/2017
Trend Plots (VC)

Figure C-3 - 10 Year Attenuation Curves
Third Quarter 2017 Environmental Monitoring Report
Hansville Landfill
Kitsap County, WA

Attachment D

Field Forms and Laboratory Reports

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

1760123

Chain of Custody Record

ARI - Tukwila

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: AHP	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23414-6845.1
Client Contact: Aaron Pruitt	Phone: 206-595-6615	E-Mail: betsy.sara@testamericainc.com		Page:

Company: Aspect Consulting, LLC			Job #:
Address: 350 Madison Ave N	Due Date Requested:	Analysis Requested	
City: Bainbridge Island	TAT Requested (days):		
State, Zip: WA, 98110			
Phone:	PO #: Purchase Order not required		
Email: apruitt@aspectconsulting.com	WO #:		
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling		
Site: Washington	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 - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

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)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4/NO3/NO3(IC)	Ortho-phosphate (field filtered)	Dissolved Arsenice (Direct sub to ARI)	NO2/NO3							Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D									
MW-7	7/11/17	1105		W							X	X	X								Short Holds: NO3/NO2(IC), Orthophosphate (IC)
MW-5		1055									X	X	X								
MW-12I		1225									X	F	X								Dissolved Arsenic subbed direct to ARI
SW-1		1230									X	X	X								
SW-4		1315									X	X	X								
SW-6		1400									X	X	X								
MW-13D		1500									X	X	X								
SW-7		1530									X	X	X								
MW-14		1850									X	X	X								
MW-6		1940									X	X	X								
MW20DD		—									Y	X	X								

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:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Aaron Pruitt	7/11/17	Aspect		7/12/17 11:56	ARI
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:

07/24/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: AHP	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23414-6845.1
Client Contact: Aaron Pruitt	Phone: 206-595-CC15	E-Mail: betsy.sara@testamericainc.com		Page:
Company: Aspect Consulting, LLC				Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110				
Phone:	PO #: Purchase Order not required			
Email: apruitt@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling			
Site: Washington	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 - Na2S2SO3
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	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)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4/NO3/NO3(IC)	Ortho-phosphate (field filtered)	Dissolved Arsenice (Direct sub to ARI)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D		
MW-7	7/11/17	905		W			X	X	X	X				Short Holds: NO3/NO2(IC), Orthophosphate (IC)
MW-5	7/11/17	1055					X	X	X	X				
MW-12I		1225					X	X	X	X				Dissolved Arsenic subbed direct to ARI
SW-1		1230					X	X	X	X				o-phos & NO3/NO2 subbed direct to ARI
SW-4		1315					X	X	X	X				
SW-6		1400					X	X	X	X				
MW-13D		1500					X	X	X	X				
SW-7		1530					X	X	X	X				
MW-14		1350					X	X	X	X				
MW-6		1940					X	X	X	X				
MW-20DD		—					X	X	X	X				

280-99146 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:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Aaron Pruitt	7/12/17 1200	Aspect		7/13/17 0845	TAD
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.3°, 3.4°, 5.4°, IR#7, -0.07 7/13/17 GP

07/24/2017

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-6 Page: 1 of 1

Project Name: Hanson Project Number:

Date: 7/11/17

Developed by:

Measuring Point of Well:

Screened Interval (ft. TOC)

Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 72.85

Casing Stickup (ft):

Total Depth (ft TOC):

Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)

Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
1916		0.2	72.85							Start
1923			73.31	13.6	294.5	0.42	7.34	116.9	0.01	
1928			73.31	15.7	313.0	0.46	7.18	116.6	0.09	
1932				16.3	324.2	0.44	7.22	116.7	0.03	
1935				16.6	331.6	0.42	7.20	119.3	0.16	Sample

Total Gallons Purged: Total Casing Volumes Removed:

Ending Water Level (ft TOC): Ending Total Depth (ft TOC):

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
1940									

METHODS

Sampling Equipment with IDs:

Purging Equipment: Decon Equipment:

Disposal of Discharged Water:

Observations/Comments:

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-14 Page: 1 of 1

Project Name: Hansville
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 80.70
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
8:13		.4								Start
18:18			80.86	12.7	235.6	4.05	7.20	95.0	2.81	
18:23			80.87	14.9	242.3	3.41	7.23 ~~6.99~~	92.9	1.48	
18:28			80.87	15.2	244.7	3.15	7.15	93.3	0.64	
18:33			–	15.3	247.0	2.90	7.12	94.0	.45	
18:38				15.6	251.3	2.62	7.15	96.9	.57	
18:42				15.7	251.3	2.48	7.05	100.1	.42	Sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
18:50									

METHODS

Sampling Equipment with IDs:
Purging Equipment: _____ Decon Equipment: _____
Disposal of Discharged Water:
Observations/Comments:

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-7 Page: 1 of 1

Project Name: Hansville GP
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC):
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
				12.7	143.7	10.47	7.94	114.7	3.17	

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
1530									

METHODS

Sampling Equipment with IDs:
Purging Equipment: _____ Decon Equipment: _____
Disposal of Discharged Water:
Observations/Comments: Surface Wtr

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-13D Page: 1 of 1

Project Name: Hansville
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 10.42
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
~~1435~~		0.3 LPM		~~11.1~~	~~201.7~~	0.25		~~219.5~~		start
1440			11.05	11.1	201.7	0.25	7.81	217.5	1.16	
1445			~~11.02~~ 11.03	11.2	201.6	0.13	7.81	~~195.7~~ 194.7	0.32	
1450				11.3	201.7	0.15	7.78	193.3	0.28	
1455				11.3	201.8	0.13	7.76	191.0	0.30	
1500										sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
1500									

METHODS

Sampling Equipment with IDs:
Purging Equipment: _____ Decon Equipment: _____
Disposal of Discharged Water:
Observations/Comments:

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-6 Page: ____ of ____

Project Name: Hansville LF
Project Number: _____
Date: 7/11/17
Developed by: _____
Measuring Point of Well: _____
Screened Interval (ft. TOC) _____
Filter Pack Interval (ft. TOC) _____

Starting Water Level (ft TOC): _____
Casing Stickup (ft): _____
Total Depth (ft TOC): _____
Casing Diameter (inches): _____

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
1406				14.5	168.6	10.23	7.52	343.1	18.3	

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	

METHODS

Sampling Equipment with IDs: _____
Purging Equipment: _____ Decon Equipment: _____
Disposal of Discharged Water: _____
Observations/Comments: _____

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-4 **Page:** ___ of ___

Project Name: Hansville LF

Project Number: _____

Date: 7/11/17

Developed by: _____

Measuring Point of Well: _____

Screened Interval (ft. TOC) _____

Filter Pack Interval (ft. TOC) _____

Starting Water Level (ft TOC): _____

Casing Stickup (ft): _____

Total Depth (ft TOC): _____

Casing Diameter (inches): _____

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)

Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf

2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
1315				11.7	1953	8.35	6.06	166.6	8.91	Sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	

METHODS

Sampling Equipment with IDs: _____

Purging Equipment: _____ Decon Equipment: _____

Disposal of Discharged Water: _____

Observations/Comments: _____

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: SW-1 Page: ___ of ___

Project Name: Hansville

Project Number: _____

Date: 7/11/17

Developed by: _____

Measuring Point of Well: _____

Screened Interval (ft. TOC) _____

Filter Pack Interval (ft. TOC) _____

Starting Water Level (ft TOC): _____

Casing Stickup (ft): _____

Total Depth (ft TOC): _____

Casing Diameter (inches): _____

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)

Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf

2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
1230				11.7	195.3	8.35	7.82	166.6	2.32	Sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	

METHODS

Sampling Equipment with IDs: _____

Purging Equipment: _____ Decon Equipment: _____

Disposal of Discharged Water: _____

Observations/Comments: _____

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-12I Page: 1 of 1

Project Name: Hangville LF
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 9.60
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
11:59		.3								Start
12:04			9.7	10.9	180.9	0.49	7.37	160.3	.14	
12:09			9.7	11.0	182.5	0.23	7.40	148.4	.24	
12:15				11.0	183.2	0.16	7.38	142.7	.12	
12:20				11.0	183.6	0.14	7.38	138.6	.13	sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
12:25	1L	poly		1	N	-			
	500mL	amb		1	N	Sulf			
	"	poly		1	N	-			
	"	"		2	Y	HNO_3			
	250mL	"		1	Y	-			
	40mL	VOA		3	N	HCl			

METHODS

Sampling Equipment with IDs: Grundfos / peristaltic
Purging Equipment: YSI Blue Decon Equipment: Alconox + H_2O
Disposal of Discharged Water: On site
Observations/Comments:

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-5 Page: 1 of 1

Project Name: Hanville LF
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 98.58
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
10:20		.4								start
10:25			98.6	11.3	150.8	9.40	7.69	135.6	.38	
10:30			98.6	11.5	151.7	9.21	7.57	132.4	.62	
10:35				12.4	150.8	8.85	7.47	106.8	.13	
10:40				13.0	150.8	8.80	7.50	105.1	.09	
10:45				13.6	150.6	8.59	7.49	109.7	.08	
10:50				13.9	150.8	8.37	7.49	113.2	.08	sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
10:55	1L	poly		1	N	-			
	500mL	amb		1	N	Sulf			
	1"	poly		1	N	None			
	1"	"		2	Y	HNO_3			
	250mL	"		1	Y	None			
	40mL	VOA		3	N	HCl			

METHODS

Sampling Equipment with IDs: Grndfog / peristaltic
Purging Equipment: YSI flow Decon Equipment: Alconox + H_2O
Disposal of Discharged Water: on site

Observations/Comments:

Aspect CONSULTING

GROUNDWATER SAMPLING RECORD

WELL NUMBER: MW-7 Page: 1 of 1

Project Name: Hansville LF
Project Number:
Date: 7/11/17
Developed by:
Measuring Point of Well:
Screened Interval (ft. TOC)
Filter Pack Interval (ft. TOC)

Starting Water Level (ft TOC): 83.30
Casing Stickup (ft):
Total Depth (ft TOC):
Casing Diameter (inches):

Casing Volume _____ (ft Water) x _____ (Lpfv)(gpf) = _____ (L)(gal)
Casing volumes: 2" = 0.16 gpf 4" = 0.65 gpf 6" = 1.47 gpf
2" = 0.62 Lpf 4" = 2.46 Lpf 6" = 5.56 Lpf

Sample Intake Depth (ft TOC): _____

PURGING MEASUREMENTS

Criteria:		Typical 0.1-0.5 Lpm	Stable and minimal and	na	± 3%	± 10%	± 0.1	± 10 mV	± 10%	
Time	Cumul. Volume (gal or L)	Purge Rate (gpm or Lpm)	Water Level (ft)	Temp. (C or F)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Eh ORP (mv)	Turbidity (NTU)	Comments
8:36		.5				~~-~~ ✓				start
8:42			83.4	12.3	309.1	19.3	7.09	121.1	.78	
8:47			83.4	12.4	305.2	17.5	7.03	119.2	.56	
8:52		83.85	same	12.4	302.8	1.84	6.93	118.2	.42	
8:57				12.5	299.9	1.79	6.99	115.0	.26	
902				12.3	299.6	1.78	6.92	114.6	0.20	
905										Sample

Total Gallons Purged: _____ Total Casing Volumes Removed: _____

Ending Water Level (ft TOC): _____ Ending Total Depth (ft TOC): _____

SAMPLE INVENTORY

Time	Volume	Bottle Type		Quantity	Filtration	Preservation	Appearance		Remarks
							Color	Turbidity & Sediment	
905	1L	Poly		1	N	-			
	500mL	Amb		1	N	Su IF			
	500mL	Poly		1	N	N			
	500mL	Poly		2	Y	HNO_3			
	250mL	Poly		1	Y	N			
	40mL	VOA		3	N	HCl			

METHODS

Sampling Equipment with IDs: Grundfos / peristaltic
Purging Equipment: YSI Blue Decon Equipment: Alconox + H_2O
Disposal of Discharged Water: on site
Observations/Comments:

C:\Users\apruitt\Documents\Groundwater Sampling1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-99146-1

Job Description: Hansville Landfill

For:
Aspect Consulting
350 Madison Ave N
Bainbridge Island, WA 98110

Attention: Mr. Aaron Pruitt

Approved for release.
Betsy A Sara
Project Manager II
7/24/2017 2:25 PM

Betsy A Sara, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0189
betsy.sara@testamericainc.com
07/24/2017

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

CASE NARRATIVE

Client: Aspect Consulting

Project: Hansville Landfill

Report Number: 280-99146-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Sample Receiving

The samples were received on 07/13/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.4º C, 5.3º C and 5.4º C.

One of three hydrochloric preserved VOA vials for sample SW-6 contained a bubble greater than 6 mm. The laboratory used the vials without headspace to perform the analysis. The client was notified on 7/13/2017.

Two sets of three hydrochloric preserved VOA vials for Trip Blanks were received but were not listed on the chain of custody. One set (TB1) was logged for 8260C SIM and TB2 was cancelled per the client's request.

Holding Times

All holding times were within established control limits.

Method Blanks

All Method Blanks were within established control limits.

Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

All MS and MSD samples were within established control limits.

Organics

The analyte 2-chloroethyl vinyl ether cannot be reliably quantitated in acid preserved samples, therefore, the reporting limit for the analyte 2-chloroethyl vinyl ether is not reliable or defensible.

General Comments

The analysis for Method 8260C SIM was performed by TestAmerica Buffalo. Their address and phone number are:
TestAmerica Buffalo
10 Hazelwood Drive, Suite 106
Amherst, NY 14228
716-691-2600

The analysis for Nitrate, Nitrite, Ortho-phosphate Method 300.0, and Dissolved Arsenic Method 200.8 were performed by ARI. Their address and phone number are:
Analytical Resources, Inc.
4611 S.134th Place
Tukwila, WA 98168-3240
206-695-6200

EXECUTIVE SUMMARY - Detections

Client: Aspect Consulting Job Number: 280-99146-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-99146-1	**MW-7**					
Chloride		1.6		1.0	mg/L	300.0
Sulfate		4.4		1.0	mg/L	300.0
Total Alkalinity		150		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		150		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		1.2		1.0	mg/L	SM 5310B
280-99146-2	**MW-5**					
Chloride		2.8		1.0	mg/L	300.0
Sulfate		8.8		1.0	mg/L	300.0
Total Alkalinity		60		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		60		5.0	mg/L	SM 2320B
Dissolved						
Manganese		1.3		1.0	ug/L	6020
280-99146-3	**MW-12I**					
Vinyl chloride		0.099		0.020	ug/L	8260C SIM
Chloride		3.2		1.0	mg/L	300.0
Sulfate		6.3		1.0	mg/L	300.0
Total Alkalinity		87		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		87		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		1.9		1.0	mg/L	SM 5310B
Dissolved						
Manganese		54		1.0	ug/L	6020
280-99146-4	**SW-1**					
Chloride		4.8		1.0	mg/L	300.0
Sulfate		11		1.0	mg/L	300.0
Total Alkalinity		80		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		80		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		1.6		1.0	mg/L	SM 5310B
280-99146-5	**SW-4**					
Chloride		15		1.0	mg/L	300.0
Sulfate		23		1.0	mg/L	300.0
Total Alkalinity		160		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		160		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		4.4		1.0	mg/L	SM 5310B
Dissolved						
Manganese		73		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: Aspect Consulting Job Number: 280-99146-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-99146-6	**SW-6**					
Chloride		4.0		1.0	mg/L	300.0
Sulfate		2.2		1.0	mg/L	300.0
Ammonia as N		0.066		0.030	mg/L	350.1
Total Alkalinity		69		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		69		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		16		1.0	mg/L	SM 5310B
Dissolved						
Manganese		330		1.0	ug/L	6020
280-99146-7	**MW-13D**					
Chloride		6.0		1.0	mg/L	300.0
Sulfate		18		1.0	mg/L	300.0
Total Alkalinity		76		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		76		5.0	mg/L	SM 2320B
Dissolved						
Manganese		25		1.0	ug/L	6020
280-99146-8	**SW-7**					
Chloride		3.6		1.0	mg/L	300.0
Sulfate		6.9		1.0	mg/L	300.0
Total Alkalinity		58		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		58		5.0	mg/L	SM 2320B
Total Organic Carbon - Average		6.6		1.0	mg/L	SM 5310B
Dissolved						
Manganese		5.6		1.0	ug/L	6020
280-99146-9	**MW-14**					
Vinyl chloride		0.14		0.020	ug/L	8260C SIM
Chloride		4.7		1.0	mg/L	300.0
Sulfate		13		1.0	mg/L	300.0
Total Alkalinity		110		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		110		5.0	mg/L	SM 2320B
Dissolved						
Manganese		870		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: Aspect Consulting Job Number: 280-99146-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-99146-10	**MW-6**					
Vinyl chloride		0.15		0.020	ug/L	8260C SIM
Chloride		9.9		1.0	mg/L	300.0
Sulfate		23		1.0	mg/L	300.0
Total Alkalinity		130		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		130		5.0	mg/L	SM 2320B
Dissolved						
Manganese		470		1.0	ug/L	6020
280-99146-11	**MW-20DD**					
Vinyl chloride		0.11		0.020	ug/L	8260C SIM
Chloride		4.7		1.0	mg/L	300.0
Sulfate		13		1.0	mg/L	300.0
Total Alkalinity		110		5.0	mg/L	SM 2320B
Bicarbonate Alkalinity		110		5.0	mg/L	SM 2320B
Dissolved						
Manganese		930		1.0	ug/L	6020

METHOD SUMMARY

Client: Aspect Consulting Job Number: 280-99146-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL DEN		SW846 3005A
Sample Filtration, Field			FIELD_FLTRD
Anions, Ion Chromatography	TAL DEN	MCAWW 300.0	
Nitrogen, Ammonia	TAL DEN	MCAWW 350.1	
Alkalinity	TAL DEN	SM SM 2320B	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260C SIM	
Purge and Trap	TAL BUF		SW846 5030C
General Sub Contract Method	SC0056	Subcontract	

Lab References:

SC0056 = Analytical Resources, Inc

TAL BUF = TestAmerica Buffalo

TAL DEN = TestAmerica Denver

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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.

METHOD / ANALYST SUMMARY

Client: Aspect Consulting

Job Number: 280-99146-1

Method	Analyst	Analyst ID
SW846 8260C SIM	Farrell, Ryan J	RJF
SW846 6020	Trudell, Lynn-Anne M	LMT
MCAWW 300.0	Benson, Alex F	AFB
MCAWW 350.1	Moore, Kevin A	KAM
SM SM 2320B	Duplin, Alysha 1	A1D
SM SM 5310B	Jewell, Connie C	CCJ

SAMPLE SUMMARY

Client: Aspect Consulting

Job Number: 280-99146-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-99146-1	MW-7	Water	07/11/2017 0905	07/13/2017 0845
280-99146-2	MW-5	Water	07/11/2017 1055	07/13/2017 0845
280-99146-3	MW-12I	Water	07/11/2017 1225	07/13/2017 0845
280-99146-4	SW-1	Water	07/11/2017 1230	07/13/2017 0845
280-99146-5	SW-4	Water	07/11/2017 1315	07/13/2017 0845
280-99146-6	SW-6	Water	07/11/2017 1400	07/13/2017 0845
280-99146-7	MW-13D	Water	07/11/2017 1500	07/13/2017 0845
280-99146-8	SW-7	Water	07/11/2017 1530	07/13/2017 0845
280-99146-9	MW-14	Water	07/11/2017 1850	07/13/2017 0845
280-99146-10	MW-6	Water	07/11/2017 1940	07/13/2017 0845
280-99146-11	MW-20DD	Water	07/11/2017 0000	07/13/2017 0845
280-99146-12TB	TB1	Water	07/11/2017 0000	07/13/2017 0845

SAMPLE RESULTS

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: MW-7

Lab Sample ID: 280-99146-1 Date Sampled: 07/11/2017 0905
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3837.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1150			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1150				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	99		50 - 150
TBA-d9 (Surr)	102		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: MW-5

Lab Sample ID: 280-99146-2 Date Sampled: 07/11/2017 1055
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3838.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1214			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1214				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	98		50 - 150
TBA-d9 (Surr)	94		50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-12I**

Lab Sample ID: 280-99146-3
Client Matrix: Water

Date Sampled: 07/11/2017 1225
Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3839.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1238			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1238				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	0.099		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	97		50 - 150
TBA-d9 (Surr)	93		50 - 150

Client: Aspect Consulting | Job Number: 280-99146-1

Client Sample ID: **SW-1**

Lab Sample ID: 280-99146-4 | Date Sampled: 07/11/2017 1230
Client Matrix: Water | Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3840.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1303			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1303				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	100		50 - 150
TBA-d9 (Surr)	98		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: SW-4

Lab Sample ID: 280-99146-5 Date Sampled: 07/11/2017 1315
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3841.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1327			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1327				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	98		50 - 150
TBA-d9 (Surr)	100		50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: SW-6

Lab Sample ID: 280-99146-6
Client Matrix: Water

Date Sampled: 07/11/2017 1400
Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3842.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1351			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1351				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	96		50 - 150
TBA-d9 (Surr)	94		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: MW-13D

Lab Sample ID: 280-99146-7 Date Sampled: 07/11/2017 1500
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3843.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1415			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1415				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	98		50 - 150
TBA-d9 (Surr)	95		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: SW-7

Lab Sample ID: 280-99146-8 Date Sampled: 07/11/2017 1530
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3844.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1440			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1440				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	99		50 - 150
TBA-d9 (Surr)	98		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: MW-14

Lab Sample ID: 280-99146-9 Date Sampled: 07/11/2017 1850
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3845.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1504			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1504				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	0.14		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	98		50 - 150
TBA-d9 (Surr)	101		50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: MW-6

Lab Sample ID: 280-99146-10
Client Matrix: Water

Date Sampled: 07/11/2017 1940
Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3846.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1528			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1528				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	0.15		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	100		50 - 150
TBA-d9 (Surr)	100		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: MW-20DD

Lab Sample ID: 280-99146-11 Date Sampled: 07/11/2017 0000
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3847.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1553			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1553				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	0.11		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	101		50 - 150
TBA-d9 (Surr)	107		50 - 150

Client: Aspect Consulting Job Number: 280-99146-1

Client Sample ID: TB1

Lab Sample ID: 280-99146-12TB Date Sampled: 07/11/2017 0000
Client Matrix: Water Date Received: 07/13/2017 0845

8260C SIM Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C SIM	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	J3848.D
Dilution:	1.0			Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1617			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1617				

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	ND		0.020

Surrogate	%Rec	Qualifier	Acceptance Limits
Dibromofluoromethane (Surr)	100		50 - 150
TBA-d9 (Surr)	100		50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-7**

Lab Sample ID: 280-99146-1
Client Matrix: Water

Date Sampled: 07/11/2017 0905
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	211SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0145			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	ND		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: MW-5

Lab Sample ID: 280-99146-2
Client Matrix: Water

Date Sampled: 07/11/2017 1055
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	216SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0205			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	1.3		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-12I**

Lab Sample ID: 280-99146-3
Client Matrix: Water

Date Sampled: 07/11/2017 1225
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	217SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0208			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	54		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **SW-1**

Lab Sample ID: 280-99146-4
Client Matrix: Water

Date Sampled: 07/11/2017 1230
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	220SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0220			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	ND		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **SW-4**

Lab Sample ID: 280-99146-5
Client Matrix: Water

Date Sampled: 07/11/2017 1315
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	221SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0223			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	73		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **SW-6**

Lab Sample ID: 280-99146-6
Client Matrix: Water

Date Sampled: 07/11/2017 1400
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	222SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0227			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	330		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-13D**

Lab Sample ID: 280-99146-7
Client Matrix: Water

Date Sampled: 07/11/2017 1500
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	223SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0231			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	25		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **SW-7**

Lab Sample ID: 280-99146-8
Client Matrix: Water

Date Sampled: 07/11/2017 1530
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	224SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0235			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	5.6		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-14**

Lab Sample ID: 280-99146-9
Client Matrix: Water

Date Sampled: 07/11/2017 1850
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	225SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0239			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	870		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-6**

Lab Sample ID: 280-99146-10
Client Matrix: Water

Date Sampled: 07/11/2017 1940
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	226SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0242			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	470		1.0

Client: Aspect Consulting

Job Number: 280-99146-1

Client Sample ID: **MW-20DD**

Lab Sample ID: 280-99146-11
Client Matrix: Water

Date Sampled: 07/11/2017 0000
Date Received: 07/13/2017 0845

6020 Metals (ICP/MS)-Dissolved

Analysis Method:	6020	Analysis Batch:	280-381107	Instrument ID:	MT_077
Prep Method:	3005A	Prep Batch:	280-380768	Lab File ID:	227SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0246			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				

Analyte	Result (ug/L)	Qualifier	RL
Manganese	930		1.0

General Chemistry

Client Sample ID: **MW-7**

Lab Sample ID: 280-99146-1 Date Sampled: 07/11/2017 0905
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	1.6		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1158					
Sulfate	4.4		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1158					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1714					
Total Alkalinity	150		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1034					
Bicarbonate Alkalinity	150		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1034					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1034					
Total Organic Carbon - Average	1.2		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 1939					

General Chemistry

Client Sample ID: **MW-5**

Lab Sample ID: 280-99146-2 Date Sampled: 07/11/2017 1055
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	2.8		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1309					
Sulfate	8.8		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1309					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1716					
Total Alkalinity	60		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1039					
Bicarbonate Alkalinity	60		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1039					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1039					
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 1954					

General Chemistry

Client Sample ID: **MW-12I**

Lab Sample ID: 280-99146-3 Date Sampled: 07/11/2017 1225
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	3.2		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1326					
Sulfate	6.3		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1326					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1718					
Total Alkalinity	87		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1057					
Bicarbonate Alkalinity	87		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1057					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1057					
Total Organic Carbon - Average	1.9		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2009					

General Chemistry

Client Sample ID: SW-1

Lab Sample ID: 280-99146-4 Date Sampled: 07/11/2017 1230
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	4.8		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1344					
Sulfate	11		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1344					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1720					
Total Alkalinity	80		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1103					
Bicarbonate Alkalinity	80		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1103					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1103					
Total Organic Carbon - Average	1.6		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2024					

General Chemistry

Client Sample ID: SW-4

Lab Sample ID: 280-99146-5 Date Sampled: 07/11/2017 1315
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	15		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1402					
Sulfate	23		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1402					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1722					
Total Alkalinity	160		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1109					
Bicarbonate Alkalinity	160		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1109					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1109					
Total Organic Carbon - Average	4.4		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2112					

General Chemistry

Client Sample ID: SW-6

Lab Sample ID: 280-99146-6 Date Sampled: 07/11/2017 1400
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	4.0		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1420					
Sulfate	2.2		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1420					
Ammonia as N	0.066		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1724					
Total Alkalinity	69		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1114					
Bicarbonate Alkalinity	69		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1114					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1114					
Total Organic Carbon - Average	16		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2127					

General Chemistry

Client Sample ID: **MW-13D**

Lab Sample ID: 280-99146-7 Date Sampled: 07/11/2017 1500
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	6.0		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1437					
Sulfate	18		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 1437					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1744					
Total Alkalinity	76		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1120					
Bicarbonate Alkalinity	76		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1120					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1120					
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2141					

General Chemistry

Client Sample ID: SW-7

Lab Sample ID: 280-99146-8 Date Sampled: 07/11/2017 1530
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	3.6		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2058					
Sulfate	6.9		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2058					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1746					
Total Alkalinity	58		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1125					
Bicarbonate Alkalinity	58		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1125					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1125					
Total Organic Carbon - Average	6.6		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2156					

General Chemistry

Client Sample ID: **MW-14**

Lab Sample ID: 280-99146-9 Date Sampled: 07/11/2017 1850
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	4.7		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2116					
Sulfate	13		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2116					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1748					
Total Alkalinity	110		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1130					
Bicarbonate Alkalinity	110		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1130					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1130					
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2215					

General Chemistry

Client Sample ID: MW-6

Lab Sample ID: 280-99146-10 Date Sampled: 07/11/2017 1940
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	9.9		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2134					
Sulfate	23		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2134					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1750					
Total Alkalinity	130		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1136					
Bicarbonate Alkalinity	130		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1136					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1136					
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2331					

General Chemistry

Client Sample ID: **MW-20DD**

Lab Sample ID: 280-99146-11 Date Sampled: 07/11/2017 0000
Client Matrix: Water Date Received: 07/13/2017 0845

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	4.7		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2151					
Sulfate	13		mg/L	1.0	1.0	300.0
Analysis Batch: 280-380837	Analysis Date: 07/14/2017 2151					
Ammonia as N	ND		mg/L	0.030	1.0	350.1
Analysis Batch: 280-381062	Analysis Date: 07/14/2017 1752					
Total Alkalinity	110		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1141					
Bicarbonate Alkalinity	110		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1141					
Carbonate Alkalinity	ND		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 280-380956	Analysis Date: 07/15/2017 1141					
Total Organic Carbon - Average	ND		mg/L	1.0	1.0	SM 5310B
Analysis Batch: 280-380960	Analysis Date: 07/14/2017 2316					

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

QUALITY CONTROL RESULTS

Client: Aspect Consulting

Job Number: 280-99146-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:480-368062					
LCS 480-368062/5	Lab Control Sample	T	Water	8260C SIM	
LCSD 480-368062/6	Lab Control Sample Duplicate	T	Water	8260C SIM	
MB 480-368062/8	Method Blank	T	Water	8260C SIM	
280-99146-1	MW-7	T	Water	8260C SIM	
280-99146-2	MW-5	T	Water	8260C SIM	
280-99146-3	MW-12I	T	Water	8260C SIM	
280-99146-4	SW-1	T	Water	8260C SIM	
280-99146-5	SW-4	T	Water	8260C SIM	
280-99146-6	SW-6	T	Water	8260C SIM	
280-99146-7	MW-13D	T	Water	8260C SIM	
280-99146-8	SW-7	T	Water	8260C SIM	
280-99146-9	MW-14	T	Water	8260C SIM	
280-99146-10	MW-6	T	Water	8260C SIM	
280-99146-11	MW-20DD	T	Water	8260C SIM	
280-99146-12TB	TB1	T	Water	8260C SIM	
480-121263-M-8 MS	Matrix Spike	T	Water	8260C SIM	
480-121263-M-8 MSD	Matrix Spike Duplicate	T	Water	8260C SIM	

Report Basis
T = Total

Client: Aspect Consulting Job Number: 280-99146-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-380768					
LCS 280-380768/2-A	Lab Control Sample	R	Water	3005A	
MB 280-380768/1-A	Method Blank	R	Water	3005A	
280-99146-1	MW-7	D	Water	3005A	
280-99146-1MS	Matrix Spike	D	Water	3005A	
280-99146-1MSD	Matrix Spike Duplicate	D	Water	3005A	
280-99146-2	MW-5	D	Water	3005A	
280-99146-3	MW-12I	D	Water	3005A	
280-99146-4	SW-1	D	Water	3005A	
280-99146-5	SW-4	D	Water	3005A	
280-99146-6	SW-6	D	Water	3005A	
280-99146-7	MW-13D	D	Water	3005A	
280-99146-8	SW-7	D	Water	3005A	
280-99146-9	MW-14	D	Water	3005A	
280-99146-10	MW-6	D	Water	3005A	
280-99146-11	MW-20DD	D	Water	3005A	
Analysis Batch:280-381107					
LCS 280-380768/2-A	Lab Control Sample	R	Water	6020	280-380768
MB 280-380768/1-A	Method Blank	R	Water	6020	280-380768
280-99146-1	MW-7	D	Water	6020	280-380768
280-99146-1MS	Matrix Spike	D	Water	6020	280-380768
280-99146-1MSD	Matrix Spike Duplicate	D	Water	6020	280-380768
280-99146-2	MW-5	D	Water	6020	280-380768
280-99146-3	MW-12I	D	Water	6020	280-380768
280-99146-4	SW-1	D	Water	6020	280-380768
280-99146-5	SW-4	D	Water	6020	280-380768
280-99146-6	SW-6	D	Water	6020	280-380768
280-99146-7	MW-13D	D	Water	6020	280-380768
280-99146-8	SW-7	D	Water	6020	280-380768
280-99146-9	MW-14	D	Water	6020	280-380768
280-99146-10	MW-6	D	Water	6020	280-380768
280-99146-11	MW-20DD	D	Water	6020	280-380768

Report Basis
D = Dissolved
R = Total Recoverable

Client: Aspect Consulting Job Number: 280-99146-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-380837					
LCS 280-380837/4	Lab Control Sample	T	Water	300.0	
LCSD 280-380837/5	Lab Control Sample Duplicate	T	Water	300.0	
MB 280-380837/6	Method Blank	T	Water	300.0	
280-99146-1	MW-7	T	Water	300.0	
280-99146-1DU	Duplicate	T	Water	300.0	
280-99146-1MS	Matrix Spike	T	Water	300.0	
280-99146-1MSD	Matrix Spike Duplicate	T	Water	300.0	
280-99146-2	MW-5	T	Water	300.0	
280-99146-3	MW-12I	T	Water	300.0	
280-99146-4	SW-1	T	Water	300.0	
280-99146-5	SW-4	T	Water	300.0	
280-99146-6	SW-6	T	Water	300.0	
280-99146-7	MW-13D	T	Water	300.0	
280-99146-8	SW-7	T	Water	300.0	
280-99146-9	MW-14	T	Water	300.0	
280-99146-10	MW-6	T	Water	300.0	
280-99146-11	MW-20DD	T	Water	300.0	
Analysis Batch:280-380956					
LCS 280-380956/30	Lab Control Sample	T	Water	SM 2320B	
MB 280-380956/31	Method Blank	T	Water	SM 2320B	
280-99119-A-4 DU	Duplicate	T	Water	SM 2320B	
280-99146-1	MW-7	T	Water	SM 2320B	
280-99146-2	MW-5	T	Water	SM 2320B	
280-99146-3	MW-12I	T	Water	SM 2320B	
280-99146-4	SW-1	T	Water	SM 2320B	
280-99146-5	SW-4	T	Water	SM 2320B	
280-99146-6	SW-6	T	Water	SM 2320B	
280-99146-7	MW-13D	T	Water	SM 2320B	
280-99146-8	SW-7	T	Water	SM 2320B	
280-99146-9	MW-14	T	Water	SM 2320B	
280-99146-10	MW-6	T	Water	SM 2320B	
280-99146-11	MW-20DD	T	Water	SM 2320B	

Client: Aspect Consulting Job Number: 280-99146-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-380960					
LCS 280-380960/3	Lab Control Sample	T	Water	SM 5310B	
LCS 280-380960/34	Lab Control Sample	T	Water	SM 5310B	
MB 280-380960/35	Method Blank	T	Water	SM 5310B	
MB 280-380960/4	Method Blank	T	Water	SM 5310B	
280-99102-C-4 MS	Matrix Spike	T	Water	SM 5310B	
280-99102-C-4 MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-99146-1	MW-7	T	Water	SM 5310B	
280-99146-2	MW-5	T	Water	SM 5310B	
280-99146-3	MW-12I	T	Water	SM 5310B	
280-99146-4	SW-1	T	Water	SM 5310B	
280-99146-5	SW-4	T	Water	SM 5310B	
280-99146-6	SW-6	T	Water	SM 5310B	
280-99146-7	MW-13D	T	Water	SM 5310B	
280-99146-8	SW-7	T	Water	SM 5310B	
280-99146-9	MW-14	T	Water	SM 5310B	
280-99146-10	MW-6	T	Water	SM 5310B	
280-99146-11	MW-20DD	T	Water	SM 5310B	
Analysis Batch:280-381062					
LCS 280-381062/59	Lab Control Sample	T	Water	350.1	
LCSD 280-381062/60	Lab Control Sample Duplicate	T	Water	350.1	
MB 280-381062/61	Method Blank	T	Water	350.1	
280-99146-1	MW-7	T	Water	350.1	
280-99146-2	MW-5	T	Water	350.1	
280-99146-3	MW-12I	T	Water	350.1	
280-99146-4	SW-1	T	Water	350.1	
280-99146-5	SW-4	T	Water	350.1	
280-99146-6	SW-6	T	Water	350.1	
280-99146-6MS	Matrix Spike	T	Water	350.1	
280-99146-6MSD	Matrix Spike Duplicate	T	Water	350.1	
280-99146-7	MW-13D	T	Water	350.1	
280-99146-8	SW-7	T	Water	350.1	
280-99146-9	MW-14	T	Water	350.1	
280-99146-10	MW-6	T	Water	350.1	
280-99146-11	MW-20DD	T	Water	350.1	

Report Basis
T = Total

Surrogate Recovery Report

8260C SIM Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	TBA %Rec
280-99146-1	MW-7	99	102
280-99146-2	MW-5	98	94
280-99146-3	MW-12I	97	93
280-99146-4	SW-1	100	98
280-99146-5	SW-4	98	100
280-99146-6	SW-6	96	94
280-99146-7	MW-13D	98	95
280-99146-8	SW-7	99	98
280-99146-9	MW-14	98	101
280-99146-10	MW-6	100	100
280-99146-11	MW-20DD	101	107
280-99146-12	TB1	100	100
MB 480-368062/8		98	97
LCS 480-368062/5		96	100
LCSD 480-368062/6		96	104
480-121263-M-8 MS		101	112
480-121263-M-8 MSD		99	90

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	50-150
TBA = TBA-d9 (Surr)	50-150

Method Blank - Batch: 480-368062 **Method: 8260C SIM**
Preparation: 5030C

Lab Sample ID:	MB 480-368062/8	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	J3836.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1118	Units:	ug/L	Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1118				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Vinyl chloride	ND		0.020

Surrogate	% Rec	Acceptance Limits
Dibromofluoromethane (Surr)	98	50 - 150
TBA-d9 (Surr)	97	50 - 150

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 480-368062 **Method: 8260C SIM**
Preparation: 5030C

LCS Lab Sample ID:	LCS 480-368062/5	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	J3833.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1004	Units:	ug/L	Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1004				25 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 480-368062/6	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	J3834.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1029	Units:	ug/L	Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1029				25 mL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Vinyl chloride	113	118	50 - 150	4	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Dibromofluoromethane (Surr)	96	96	50 - 150
TBA-d9 (Surr)	100	104	50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 480-368062

Method: 8260C SIM
Preparation: 5030C

LCS Lab Sample ID:	LCS 480-368062/5	Units: ug/L	
Client Matrix:	Water		
Dilution:	1.0		
Analysis Date:	07/21/2017 1004		
Prep Date:	07/21/2017 1004		
Leach Date:	N/A		

LCSD Lab Sample ID:	LCSD 480-368062/6
Client Matrix:	Water
Dilution:	1.0
Analysis Date:	07/21/2017 1029
Prep Date:	07/21/2017 1029
Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Vinyl chloride	0.200	0.200	0.227	0.236

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-368062

Method: 8260C SIM
Preparation: 5030C

MS Lab Sample ID:	480-121263-M-8 MS	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	J3855.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1908			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1908				25 mL
Leach Date:	N/A				

MSD Lab Sample ID:	480-121263-M-8 MSD	Analysis Batch:	480-368062	Instrument ID:	HP5973J
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	J3856.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	07/21/2017 1932			Final Weight/Volume:	25 mL
Prep Date:	07/21/2017 1932				25 mL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Vinyl chloride	129	122	50 - 150	5	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Dibromofluoromethane (Surr)	101	99	50 - 150
TBA-d9 (Surr)	112	90	50 - 150

Client: Aspect Consulting

Job Number: 280-99146-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-368062

Method: 8260C SIM
Preparation: 5030C

MS Lab Sample ID:	480-121263-M-8 MS	Units: ug/L	MSD Lab Sample ID:	480-121263-M-8 MSD	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	07/21/2017 1908		Analysis Date:	07/21/2017 1932	
Prep Date:	07/21/2017 1908		Prep Date:	07/21/2017 1932	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	ND	0.200	0.200	0.264	0.250

Client: Aspect Consulting Job Number: 280-99146-1

Method Blank - Batch: 280-380768

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 280-380768/1-A	Analysis Batch:	280-381107	Instrument ID:	MT_077
Client Matrix:	Water	Prep Batch:	280-380768	Lab File ID:	209_BLK.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0138	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Manganese	ND		1.0

Lab Control Sample - Batch: 280-380768

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 280-380768/2-A	Analysis Batch:	280-381107	Instrument ID:	MT_077
Client Matrix:	Water	Prep Batch:	280-380768	Lab File ID:	210_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0141	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese	40.0	44.2	111	85 - 117	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380768

Method: 6020
Preparation: 3005A
Dissolved

MS Lab Sample ID:	280-99146-1	Analysis Batch:	280-381107	Instrument ID:	MT_077
Client Matrix:	Water	Prep Batch:	280-380768	Lab File ID:	213SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0153			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				
Leach Date:	N/A				

MSD Lab Sample ID:	280-99146-1	Analysis Batch:	280-381107	Instrument ID:	MT_077
Client Matrix:	Water	Prep Batch:	280-380768	Lab File ID:	214SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/18/2017 0157			Final Weight/Volume:	50 mL
Prep Date:	07/17/2017 0703				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Manganese	101	107	85 - 117	5	20		

Client: Aspect Consulting

Job Number: 280-99146-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380768

Method: 6020
Preparation: 3005A
Dissolved

MS Lab Sample ID:	280-99146-1	Units: ug/L	MSD Lab Sample ID:	280-99146-1	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	07/18/2017 0153		Analysis Date:	07/18/2017 0157	
Prep Date:	07/17/2017 0703		Prep Date:	07/17/2017 0703	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Manganese	ND	40.0	40.0	41.2	43.4

Method Blank - Batch: 280-380837

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 280-380837/6	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	06.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1037	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Chloride	ND		1.0
Sulfate	ND		1.0

Method Reporting Limit Check - Batch: 280-380837

Method: 300.0
Preparation: N/A

Lab Sample ID:	MRL 280-380837/3	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	03.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 0944	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	2.50	ND	107	50 - 150	
Sulfate	2.50	ND	107	50 - 150	

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-380837

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 280-380837/4	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	04.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1001	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-380837/5	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	05.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1019	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Chloride	103	104	90 - 110	0	10		
Sulfate	103	103	90 - 110	0	10		

Client: Aspect Consulting

Job Number: 280-99146-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-380837

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 280-380837/4	Units: mg/L	LCSD Lab Sample ID:	LCSD 280-380837/5	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	07/14/2017 1001		Analysis Date:	07/14/2017 1019	
Prep Date:	N/A		Prep Date:	N/A	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Chloride	100	100	103	104
Sulfate	100	100	103	103

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380837

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	280-99146-1	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	09.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1233			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-99146-1	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	10.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1251			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	109	110	80 - 120	1	20		
Sulfate	113	114	80 - 120	1	20		

Client: Aspect Consulting

Job Number: 280-99146-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380837

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	280-99146-1	Units: mg/L	MSD Lab Sample ID:	280-99146-1	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	07/14/2017 1233		Analysis Date:	07/14/2017 1251	
Prep Date:	N/A		Prep Date:	N/A	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Chloride	1.6	25.0	25.0	28.9	29.2
Sulfate	4.4	25.0	25.0	32.5	32.8

Duplicate - Batch: 280-380837

Method: 300.0
Preparation: N/A

Lab Sample ID:	280-99146-1	Analysis Batch:	280-380837	Instrument ID:	WC_IonChrom6
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	08.0000.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/14/2017 1216	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	1.6	1.63	0.6	15	
Sulfate	4.4	4.30	1	15	

Method Blank - Batch: 280-381062

Method: 350.1
Preparation: N/A

Lab Sample ID:	MB 280-381062/61	Analysis Batch:	280-381062	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\071417.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 1644	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Ammonia as N	ND		0.030

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-381062

Method: 350.1
Preparation: N/A

LCS Lab Sample ID:	LCS 280-381062/59	Analysis Batch:	280-381062	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\071417.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	07/14/2017 1640	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-381062/60	Analysis Batch:	280-381062	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\071417.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	07/14/2017 1642	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia as N	100	102	90 - 110	2	10		

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 280-381062

Method: 350.1
Preparation: N/A

LCS Lab Sample ID:	LCS 280-381062/59	Units:	mg/L	LCSD Lab Sample ID:	LCSD 280-381062/60
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	07/14/2017 1640			Analysis Date:	07/14/2017 1642
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Ammonia as N	2.50	2.50	2.49	2.54

Client: Aspect Consulting

Job Number: 280-99146-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-381062

Method: 350.1
Preparation: N/A

MS Lab Sample ID:	280-99146-6	Analysis Batch:	280-381062	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\071417.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/14/2017 1740			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-99146-6	Analysis Batch:	280-381062	Instrument ID:	WC_Alp 3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\071417.RS
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/14/2017 1742			Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia as N	109	110	90 - 110	0	10		

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-381062

Method: 350.1
Preparation: N/A

MS Lab Sample ID:	280-99146-6	Units: mg/L		MSD Lab Sample ID:	280-99146-6
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	07/14/2017 1740			Analysis Date:	07/14/2017 1742
Prep Date:	N/A			Prep Date:	N/A
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Ammonia as N	0.066	1.00	1.00	1.16	1.16

Client: Aspect Consulting

Job Number: 280-99146-1

Method Blank - Batch: 280-380956

Method: SM 2320B
Preparation: N/A

Lab Sample ID:	MB 280-380956/31	Analysis Batch:	280-380956	Instrument ID:	WC_AT2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	alk 071517.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/15/2017 0941	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Total Alkalinity	ND		5.0
Bicarbonate Alkalinity	ND		5.0
Carbonate Alkalinity	ND		5.0

Lab Control Sample - Batch: 280-380956

Method: SM 2320B
Preparation: N/A

Lab Sample ID:	LCS 280-380956/30	Analysis Batch:	280-380956	Instrument ID:	WC_AT2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	alk 071517.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/15/2017 0935	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Alkalinity	200	192	96	90 - 110	

Duplicate - Batch: 280-380956

Method: SM 2320B
Preparation: N/A

Lab Sample ID:	280-99119-A-4 DU	Analysis Batch:	280-380956	Instrument ID:	WC_AT2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	alk 071517.TXT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/15/2017 0953	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Alkalinity	260	253	2	10	

Method Blank - Batch: 280-380960 **Method: SM 5310B**
Preparation: N/A

Lab Sample ID:	MB 280-380960/4	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 1447	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Total Organic Carbon - Average	ND		1.0

Method Blank - Batch: 280-380960 **Method: SM 5310B**
Preparation: N/A

Lab Sample ID:	MB 280-380960/35	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 2247	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Total Organic Carbon - Average	ND		1.0

Lab Control Sample - Batch: 280-380960 **Method: SM 5310B**
Preparation: N/A

Lab Sample ID:	LCS 280-380960/3	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 1432	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	23.4	93	88 - 112	

Lab Control Sample - Batch: 280-380960 **Method: SM 5310B**
Preparation: N/A

Lab Sample ID:	LCS 280-380960/34	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 2232	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon - Average	25.0	23.1	92	88 - 112	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380960 **Method: SM 5310B**
Preparation: N/A

MS Lab Sample ID:	280-99102-C-4 MS	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 1855			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-99102-C-4 MSD	Analysis Batch:	280-380960	Instrument ID:	WC_SHI3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	071417.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/14/2017 1910			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Total Organic Carbon - Average	94	94	88 - 112	0	15		

Client: Aspect Consulting

Job Number: 280-99146-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-380960

Method: SM 5310B
Preparation: N/A

MS Lab Sample ID:	280-99102-C-4 MS	Units: mg/L	MSD Lab Sample ID:	280-99102-C-4 MSD	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	07/14/2017 1855		Analysis Date:	07/14/2017 1910	
Prep Date:	N/A		Prep Date:	N/A	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Total Organic Carbon - Average	ND	25.0	25.0	23.8	23.8

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: 280-99146-1 **Client ID: MW-7**

Sample Date/Time: 07/11/2017 09:05 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-1		480-368062		07/21/2017 11:50	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-1		480-368062		07/21/2017 11:50	1	TAL BUF	RJF
P:3005A	280-99146-C-1-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-1-A		280-381107	280-380768	07/18/2017 01:45	1	TAL DEN	LMT
A:300.0	280-99146-A-1		280-380837		07/14/2017 11:58	1	TAL DEN	AFB
A:350.1	280-99146-B-1		280-381062		07/14/2017 17:14	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-1		280-380956		07/15/2017 10:34	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-1		280-380960		07/14/2017 19:39	1	TAL DEN	CCJ

Lab ID: 280-99146-1 MS **Client ID: MW-7**

Sample Date/Time: 07/11/2017 09:05 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-99146-C-1-B MS		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-1-B MS		280-381107	280-380768	07/18/2017 01:53	1	TAL DEN	LMT
A:300.0	280-99146-A-1 MS		280-380837		07/14/2017 12:33	1	TAL DEN	AFB

Lab ID: 280-99146-1 MSD **Client ID: MW-7**

Sample Date/Time: 07/11/2017 09:05 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3005A	280-99146-C-1-C MSD		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-1-C MSD		280-381107	280-380768	07/18/2017 01:57	1	TAL DEN	LMT
A:300.0	280-99146-A-1 MSD		280-380837		07/14/2017 12:51	1	TAL DEN	AFB

Lab ID: 280-99146-1 DU **Client ID: MW-7**

Sample Date/Time: 07/11/2017 09:05 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	280-99146-A-1 DU		280-380837		07/14/2017 12:16	1	TAL DEN	AFB

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: 280-99146-2 **Client ID: MW-5**

Sample Date/Time: 07/11/2017 10:55 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-2		480-368062		07/21/2017 12:14	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-2		480-368062		07/21/2017 12:14	1	TAL BUF	RJF
P:3005A	280-99146-C-2-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-2-A		280-381107	280-380768	07/18/2017 02:05	1	TAL DEN	LMT
A:300.0	280-99146-A-2		280-380837		07/14/2017 13:09	1	TAL DEN	AFB
A:350.1	280-99146-B-2		280-381062		07/14/2017 17:16	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-2		280-380956		07/15/2017 10:39	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-2		280-380960		07/14/2017 19:54	1	TAL DEN	CCJ

Lab ID: 280-99146-3 **Client ID: MW-12I**

Sample Date/Time: 07/11/2017 12:25 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-3		480-368062		07/21/2017 12:38	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-3		480-368062		07/21/2017 12:38	1	TAL BUF	RJF
P:3005A	280-99146-C-3-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-3-A		280-381107	280-380768	07/18/2017 02:08	1	TAL DEN	LMT
A:300.0	280-99146-A-3		280-380837		07/14/2017 13:26	1	TAL DEN	AFB
A:350.1	280-99146-B-3		280-381062		07/14/2017 17:18	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-3		280-380956		07/15/2017 10:57	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-3		280-380960		07/14/2017 20:09	1	TAL DEN	CCJ

Lab ID: 280-99146-4 **Client ID: SW-1**

Sample Date/Time: 07/11/2017 12:30 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-4		480-368062		07/21/2017 13:03	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-4		480-368062		07/21/2017 13:03	1	TAL BUF	RJF
P:3005A	280-99146-C-4-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-4-A		280-381107	280-380768	07/18/2017 02:20	1	TAL DEN	LMT
A:300.0	280-99146-A-4		280-380837		07/14/2017 13:44	1	TAL DEN	AFB
A:350.1	280-99146-B-4		280-381062		07/14/2017 17:20	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-4		280-380956		07/15/2017 11:03	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-4		280-380960		07/14/2017 20:24	1	TAL DEN	CCJ

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: 280-99146-5 **Client ID: SW-4**

Sample Date/Time: 07/11/2017 13:15 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-5		480-368062		07/21/2017 13:27	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-5		480-368062		07/21/2017 13:27	1	TAL BUF	RJF
P:3005A	280-99146-C-5-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-5-A		280-381107	280-380768	07/18/2017 02:23	1	TAL DEN	LMT
A:300.0	280-99146-A-5		280-380837		07/14/2017 14:02	1	TAL DEN	AFB
A:350.1	280-99146-B-5		280-381062		07/14/2017 17:22	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-5		280-380956		07/15/2017 11:09	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-5		280-380960		07/14/2017 21:12	1	TAL DEN	CCJ

Lab ID: 280-99146-6 **Client ID: SW-6**

Sample Date/Time: 07/11/2017 14:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-6		480-368062		07/21/2017 13:51	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-6		480-368062		07/21/2017 13:51	1	TAL BUF	RJF
P:3005A	280-99146-C-6-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-6-A		280-381107	280-380768	07/18/2017 02:27	1	TAL DEN	LMT
A:300.0	280-99146-A-6		280-380837		07/14/2017 14:20	1	TAL DEN	AFB
A:350.1	280-99146-B-6		280-381062		07/14/2017 17:24	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-6		280-380956		07/15/2017 11:14	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-6		280-380960		07/14/2017 21:27	1	TAL DEN	CCJ

Lab ID: 280-99146-6 MS **Client ID: SW-6**

Sample Date/Time: 07/11/2017 14:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:350.1	280-99146-B-6 MS		280-381062		07/14/2017 17:40	1	TAL DEN	KAM

Lab ID: 280-99146-6 MSD **Client ID: SW-6**

Sample Date/Time: 07/11/2017 14:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:350.1	280-99146-B-6 MSD		280-381062		07/14/2017 17:42	1	TAL DEN	KAM

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: 280-99146-7 **Client ID: MW-13D**

Sample Date/Time: 07/11/2017 15:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-7		480-368062		07/21/2017 14:15	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-7		480-368062		07/21/2017 14:15	1	TAL BUF	RJF
P:3005A	280-99146-C-7-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-7-A		280-381107	280-380768	07/18/2017 02:31	1	TAL DEN	LMT
A:300.0	280-99146-A-7		280-380837		07/14/2017 14:37	1	TAL DEN	AFB
A:350.1	280-99146-B-7		280-381062		07/14/2017 17:44	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-7		280-380956		07/15/2017 11:20	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-7		280-380960		07/14/2017 21:41	1	TAL DEN	CCJ

Lab ID: 280-99146-8 **Client ID: SW-7**

Sample Date/Time: 07/11/2017 15:30 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-8		480-368062		07/21/2017 14:40	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-8		480-368062		07/21/2017 14:40	1	TAL BUF	RJF
P:3005A	280-99146-C-8-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-8-A		280-381107	280-380768	07/18/2017 02:35	1	TAL DEN	LMT
A:300.0	280-99146-A-8		280-380837		07/14/2017 20:58	1	TAL DEN	AFB
A:350.1	280-99146-B-8		280-381062		07/14/2017 17:46	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-8		280-380956		07/15/2017 11:25	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-8		280-380960		07/14/2017 21:56	1	TAL DEN	CCJ

Lab ID: 280-99146-9 **Client ID: MW-14**

Sample Date/Time: 07/11/2017 18:50 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-9		480-368062		07/21/2017 15:04	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-9		480-368062		07/21/2017 15:04	1	TAL BUF	RJF
P:3005A	280-99146-C-9-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-9-A		280-381107	280-380768	07/18/2017 02:39	1	TAL DEN	LMT
A:300.0	280-99146-A-9		280-380837		07/14/2017 21:16	1	TAL DEN	AFB
A:350.1	280-99146-B-9		280-381062		07/14/2017 17:48	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-9		280-380956		07/15/2017 11:30	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-9		280-380960		07/14/2017 22:15	1	TAL DEN	CCJ

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: 280-99146-10 **Client ID: MW-6**

Sample Date/Time: 07/11/2017 19:40 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-10		480-368062		07/21/2017 15:28	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-10		480-368062		07/21/2017 15:28	1	TAL BUF	RJF
P:3005A	280-99146-C-10-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-10-A		280-381107	280-380768	07/18/2017 02:42	1	TAL DEN	LMT
A:300.0	280-99146-A-10		280-380837		07/14/2017 21:34	1	TAL DEN	AFB
A:350.1	280-99146-B-10		280-381062		07/14/2017 17:50	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-10		280-380956		07/15/2017 11:36	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-10		280-380960		07/14/2017 23:31	1	TAL DEN	CCJ

Lab ID: 280-99146-11 **Client ID: MW-20DD**

Sample Date/Time: 07/11/2017 00:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-E-11		480-368062		07/21/2017 15:53	1	TAL BUF	RJF
A:8260C SIM	280-99146-E-11		480-368062		07/21/2017 15:53	1	TAL BUF	RJF
P:3005A	280-99146-C-11-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	280-99146-C-11-A		280-381107	280-380768	07/18/2017 02:46	1	TAL DEN	LMT
A:300.0	280-99146-A-11		280-380837		07/14/2017 21:51	1	TAL DEN	AFB
A:350.1	280-99146-B-11		280-381062		07/14/2017 17:52	1	TAL DEN	KAM
A:SM 2320B	280-99146-A-11		280-380956		07/15/2017 11:41	1	TAL DEN	A1D
A:SM 5310B	280-99146-B-11		280-380960		07/14/2017 23:16	1	TAL DEN	CCJ

Lab ID: 280-99146-12 **Client ID: TB1**

Sample Date/Time: 07/11/2017 00:00 Received Date/Time: 07/13/2017 08:45

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	280-99146-C-12		480-368062		07/21/2017 16:17	1	TAL BUF	RJF
A:8260C SIM	280-99146-C-12		480-368062		07/21/2017 16:17	1	TAL BUF	RJF

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	MB 480-368062/8		480-368062		07/21/2017 11:18	1	TAL BUF	RJF
A:8260C SIM	MB 480-368062/8		480-368062		07/21/2017 11:18	1	TAL BUF	RJF
P:3005A	MB 280-380768/1-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	MB 280-380768/1-A		280-381107	280-380768	07/18/2017 01:38	1	TAL DEN	LMT
A:300.0	MB 280-380837/6		280-380837		07/14/2017 10:37	1	TAL DEN	AFB
A:350.1	MB 280-381062/61		280-381062		07/14/2017 16:44	1	TAL DEN	KAM
A:SM 2320B	MB 280-380956/31		280-380956		07/15/2017 09:41	1	TAL DEN	A1D
A:SM 5310B	MB 280-380960/4		280-380960		07/14/2017 14:47	1	TAL DEN	CCJ
A:SM 5310B	MB 280-380960/35		280-380960		07/14/2017 22:47	1	TAL DEN	CCJ

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	LCS 480-368062/5		480-368062		07/21/2017 10:04	1	TAL BUF	RJF
A:8260C SIM	LCS 480-368062/5		480-368062		07/21/2017 10:04	1	TAL BUF	RJF
P:3005A	LCS 280-380768/2-A		280-381107	280-380768	07/17/2017 07:03	1	TAL DEN	TEB
A:6020	LCS 280-380768/2-A		280-381107	280-380768	07/18/2017 01:41	1	TAL DEN	LMT
A:300.0	LCS 280-380837/4		280-380837		07/14/2017 10:01	1	TAL DEN	AFB
A:350.1	LCS 280-381062/59		280-381062		07/14/2017 16:40	1	TAL DEN	KAM
A:SM 2320B	LCS 280-380956/30		280-380956		07/15/2017 09:35	1	TAL DEN	A1D
A:SM 5310B	LCS 280-380960/3		280-380960		07/14/2017 14:32	1	TAL DEN	CCJ
A:SM 5310B	LCS 280-380960/34		280-380960		07/14/2017 22:32	1	TAL DEN	CCJ

Lab ID: LCSD **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	LCSD 480-368062/6		480-368062		07/21/2017 10:29	1	TAL BUF	RJF
A:8260C SIM	LCSD 480-368062/6		480-368062		07/21/2017 10:29	1	TAL BUF	RJF
A:300.0	LCSD 280-380837/5		280-380837		07/14/2017 10:19	1	TAL DEN	AFB
A:350.1	LCSD 280-381062/60		280-381062		07/14/2017 16:42	1	TAL DEN	KAM

Lab ID: MRL **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:300.0	MRL 280-380837/3		280-380837		07/14/2017 09:44	1	TAL DEN	AFB

Client: Aspect Consulting Job Number: 280-99146-1

Laboratory Chronicle

Lab ID: MS **Client ID: N/A**

Sample Date/Time: 07/18/2017 17:25 Received Date/Time: 07/19/2017 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	480-121263-M-8 MS		480-368062		07/21/2017 19:08	1	TAL BUF	RJF
A:8260C SIM	480-121263-M-8 MS		480-368062		07/21/2017 19:08	1	TAL BUF	RJF
A:SM 5310B	280-99102-C-4 MS		280-380960		07/14/2017 18:55	1	TAL DEN	CCJ

Lab ID: MSD **Client ID: N/A**

Sample Date/Time: 07/18/2017 17:25 Received Date/Time: 07/19/2017 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030C	480-121263-M-8 MSD		480-368062		07/21/2017 19:32	1	TAL BUF	RJF
A:8260C SIM	480-121263-M-8 MSD		480-368062		07/21/2017 19:32	1	TAL BUF	RJF
A:SM 5310B	280-99102-C-4 MSD		280-380960		07/14/2017 19:10	1	TAL DEN	CCJ

Lab ID: DU **Client ID: N/A**

Sample Date/Time: 07/11/2017 10:45 Received Date/Time: 07/12/2017 08:40

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:SM 2320B	280-99119-A-4 DU		280-380956		07/15/2017 09:53	1	TAL DEN	A1D

Lab References:
TAL BUF = TestAmerica Buffalo
TAL DEN = TestAmerica Denver

Analytical Resources, Incorporated
Analytical Chemists and Consultants

20 July 2017

Betsy Sara
Test America - Denver
4955 Yarrow Street
Arvada, CO 80002

RE: Hansville

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
17G0123	N/A

Kelly Bottem

Digitally signed by Kelly Bottem
DN: c=US, st=Washington, l=Tukwila, o=Analytical Resources, Inc., ou=Client Services, cn=Kelly Bottem, email=kellyb@arilabs.com
Date: 2017.07.20 16:27:56 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the reqirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

~~TestAmerica~~ Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

1760123

Chain of Custody Record

ARI - Tukwila

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: AHP	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23414-6845.1
Client Contact: Aaron Pruitt	Phone: 206-595-6615	E-Mail: betsy.sara@testamericainc.com		Page:
Company: Aspect Consulting, LLC				Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110				
Phone:	PO #: Purchase Order not required			
Email: apruitt@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling			
Site: Washington	SSOW#:			

Analysis Requested

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)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4/NO3/NO3(IC)	Ortho-phosphate (field filtered)	Dissolved Arsenice (Direct sub to ARI)	NO2/NO3	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D			
MW-7	7/11/17	1105		W							X	X	X		Short Holds: NO3/NO2(IC), Orthophosphate (IC)
MW-5		1055									X	X	X		
MW-12I		1225									X	F	X		Dissolved Arsenic subbed direct to ARI
SW-1		1230									X	X	X		
SW-4		1315									X	X	X		
SW-6		1400									X	X	X		
MW-13D		1500									X	X	X		
SW-7		1530									X	X	X		
MW-14		1850									X	X	X		
MW-6		1940									X	X	X		
MW20DD		—									Y	X	X		

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 - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

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:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Aaron Pruitt	7/11/17	Aspect		7/12/17 11:56	ARI
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

07/24/2017

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: TestAmerica Project Name: Hansville

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 1760123 Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 7.4

Time: _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00526

Cooler Accepted by: BF Date: 7/12/2017 Time: 11:56

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		YES	(NO)
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: B.H. Date: 7/12/17 Time: 13:06

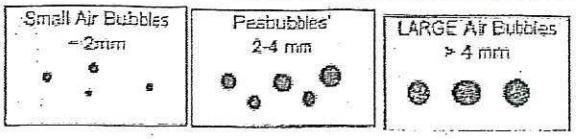
*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Number of containers not given.

By: B.H. Date: 7/12/17



Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

1760123

Cooler#: 1 Temperature(°C): 7.4

Sample ID	Bottle Count	Bottle Type
Samples received above 6°C		

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Cooler#: Temperature(°C):

Sample ID	Bottle Count	Bottle Type

Completed by: PM Date: 7/12/2017 Time: 11:56

WORK ORDER

17G0123

Client: Test America - Denver	**Project Manager:** Amanda Volgardsen
Project: Hansville	**Project Number:** 28006013- 2Q/3Q/4Q Sampling

Preservation Confirmation

Container ID	Container Type		pH
17G0123-01 A	Miscellaneous Container		
17G0123-01 B	Miscellaneous Container		
17G0123-01 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-02 A	Miscellaneous Container		
17G0123-02 B	Miscellaneous Container		
17G0123-02 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-03 A	Miscellaneous Container		
17G0123-03 B	Miscellaneous Container		
17G0123-03 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-04 A	Miscellaneous Container		
17G0123-04 B	Miscellaneous Container		
17G0123-04 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-05 A	Miscellaneous Container		
17G0123-05 B	Miscellaneous Container		
17G0123-05 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-06 A	Miscellaneous Container		
17G0123-06 B	Miscellaneous Container		
17G0123-06 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-07 A	Miscellaneous Container		
17G0123-07 B	Miscellaneous Container		
17G0123-07 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-08 A	Miscellaneous Container		
17G0123-08 B	Miscellaneous Container		
17G0123-08 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-09 A	Miscellaneous Container		
17G0123-09 B	Miscellaneous Container		
17G0123-09 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-10 A	Miscellaneous Container		
17G0123-10 B	Miscellaneous Container		
17G0123-10 C	Miscellaneous Container	HNO_3	< 2 Pass
17G0123-11 A	Miscellaneous Container		

B.H. 7/12/17

Reviewed By Date

WORK ORDER

17G0123

Client: Test America - Denver	**Project Manager: Amanda Volgardsen**
Project: Hansville	**Project Number: 28006013- 2Q/3Q/4Q Sampling**

17G0123-11 B	Miscellaneous Container	
17G0123-11 C	Miscellaneous Container	HNO_3 <2 Pass

B.H.
Preservation Confirmed By

7/12/17
Date

B.H.
Reviewed By

7/12/17
Date

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-7	17G0123-01	Water	11-Jul-2017 09:05	12-Jul-2017 11:56
MW-5	17G0123-02	Water	11-Jul-2017 10:55	12-Jul-2017 11:56
MW-12I	17G0123-03	Water	11-Jul-2017 12:25	12-Jul-2017 11:56
SW-1	17G0123-04	Water	11-Jul-2017 12:30	12-Jul-2017 11:56
SW-4	17G0123-05	Water	11-Jul-2017 13:15	12-Jul-2017 11:56
SW-6	17G0123-06	Water	11-Jul-2017 14:00	12-Jul-2017 11:56
MW-13D	17G0123-07	Water	11-Jul-2017 15:00	12-Jul-2017 11:56
SW-7	17G0123-08	Water	11-Jul-2017 15:30	12-Jul-2017 11:56
MW-14	17G0123-09	Water	11-Jul-2017 18:50	12-Jul-2017 11:56
MW-6	17G0123-10	Water	11-Jul-2017 19:40	12-Jul-2017 11:56
MW-20DD	17G0123-11	Water	11-Jul-2017 00:00	12-Jul-2017 11:56

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

Case Narrative

Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-7

17G0123-01 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 09:05
Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:30

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00110**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-7

17G0123-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 09:05
Instrument: DX500 — Analyzed: 12-Jul-2017 18:13

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.555**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-5

17G0123-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 10:55
Instrument: ICPMS1 — Analyzed: 14-Jul-2017 11:29

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00199**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-5

17G0123-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 10:55
Instrument: DX500 — Analyzed: 12-Jul-2017 19:04

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**1.01**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-12I

17G0123-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 12:25

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 11:32

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00228**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-12I

17G0123-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 12:25

Instrument: DX500 — Analyzed: 12-Jul-2017 19:20

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**2.18**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-1

17G0123-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 12:30

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 11:35

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00156**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-1

17G0123-04 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 12:30

Instrument: DX500 — Analyzed: 12-Jul-2017 19:37

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**1.55**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-4

17G0123-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 13:15

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 11:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00197**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-4

17G0123-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 13:15

Instrument: DX500 — Analyzed: 12-Jul-2017 19:54

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.931**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-6

17G0123-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 14:00

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00811**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-6

17G0123-06 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 14:00

Instrument: DX500 — Analyzed: 12-Jul-2017 20:44

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.218**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-13D

17G0123-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 15:00

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:15

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00437**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-13D

17G0123-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 15:00
Instrument: DX500 — Analyzed: 12-Jul-2017 21:01

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	**0.10**	mg-P/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-7

17G0123-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 15:30

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:18

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00158**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

SW-7

17G0123-08 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 15:30

Instrument: DX500 — Analyzed: 12-Jul-2017 21:18

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.763**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-14

17G0123-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 18:50

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.0150**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-14

17G0123-09 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 18:50

Instrument: DX500 — Analyzed: 12-Jul-2017 21:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.224**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	**0.12**	mg-P/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-6

17G0123-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 19:40

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:24

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 — Sample Size: 25 mL
Prepared: 13-Jul-2017 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.00216**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-6

17G0123-10 (Water)

Wet Chemistry

Method: EPA 300.0
Instrument: DX500

Sampled: 07/11/2017 19:40
Analyzed: 12-Jul-2017 21:51

Sample Preparation:
Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234
Prepared: 12-Jul-2017
Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**1.37**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	**0.355**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	ND	mg-P/L	U

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-20DD

17G0123-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 07/11/2017 00:00

Instrument: ICPMS1 — Analyzed: 14-Jul-2017 12:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BFG0248 Sample Size: 25 mL
Prepared: 13-Jul-2017 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.000200	**0.0144**	mg/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

MW-20DD

17G0123-11 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 07/11/2017 00:00
Instrument: DX500 — Analyzed: 12-Jul-2017 22:08

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BFG0234 — Sample Size: 5 mL
Prepared: 12-Jul-2017 — Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	**0.230**	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	ND	mg-N/L	U

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Orthophosphorus	1426-54-42	1	0.10	**0.12**	mg-P/L	

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BFG0248 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: CC

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFG0248-BLK1)				Prepared: 13-Jul-2017 Analyzed: 14-Jul-2017 11:23							
Arsenic, Dissolved	75a	ND	0.000200	mg/L							U
LCS (BFG0248-BS1)				Prepared: 13-Jul-2017 Analyzed: 14-Jul-2017 11:50							
Arsenic, Dissolved	75a	0.0253	0.000200	mg/L	0.0250		101	80-120			
Duplicate (BFG0248-DUP1)		**Source: 17G0123-01**		Prepared: 13-Jul-2017 Analyzed: 14-Jul-2017 11:41							
Arsenic, Dissolved	75a	0.00101	0.000200	mg/L		0.00110			8.81	20	
Matrix Spike (BFG0248-MS1)		**Source: 17G0123-01**		Prepared: 13-Jul-2017 Analyzed: 14-Jul-2017 11:47							
Arsenic, Dissolved	75a	0.0265	0.000200	mg/L	0.0250	0.00110	102	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

Wet Chemistry - Quality Control

Batch BFG0234 - No Prep Wet Chem

Instrument: DX500 Analyst: KK

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFG0234-BLK1)			Prepared: 12-Jul-2017 Analyzed: 12-Jul-2017 17:40							
Nitrate-N	ND	0.100	mg-N/L							U
Nitrite-N	ND	0.100	mg-N/L							U
Orthophosphorus	ND	0.10	mg-P/L							U
LCS (BFG0234-BS1)			Prepared: 12-Jul-2017 Analyzed: 12-Jul-2017 17:56							
Nitrate-N	1.52	0.100	mg-N/L	1.50		101	75-125			
Nitrite-N	1.48	0.100	mg-N/L	1.50		98.9	75-125			
Orthophosphorus	1.57	0.10	mg-P/L	1.50		105	75-125			
Duplicate (BFG0234-DUP1)		**Source: 17G0123-01**	Prepared: 12-Jul-2017 Analyzed: 12-Jul-2017 18:30							
Nitrate-N	0.553	0.100	mg-N/L		0.555			0.36	20	
Nitrite-N	ND	0.100	mg-N/L		ND					U
Orthophosphorus	ND	0.10	mg-P/L		ND					U
Matrix Spike (BFG0234-MS1)		**Source: 17G0123-01**	Prepared: 12-Jul-2017 Analyzed: 12-Jul-2017 18:47							
Nitrate-N	2.61	0.200	mg-N/L	2.00	0.555	103	75-125			D
Nitrite-N	1.98	0.200	mg-N/L	2.00	ND	98.8	75-125			D
Orthophosphorus	2.11	0.20	mg-P/L	2.00	ND	105	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Orthophosphorus	DoD-ELAP,WADOE,WA-DW,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	09/01/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

Test America - Denver	Project: Hansville	
4955 Yarrow Street	Project Number: 28006013- 2Q/3Q/4Q Sampling	**Reported:**
Arvada CO, 80002	Project Manager: Betsy Sara	20-Jul-2017 16:24

Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
J	Estimated concentration value detected below the reporting limit.
D	The reported value is from a dilution
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: AHP	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23414-6845.1
Client Contact: Aaron Pruitt	Phone: 206-595-CC15	E-Mail: betsy.sara@testamericainc.com		Page:
Company: Aspect Consulting, LLC				Job #:
Address: 350 Madison Ave N	Due Date Requested:			
City: Bainbridge Island	TAT Requested (days):			
State, Zip: WA, 98110				
Phone:	PO #: Purchase Order not required			
Email: apruitt@aspectconsulting.com	WO #:			
Project Name: Hansville Landfill	Project #:skip sites/events 28006013 - 2Q/3Q/4Q Sampling			
Site: Washington	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 - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

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)	8260C SIM - Vinyl Chloride (TA Buffalo)	Dissolved Metals	Ammonia/TOC	Alks/Cl/SO4/NO3/NO3(IC)	Ortho-phosphate (field filtered)	Dissolved Arsenic (Direct sub to ARI)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D	S	N	N	D		
MW-7	7/11/17	905		W			X	X	X	X				Short Holds: NO3/NO2(IC), Orthophosphate (IC)
MW-5	7/11/17	1055					X	X	X	X				
MW-12I		1225					X	X	X	X				Dissolved Arsenic subbed direct to ARI
SW-1		1230					X	X	X	X				o-phos & NO3/NO2 subbed direct to ARI
SW-4		1315					X	X	X	X				
SW-6		1400					X	X	X	X				
MW-13D		1500					X	X	X	X				
SW-7		1530					X	X	X	X				
MW-14		1350					X	X	X	X				
MW-6		1940					X	X	X	X				
MW-20DD		—					X	X	X	X				

280-99146 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:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Aaron Pruitt	7/12/17 1200	Aspect		7/13/17 0845	TAD
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 5.3°, 3.4°, 5.4°, IR#7, -0.0 7/13/17 GP

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-405825.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-99146-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 7/25/2017			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Hansville Landfill	Project #: 28006013			
Site: Hansville	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)	8260C_SIM/5030C (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-7 (280-99146-1)	7/11/17	09:05 Pacific		Water			X	3	
MW-5 (280-99146-2)	7/11/17	10:55 Pacific		Water			X	3	
MW-12I (280-99146-3)	7/11/17	12:25 Pacific		Water			X	3	
SW-1 (280-99146-4)	7/11/17	12:30 Pacific		Water			X	3	
SW-4 (280-99146-5)	7/11/17	13:15 Pacific		Water			X	3	
SW-6 (280-99146-6)	7/11/17	14:00 Pacific		Water			X	3	
MW-13D (280-99146-7)	7/11/17	15:00 Pacific		Water			X	3	
SW-7 (280-99146-8)	7/11/17	15:30 Pacific		Water			X	3	
MW-14 (280-99146-9)	7/11/17	18:50 Pacific		Water			X	3	

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
1	[signature]	7/13/17 1630		[signature]	7/14/17 0940	TAB E.
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	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 4.3°C

07/24/2017

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-405825.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: betsy.sara@testamericainc.com	State of Origin: Washington	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 280-99146-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 7/25/2017			Preservation Codes:
City: Amherst	TAT Requested (days):			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:
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Hansville Landfill	Project #: 28006013			
Site: Hansville	SSOW#:			

Analysis Requested

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)	8260C_SIM/5030C (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-6 (280-99146-10)	7/11/17	19:40 Pacific		Water			X	3	
MW-20DD (280-99146-11)	7/11/17	Pacific		Water			X	3	
TB1 (280-99146-12)	7/11/17	Pacific		Water			X	3	

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:

	Date/Time	Company	Received by:	Date/Time:	Company
Relinquished by:	7/13/17 16:30			7/14/17 0940	TA Buf.
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 4.3°

07/24/2017

Login Sample Receipt Checklist

Client: Aspect Consulting

Job Number: 280-99146-1

Login Number: 99146
List Number: 1
Creator: Parrott, Gregg S

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	No: Received Trip Blank(s) not listed on COC.
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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	False	No: Headspace larger than ¼” in 1 or more vial; at least one vial w/o headspace.
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Aspect Consulting

Job Number: 280-99146-1

Login Number: 99146
List Number: 2
Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo
List Creation: 07/14/17 03:35 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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	4.3 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	