



HEMMERA ENVIROCHEM INC.
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Date Received: 31-AUG-16
Report Date: 11-OCT-16 14:11 (MT)
Version: FINAL REV. 2

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1822156
Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.28
C of C Numbers:
Legal Site Desc:

Comments:

11-OCT-2016 This report replaces the previous version and contains a change to a Manganese result due to re-analysis of the sample

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1822156-1 Water 29-AUG-16 15:45 CH-P-13-03/50	L1822156-2 Water 29-AUG-16 10:30 GSI-HA-04A	L1822156-3 Water 29-AUG-16 11:25 MW09-16	L1822156-4 Water 29-AUG-16 12:35 MW09-18	L1822156-5 Water 29-AUG-16 13:45 MW09-19	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2250	862	1760	2770	2200
	Hardness (as CaCO3) (mg/L)	1400	487	1120	1890	1440
	pH (pH)	7.62	7.38	7.65	7.87	7.44
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	376	170	327	529	524
	Ammonia, Total (as N) (mg/L)	0.0151	0.184	<0.0050	<0.0050	3.42
	Bromide (Br) (mg/L)					
	Chloride (Cl) (mg/L)	<2.5 ^{DLA}	<0.50	<2.5 ^{DLA}	<2.5 ^{DLA}	<2.5 ^{DLA}
	Fluoride (F) (mg/L)	0.16	0.058	0.15	0.11	0.10
	Nitrate (as N) (mg/L)	2.72	<0.0050	0.174	0.046	<0.025 ^{DLA}
	Nitrite (as N) (mg/L)	<0.0050 ^{DLA}	<0.0010	<0.0050	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Total Kjeldahl Nitrogen (mg/L)	0.58	0.840	0.148	0.119	4.07
	Sulfate (SO4) (mg/L)	1140	316	835	1490	1000
	Anion Sum (meq/L)	31.5	9.97	23.9	41.7	31.4
	Cation Sum (meq/L)	30.3	10.5	22.9	38.4	30.8
	Cation - Anion Balance (%)	-2.0	2.7	-2.2	-4.1	-0.9
	Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050 ^{HTP}
Cyanide, Total (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050 ^{HTP}	<0.0050
Thiocyanate (SCN) (mg/L)		<0.50	<0.50	<0.50	<0.50	0.55
Cyanide, Free (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050 ^{HTP}	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	90.5	45.9	86.1	137	139
	Total Organic Carbon (mg/L)	30.2	15.7	3.35	3.36	24.1
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

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Sample ID Description Sampled Date Sampled Time Client ID	L1822156-6 Water 29-AUG-16 17:20 MW09-22	L1822156-7 Water 29-AUG-16 09:20 GSI-HA-03A	L1822156-8 Water TRAVEL BLANK	L1822156-9 Water 29-AUG-16 11:25 DUP-1	L1822156-10 Water 29-AUG-16 11:25 FB-1	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	593	669	<2.0	1750	<2.0
	Hardness (as CaCO3) (mg/L)	287	364	<0.50 ^{HTC}	1100	<0.50
	pH (pH)	7.50	7.81	5.56	7.77	5.32
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	138	131	<1.0	330	<1.0
	Ammonia, Total (as N) (mg/L)	1.09		<0.0050	<0.0050	<0.0050
	Bromide (Br) (mg/L)					
	Chloride (Cl) (mg/L)	<0.50	0.74	<0.50	<2.5 ^{DLA}	<0.50
	Fluoride (F) (mg/L)	0.088	0.050	<0.020	0.15	<0.020
	Nitrate (as N) (mg/L)	0.187	0.0193	<0.0050	0.182	<0.0050
	Nitrite (as N) (mg/L)	0.0646	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010
	Total Kjeldahl Nitrogen (mg/L)	2.11	0.56 ^{PEHT}	<0.050	0.117	<0.050
	Sulfate (SO4) (mg/L)	182	234	<0.30	825	<0.30
	Anion Sum (meq/L)	6.57	7.51	<0.10	23.8	<0.10
	Cation Sum (meq/L)	7.59	9.39	<0.10	22.6	<0.10
	Cation - Anion Balance (%)	7.2	11.1	0.0	-2.5	0.0
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.050 ^{DLM}	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	0.0102	<0.050 ^{DLM}	<0.0050	<0.0050	<0.0050
	Thiocyanate (SCN) (mg/L)	<0.50		<0.50	<0.50	<0.50
	Cyanide, Free (mg/L)	<0.0050	<0.050 ^{DLM}	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	39.4		<0.50	83.8	<0.50
	Total Organic Carbon (mg/L)	14.3		<0.50	3.23	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)			<0.0030		
	Antimony (Sb)-Total (mg/L)			<0.00010		
	Arsenic (As)-Total (mg/L)			<0.00010		
	Barium (Ba)-Total (mg/L)			<0.000050		
	Beryllium (Be)-Total (mg/L)			<0.000020		
	Bismuth (Bi)-Total (mg/L)			<0.000050		
	Boron (B)-Total (mg/L)			<0.010		
	Cadmium (Cd)-Total (mg/L)			<0.0000050		
	Calcium (Ca)-Total (mg/L)			<0.050		
	Chromium (Cr)-Total (mg/L)			<0.00010		
	Cobalt (Co)-Total (mg/L)			<0.00010		
	Copper (Cu)-Total (mg/L)			<0.00050		
	Iron (Fe)-Total (mg/L)			<0.010		
	Lead (Pb)-Total (mg/L)			<0.000050		
	Lithium (Li)-Total (mg/L)			<0.0010		

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Sample ID Description Sampled Date Sampled Time Client ID	L1822156-11 Water 30-AUG-16 14:00 GSI-HA-03A	L1822156-12 Water 30-AUG-16 12:55 GSI-DC-02B	L1822156-13 Water 30-AUG-16 15:25 GSI-DC-03B	L1822156-14 Water 30-AUG-16 14:30 GSI-DC-05B	L1822156-15 Water 30-AUG-16 13:10 GSI-HA-01A	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)		1020	1210	1300	1140
	Hardness (as CaCO3) (mg/L)		608	737	796	691
	pH (pH)		7.69	7.68	7.42	7.89
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		289	265	255	291
	Ammonia, Total (as N) (mg/L)	0.392	1.12	0.277	0.899	0.0480
	Bromide (Br) (mg/L)					
	Chloride (Cl) (mg/L)		<1.0 ^{DLA}	<1.0 ^{DLA}	<1.0 ^{DLA}	<1.0 ^{DLA}
	Fluoride (F) (mg/L)		0.062	0.123	0.074	0.137
	Nitrate (as N) (mg/L)		<0.010 ^{DLA}	0.044	<0.010 ^{DLA}	0.011
	Nitrite (as N) (mg/L)		<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Total Kjeldahl Nitrogen (mg/L)	0.658	1.55	0.578	1.64	0.240
	Sulfate (SO4) (mg/L)		326	474	550	405
	Anion Sum (meq/L)		12.6	15.2	16.5	14.3
	Cation Sum (meq/L)		15.0	15.2	16.9	14.2
	Cation - Anion Balance (%)		8.8	0.0	1.0	-0.3
Cyanides	Cyanide, Weak Acid Diss (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Cyanide, Free (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	49.3	77.1	65.7	64.7	71.2
	Total Organic Carbon (mg/L)	7.80	11.8	7.47	12.5	4.95
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

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Sample ID Description Sampled Date Sampled Time Client ID		L1822156-16 Water 30-AUG-16 13:45 GSI-HA-02A	L1822156-17 Water 30-AUG-16 14:20 GSI-HA-05A	L1822156-18 Water 30-AUG-16 10:05 MP09-04	L1822156-19 Water 30-AUG-16 10:55 MP09-05	L1822156-20 Water 30-AUG-16 17:00 MP09-09
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	988	794	2530	1960	534
	Hardness (as CaCO3) (mg/L)	568	456	1490	1080	204
	pH (pH)	7.30	7.37	8.04	7.27	8.90
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	222	158	91.0	307	99.9
	Ammonia, Total (as N) (mg/L)	1.00	0.291	9.48	6.35	3.91
	Bromide (Br) (mg/L)					
	Chloride (Cl) (mg/L)	<1.0 ^{DLA}	<0.50	<2.5 ^{DLA}	<2.5 ^{DLA}	4.93
	Fluoride (F) (mg/L)	0.052	0.059	0.42	<0.10 ^{DLA}	1.81
	Nitrate (as N) (mg/L)	0.044	0.0238	0.331	3.66	0.0058
	Nitrite (as N) (mg/L)	<0.0020 ^{DLA}	0.0064	0.0502	<0.0050 ^{DLA}	<0.0010
	Total Kjeldahl Nitrogen (mg/L)	1.56	10.4	10.1	7.98	5.97
	Sulfate (SO4) (mg/L)	350	296	1640	908	148
	Anion Sum (meq/L)	11.7	9.32	36.0	25.3	5.31
	Cation Sum (meq/L)	14.5	9.78	33.3	24.5	6.10
	Cation - Anion Balance (%)	10.4	2.4	-3.8	-1.5	6.9
	Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Total (mg/L)		<0.0050	<0.0050	<0.0050	0.0083	1.93
Thiocyanate (SCN) (mg/L)		<0.50	<0.50	<0.50	<0.50	1.12
Cyanide, Free (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050	1.15
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	55.3	38.1	53.4	80.5	13.6
	Total Organic Carbon (mg/L)	14.9	146	7.11	17.4	37.0
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

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Sample ID Description Sampled Date Sampled Time Client ID		L1822156-21 Water 30-AUG-16 18:35 MP09-11	L1822156-22 Water 30-AUG-16 13:40 MW09-02	L1822156-23 Water 30-AUG-16 11:20 MW09-03	L1822156-24 Water 30-AUG-16 11:50 MW09-04	L1822156-25 Water 30-AUG-16 14:45 MW09-06
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	710	2500	2530	1160	1490
	Hardness (as CaCO3) (mg/L)	350	1390	1530	708	852
	pH (pH)	7.66	6.64	7.82	7.43	7.48
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	414	65.1	111	263	162
	Ammonia, Total (as N) (mg/L)	15.1	9.51	6.59	<0.0050	0.142
	Bromide (Br) (mg/L)					
	Chloride (Cl) (mg/L)	<0.50	<2.5 ^{DLA}	<2.5 ^{DLA}	<1.0 ^{DLA}	<1.0 ^{DLA}
	Fluoride (F) (mg/L)	0.625	0.55 ^{DLA}	0.32	<0.040 ^{DLA}	0.261
	Nitrate (as N) (mg/L)	<0.0050	<0.025 ^{DLA}	0.906 ^{DLA}	2.26 ^{DLA}	0.016 ^{DLA}
	Nitrite (as N) (mg/L)	0.0193	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Total Kjeldahl Nitrogen (mg/L)	17.4	10.7	7.53	0.32	0.507
	Sulfate (SO4) (mg/L)	3.26	1580	1590	446	739
	Anion Sum (meq/L)	8.37	34.3	35.3	14.7	18.6
	Cation Sum (meq/L)	9.45	32.0	33.8	14.6	18.1
	Cation - Anion Balance (%)	6.1	-3.4	-2.2	-0.4	-1.4
	Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	0.0101	<0.0050
Cyanide, Total (mg/L)		0.0150	0.0258	0.0175	<0.0050	<0.0050
Thiocyanate (SCN) (mg/L)		0.55	<0.50	<0.50	<0.50	<0.50
Cyanide, Free (mg/L)		<0.0050	<0.0050	0.0085	<0.0050	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	102	17.2	27.5	68.7	39.5
	Total Organic Carbon (mg/L)	33.1	5.92	6.73	6.77	5.54
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

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		Sample ID	L1822156-26	L1822156-27	L1822156-28	L1822156-29	L1822156-30
		Description	Water	Water	Water	Water	Water
		Sampled Date	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16
		Sampled Time	09:10	11:55	10:30	09:35	09:35
		Client ID	MW09-08	MW09-21	MW09-23	MW09-24	DUP-2
Grouping	Analyte						
WATER							
Physical Tests	Conductivity (uS/cm)		189	1850	1440	848	857
	Hardness (as CaCO3) (mg/L)		87.1	1060	857	503	514
	pH (pH)		6.55	6.93	7.35	7.46	7.46
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		105	287	329	311	303
	Ammonia, Total (as N) (mg/L)		2.23		2.41	0.0112	0.0109
	Bromide (Br) (mg/L)						
	Chloride (Cl) (mg/L)		<0.50	<2.5 ^{DLA}	<1.0 ^{DLA}	<0.50	<0.50
	Fluoride (F) (mg/L)		0.147	<0.10 ^{DLA}	0.105 ^{DLA}	0.047	0.048
	Nitrate (as N) (mg/L)		<0.0050	0.054	<0.010 ^{DLA}	1.82	1.79
	Nitrite (as N) (mg/L)		<0.0010	0.0198	<0.0020 ^{DLA}	<0.0010	0.0052
	Total Kjeldahl Nitrogen (mg/L)		2.65	6.78	2.99	0.526	0.53
	Sulfate (SO4) (mg/L)		<0.30	887	551	190	188
	Anion Sum (meq/L)		2.10	24.2	18.1	10.3	10.1
	Cation Sum (meq/L)		3.80	25.8	19.6	10.4	10.6
	Cation - Anion Balance (%)		28.8	3.2	4.1	0.5	2.5
	Cyanides	Cyanide, Weak Acid Diss (mg/L)		<0.0050	0.0057	<0.0050	<0.0050
Cyanide, Total (mg/L)			<0.0050	0.0110	0.0236	<0.0050	<0.0050
Thiocyanate (SCN) (mg/L)			0.51	<0.50	<0.50	<0.50	<0.50
Cyanide, Free (mg/L)			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)		30.5	70.9	84.9	78.8	79.7
	Total Organic Carbon (mg/L)		27.5	23.1	17.5	10.8	10.8
Total Metals	Aluminum (Al)-Total (mg/L)						
	Antimony (Sb)-Total (mg/L)						
	Arsenic (As)-Total (mg/L)						
	Barium (Ba)-Total (mg/L)						
	Beryllium (Be)-Total (mg/L)						
	Bismuth (Bi)-Total (mg/L)						
	Boron (B)-Total (mg/L)						
	Cadmium (Cd)-Total (mg/L)						
	Calcium (Ca)-Total (mg/L)						
	Chromium (Cr)-Total (mg/L)						
	Cobalt (Co)-Total (mg/L)						
	Copper (Cu)-Total (mg/L)						
	Iron (Fe)-Total (mg/L)						
	Lead (Pb)-Total (mg/L)						
	Lithium (Li)-Total (mg/L)						

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	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-31 Water 30-AUG-16 09:35 FB-2	L1822156-32 Water 30-AUG-16 17:00 DUP-3		
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	<2.0	532		
	Hardness (as CaCO3) (mg/L)	<0.50	212		
	pH (pH)	5.53	9.09		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	<1.0	98.1		
	Ammonia, Total (as N) (mg/L)	<0.0050	4.34		
	Bromide (Br) (mg/L)		0.251		
	Chloride (Cl) (mg/L)	<0.50	4.94		
	Fluoride (F) (mg/L)	<0.020	1.67		
	Nitrate (as N) (mg/L)	<0.0050	<0.0050		
	Nitrite (as N) (mg/L)	<0.0010	0.0020		
	Total Kjeldahl Nitrogen (mg/L)	<0.050	5.88		
	Sulfate (SO4) (mg/L)	<0.30	148		
	Anion Sum (meq/L)	<0.10	5.28		
	Cation Sum (meq/L)	<0.10	6.21		
	Cation - Anion Balance (%)	0.0	8.2		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	1.25		
	Cyanide, Total (mg/L)	<0.0050	1.79		
	Thiocyanate (SCN) (mg/L)	<0.50	1.14		
	Cyanide, Free (mg/L)	<0.0050	0.944		
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	<0.50	13.6		
	Total Organic Carbon (mg/L)	<0.50	37.1		
Total Metals	Aluminum (Al)-Total (mg/L)				
	Antimony (Sb)-Total (mg/L)				
	Arsenic (As)-Total (mg/L)				
	Barium (Ba)-Total (mg/L)				
	Beryllium (Be)-Total (mg/L)				
	Bismuth (Bi)-Total (mg/L)				
	Boron (B)-Total (mg/L)				
	Cadmium (Cd)-Total (mg/L)				
	Calcium (Ca)-Total (mg/L)				
	Chromium (Cr)-Total (mg/L)				
	Cobalt (Co)-Total (mg/L)				
	Copper (Cu)-Total (mg/L)				
	Iron (Fe)-Total (mg/L)				
	Lead (Pb)-Total (mg/L)				
	Lithium (Li)-Total (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-1 Water 29-AUG-16 15:45 CH-P-13-03/50	L1822156-2 Water 29-AUG-16 10:30 GSI-HA-04A	L1822156-3 Water 29-AUG-16 11:25 MW09-16	L1822156-4 Water 29-AUG-16 12:35 MW09-18	L1822156-5 Water 29-AUG-16 13:45 MW09-19
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0066	0.0284	0.0010	<0.0020 ^{DLA}	0.0101 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	0.00096	0.00047	0.0602	0.00036	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00046	0.0342	0.0113	0.0554	0.140
	Barium (Ba)-Dissolved (mg/L)	0.0275	0.144	0.0145	0.00893	0.0496
	Beryllium (Be)-Dissolved (mg/L)	<0.000040 ^{DLA}	<0.000020	<0.000020	<0.000040 ^{DLA}	<0.000040 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050	<0.000050	<0.00010 ^{DLA}	<0.00010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.010	0.099	<0.020 ^{DLA}	0.336 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000463	0.0000085	0.0270	0.000063	<0.000010 ^{DLA}
	Calcium (Ca)-Dissolved (mg/L)	364	125	259	349	308
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	0.00021	<0.00010	<0.00020 ^{DLA}	0.00030
	Cobalt (Co)-Dissolved (mg/L)	<0.00020 ^{DLA}	0.00022	0.00013	<0.00020 ^{DLA}	0.00164 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00445	<0.00020	0.00612	<0.00040 ^{DLA}	<0.00040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	0.012	8.16	<0.010	0.013	15.0
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	0.000057	0.00642	<0.00010 ^{DLA}	<0.00010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0034	0.0029	0.0114	0.0230	0.0132

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1822156-6	L1822156-7	L1822156-8	L1822156-9	L1822156-10
		Description	Water	Water	Water	Water	Water
		Sampled Date	29-AUG-16	29-AUG-16		29-AUG-16	29-AUG-16
		Sampled Time	17:20	09:20		11:25	11:25
		Client ID	MW09-22	GSI-HA-03A	TRAVEL BLANK	DUP-1	FB-1
Grouping	Analyte						
WATER							
Total Metals	Magnesium (Mg)-Total (mg/L)				<0.10		
	Manganese (Mn)-Total (mg/L)				<0.00010		
	Mercury (Hg)-Total (mg/L)				<0.0000050		
	Molybdenum (Mo)-Total (mg/L)				<0.000050		
	Nickel (Ni)-Total (mg/L)				<0.00050		
	Phosphorus (P)-Total (mg/L)				<0.050		
	Potassium (K)-Total (mg/L)				<0.10		
	Selenium (Se)-Total (mg/L)				<0.000050		
	Silicon (Si)-Total (mg/L)				<0.050		
	Silver (Ag)-Total (mg/L)				<0.000010		
	Sodium (Na)-Total (mg/L)				<0.050		
	Strontium (Sr)-Total (mg/L)				<0.00020		
	Sulfur (S)-Total (mg/L)				<0.50		
	Thallium (Tl)-Total (mg/L)				<0.000010		
	Tin (Sn)-Total (mg/L)				<0.00010		
	Titanium (Ti)-Total (mg/L)				<0.00030		
	Uranium (U)-Total (mg/L)				<0.000010		
	Vanadium (V)-Total (mg/L)				<0.00050		
	Zinc (Zn)-Total (mg/L)				<0.0030		
	Zirconium (Zr)-Total (mg/L)				<0.00030		
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD			FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD			FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0481	0.0229			0.0022	<0.0010
	Antimony (Sb)-Dissolved (mg/L)	0.00012	0.00064			0.0605	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.0111	0.0238			0.0121	<0.00010
	Barium (Ba)-Dissolved (mg/L)	0.0654	0.0532			0.0149	<0.000050
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020			<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050			<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	0.029	<0.010			0.097	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0000240	0.000184			0.0271	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	101	92.3			254	<0.050
	Chromium (Cr)-Dissolved (mg/L)	0.00089	0.00274			<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00533	0.00028			0.00013	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00123	0.00095			0.00623	<0.00020
	Iron (Fe)-Dissolved (mg/L)	15.2	33.5			<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.000059	0.000180			0.00645	<0.000050
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010			0.0113	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-11 Water 30-AUG-16 14:00 GSI-HA-03A	L1822156-12 Water 30-AUG-16 12:55 GSI-DC-02B	L1822156-13 Water 30-AUG-16 15:25 GSI-DC-03B	L1822156-14 Water 30-AUG-16 14:30 GSI-DC-05B	L1822156-15 Water 30-AUG-16 13:10 GSI-HA-01A
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)		0.0180	0.0058	0.0081	0.0014
	Antimony (Sb)-Dissolved (mg/L)		0.00025	0.00080	0.00027	0.00017
	Arsenic (As)-Dissolved (mg/L)		0.162	0.00087	0.0385	0.00287
	Barium (Ba)-Dissolved (mg/L)		0.227	0.0253	0.0379	0.147
	Beryllium (Be)-Dissolved (mg/L)		<0.000020	<0.000020	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)		<0.010	<0.010	0.013	<0.010
	Cadmium (Cd)-Dissolved (mg/L)		0.0000168	0.000656	0.0000124	0.0000120
	Calcium (Ca)-Dissolved (mg/L)		155	190	187	180
	Chromium (Cr)-Dissolved (mg/L)		0.00024	0.00136	0.00011	<0.00010
	Cobalt (Co)-Dissolved (mg/L)		0.00275	0.00106	0.00303	0.00046
	Copper (Cu)-Dissolved (mg/L)		<0.00020	0.00294	<0.00020	0.00044
	Iron (Fe)-Dissolved (mg/L)		42.7	0.013	6.67	0.825
	Lead (Pb)-Dissolved (mg/L)		<0.000050	0.000110	0.000068	<0.000050
	Lithium (Li)-Dissolved (mg/L)		<0.0010	0.0051	0.0020	0.0077

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-16 Water 30-AUG-16 13:45 GSI-HA-02A	L1822156-17 Water 30-AUG-16 14:20 GSI-HA-05A	L1822156-18 Water 30-AUG-16 10:05 MP09-04	L1822156-19 Water 30-AUG-16 10:55 MP09-05	L1822156-20 Water 30-AUG-16 17:00 MP09-09
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0175	0.0329	0.0021	0.0148	<0.0050 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	0.00019	0.00049	0.291	0.00037	0.120
	Arsenic (As)-Dissolved (mg/L)	0.0283	0.0256	3.52	0.0128	23.4
	Barium (Ba)-Dissolved (mg/L)	0.161	0.133	0.0111	0.0578	0.00056
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000040 ^{DLA}	<0.000040 ^{DLA}	<0.00010 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.00010 ^{DLA}	<0.00010 ^{DLA}	<0.00025 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	0.236	0.155	0.191
	Cadmium (Cd)-Dissolved (mg/L)	0.0000357	0.0000094	0.000046	0.00129	0.000769
	Calcium (Ca)-Dissolved (mg/L)	142	116	462	332	80.7
	Chromium (Cr)-Dissolved (mg/L)	0.00028	0.00029	<0.00020 ^{DLA}	0.00040	<0.00050 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00152	0.00020	0.00117	0.0170	0.0468
	Copper (Cu)-Dissolved (mg/L)	0.00025	0.00022	<0.00040 ^{DLA}	0.00587	0.214
	Iron (Fe)-Dissolved (mg/L)	47.5	6.60	<0.010	3.84	0.174
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	0.00047	<0.00010 ^{DLA}	0.00054
	Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0021	0.0114	<0.0020 ^{DLA}	<0.0050 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-21 Water 30-AUG-16 18:35 MP09-11	L1822156-22 Water 30-AUG-16 13:40 MW09-02	L1822156-23 Water 30-AUG-16 11:20 MW09-03	L1822156-24 Water 30-AUG-16 11:50 MW09-04	L1822156-25 Water 30-AUG-16 14:45 MW09-06
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0207	<0.0050 ^{DLA}	0.0172	0.0011	0.0013
	Antimony (Sb)-Dissolved (mg/L)	0.0172	0.00486	0.378	0.00155	0.287
	Arsenic (As)-Dissolved (mg/L)	4.58	13.8	2.26	0.00096	0.124
	Barium (Ba)-Dissolved (mg/L)	0.235	0.00512	0.0228	0.0699	0.00632
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.00010 ^{DLA}	<0.000040 ^{DLA}	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	0.000159	<0.00025 ^{DLA}	<0.00010 ^{DLA}	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	0.032	0.083	0.224	0.012	0.131
	Cadmium (Cd)-Dissolved (mg/L)	0.000541	0.000933	0.000364	0.0000690	0.00553
	Calcium (Ca)-Dissolved (mg/L)	76.8	457	465	187	275
	Chromium (Cr)-Dissolved (mg/L)	0.00155	<0.00050 ^{DLA}	<0.00020 ^{DLA}	0.00018	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00149	0.0115	0.00188	0.00017	0.00091
	Copper (Cu)-Dissolved (mg/L)	0.00141	<0.0010 ^{DLA}	0.00150	0.00273	0.00509
	Iron (Fe)-Dissolved (mg/L)	15.0	18.1	0.017	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.0560	<0.00025 ^{DLA}	<0.00010 ^{DLA}	<0.000050	0.000282
	Lithium (Li)-Dissolved (mg/L)	0.0012	0.0157	<0.0020 ^{DLA}	<0.0010	0.0123

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-26 Water 30-AUG-16 09:10 MW09-08	L1822156-27 Water 30-AUG-16 11:55 MW09-21	L1822156-28 Water 30-AUG-16 10:30 MW09-23	L1822156-29 Water 30-AUG-16 09:35 MW09-24	L1822156-30 Water 30-AUG-16 09:35 DUP-2
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.105	0.0431	0.0401	0.0032	0.0035
	Antimony (Sb)-Dissolved (mg/L)	0.00028	0.00028	0.00021	0.00017	0.00018
	Arsenic (As)-Dissolved (mg/L)	0.110	0.0535	0.0353	0.00158	0.00151
	Barium (Ba)-Dissolved (mg/L)	0.107	0.143	0.0466	0.0707	0.0708
	Beryllium (Be)-Dissolved (mg/L)	0.000026	<0.000020	<0.000040 ^{DLA}	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.00010 ^{DLA}	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	0.115	0.070	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	0.000186	0.000018	0.0000511	0.0000518
	Calcium (Ca)-Dissolved (mg/L)	25.5	298	216	138	141
	Chromium (Cr)-Dissolved (mg/L)	0.00134	0.00093	0.00047	0.00031	0.00031
	Cobalt (Co)-Dissolved (mg/L)	0.00078	0.0156	0.0107	0.00013	0.00013
	Copper (Cu)-Dissolved (mg/L)	<0.00020	0.00315	<0.00040 ^{DLA}	0.00666	0.00679
	Iron (Fe)-Dissolved (mg/L)	31.8	15.3	15.7	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.000190	<0.000050	<0.00010 ^{DLA}	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1822156-31 Water 30-AUG-16 09:35 FB-2	L1822156-32 Water 30-AUG-16 17:00 DUP-3		
Grouping	Analyte				
WATER					
Total Metals	Magnesium (Mg)-Total (mg/L)				
	Manganese (Mn)-Total (mg/L)				
	Mercury (Hg)-Total (mg/L)				
	Molybdenum (Mo)-Total (mg/L)				
	Nickel (Ni)-Total (mg/L)				
	Phosphorus (P)-Total (mg/L)				
	Potassium (K)-Total (mg/L)				
	Selenium (Se)-Total (mg/L)				
	Silicon (Si)-Total (mg/L)				
	Silver (Ag)-Total (mg/L)				
	Sodium (Na)-Total (mg/L)				
	Strontium (Sr)-Total (mg/L)				
	Sulfur (S)-Total (mg/L)				
	Thallium (Tl)-Total (mg/L)				
	Tin (Sn)-Total (mg/L)				
	Titanium (Ti)-Total (mg/L)				
	Uranium (U)-Total (mg/L)				
	Vanadium (V)-Total (mg/L)				
	Zinc (Zn)-Total (mg/L)				
	Zirconium (Zr)-Total (mg/L)				
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD		
	Dissolved Metals Filtration Location	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	<0.0010	0.0070		
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	0.118		
	Arsenic (As)-Dissolved (mg/L)	<0.00010	25.0		
	Barium (Ba)-Dissolved (mg/L)	<0.000050	0.00062		
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.00010 ^{DLA}		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.00025 ^{DLA}		
	Boron (B)-Dissolved (mg/L)	<0.010	0.197		
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	0.000792		
	Calcium (Ca)-Dissolved (mg/L)	<0.050	83.8		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00050 ^{DLA}		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.0436		
	Copper (Cu)-Dissolved (mg/L)	<0.00020	0.397		
	Iron (Fe)-Dissolved (mg/L)	<0.010	0.175		
	Lead (Pb)-Dissolved (mg/L)	<0.000050	0.00053		
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0050 ^{DLA}		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

11-OCT-16 14:11 (MT)

Version: FINAL REV. 2

Sample ID Description Sampled Date Sampled Time Client ID		L1822156-1 Water 29-AUG-16 15:45 CH-P-13-03/50	L1822156-2 Water 29-AUG-16 10:30 GSI-HA-04A	L1822156-3 Water 29-AUG-16 11:25 MW09-16	L1822156-4 Water 29-AUG-16 12:35 MW09-18	L1822156-5 Water 29-AUG-16 13:45 MW09-19
Grouping	Analyte					
WATER						
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)	120	42.3	114	246	162
	Manganese (Mn)-Dissolved (mg/L)	0.207	2.49	0.0217	0.308	4.95
	Mercury (Hg)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.00065	0.000110	0.000076	<0.00010 ^{DLA}	<0.00010 ^{DLA}
	Nickel (Ni)-Dissolved (mg/L)	0.0145	<0.00050	0.00426	<0.0010 ^{DLA}	0.0013
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	0.153
	Potassium (K)-Dissolved (mg/L)	7.23	2.63	6.01	7.15	7.82
	Selenium (Se)-Dissolved (mg/L)	0.00639	0.000107	0.000097	0.00057	0.00032
	Silicon (Si)-Dissolved (mg/L)	6.05	8.74	5.61	4.75	9.55
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	0.000017	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	47.5	4.38	8.32	12.6	15.6
	Strontium (Sr)-Dissolved (mg/L)	0.861	0.328	0.594	0.975	0.999
	Sulfur (S)-Dissolved (mg/L)	356	106	254	439	312
	Thallium (Tl)-Dissolved (mg/L)	0.000052	<0.000010	0.000285	0.000273	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	0.00225	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.00060 ^{DLA}	0.00106	<0.00030	<0.00060 ^{DLA}	0.00106
	Uranium (U)-Dissolved (mg/L)	0.0122	0.000112	0.00287	0.00774	0.000559
	Vanadium (V)-Dissolved (mg/L)	<0.0010 ^{DLA}	0.00072	<0.00050	<0.0010 ^{DLA}	0.0011
	Zinc (Zn)-Dissolved (mg/L)	0.0138	0.0047	3.54	0.0037	<0.0020 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00060 ^{DLA}	<0.00030	<0.00030	<0.00060 ^{DLA}	<0.00060 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1822156-6	L1822156-7	L1822156-8	L1822156-9	L1822156-10
		Description	Water	Water	Water	Water	Water
		Sampled Date	29-AUG-16	29-AUG-16		29-AUG-16	29-AUG-16
		Sampled Time	17:20	09:20		11:25	11:25
		Client ID	MW09-22	GSI-HA-03A	TRAVEL BLANK	DUP-1	FB-1
Grouping	Analyte						
WATER							
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)		8.41	32.5		113	<0.10
	Manganese (Mn)-Dissolved (mg/L)		2.88	3.10		0.0233	<0.00010
	Mercury (Hg)-Dissolved (mg/L)		0.0000060	<0.0000050		<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)		0.000454	0.00135		0.000073	<0.000050
	Nickel (Ni)-Dissolved (mg/L)		0.00112	0.00637		0.00435	<0.00050
	Phosphorus (P)-Dissolved (mg/L)		<0.050	<0.050		<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)		3.22	1.47		5.84	<0.10
	Selenium (Se)-Dissolved (mg/L)		0.000221	0.000056		0.000106	<0.000050
	Silicon (Si)-Dissolved (mg/L)		4.68	5.50		5.51	<0.050
	Silver (Ag)-Dissolved (mg/L)		0.000028	<0.000010		0.000024	<0.000010
	Sodium (Na)-Dissolved (mg/L)		17.8	3.57		8.40	<0.050
	Strontium (Sr)-Dissolved (mg/L)		0.340	0.268		0.593	<0.00020
	Sulfur (S)-Dissolved (mg/L)		64.7	77.8		255	<0.50
	Thallium (Tl)-Dissolved (mg/L)		<0.000010	<0.000010		0.000287	<0.000010
	Tin (Sn)-Dissolved (mg/L)		<0.00010	<0.00010		<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)		0.00182	0.00098		<0.00030	<0.00030
	Uranium (U)-Dissolved (mg/L)		0.000187	0.000025		0.00290	<0.000010
	Vanadium (V)-Dissolved (mg/L)		0.00189	0.00052		<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)		0.0029	0.0138		3.63	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)		0.00049	<0.00030		<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1822156-11	L1822156-12	L1822156-13	L1822156-14	L1822156-15
		Description	Water	Water	Water	Water	Water
		Sampled Date	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16
		Sampled Time	14:00	12:55	15:25	14:30	13:10
		Client ID	GSI-HA-03A	GSI-DC-02B	GSI-DC-03B	GSI-DC-05B	GSI-HA-01A
Grouping	Analyte						
WATER							
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)			53.5	63.6	79.9	58.9
	Manganese (Mn)-Dissolved (mg/L)			4.04	2.32	3.32	0.122
	Mercury (Hg)-Dissolved (mg/L)			<0.0000050	0.000013 ^{DLIS}	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)			0.000365	0.00143	0.000574	0.000190
	Nickel (Ni)-Dissolved (mg/L)			0.00311	0.00923	0.00359	0.00139
	Phosphorus (P)-Dissolved (mg/L)			<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)			3.55	2.67	2.60	3.74
	Selenium (Se)-Dissolved (mg/L)			0.000075	0.000210	0.000069	<0.000050
	Silicon (Si)-Dissolved (mg/L)			9.03	7.66	7.73	6.51
	Silver (Ag)-Dissolved (mg/L)			<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)			4.91	6.18	8.39	4.88
	Strontium (Sr)-Dissolved (mg/L)			0.367	0.489	0.605	0.432
	Sulfur (S)-Dissolved (mg/L)			109	155	177	132
	Thallium (Tl)-Dissolved (mg/L)			<0.000010	0.000013	0.000011	<0.000010
	Tin (Sn)-Dissolved (mg/L)			<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)			0.00079	<0.00030	0.00039	<0.00030
	Uranium (U)-Dissolved (mg/L)			0.000187	0.00114	0.00163	0.000187
	Vanadium (V)-Dissolved (mg/L)			0.00083	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)			0.0051	0.0193	0.0020	0.0055
	Zirconium (Zr)-Dissolved (mg/L)			<0.00030	<0.00030	<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

11-OCT-16 14:11 (MT)

Version: FINAL REV. 2

Sample ID Description Sampled Date Sampled Time Client ID	L1822156-16 Water 30-AUG-16 13:45 GSI-HA-02A	L1822156-17 Water 30-AUG-16 14:20 GSI-HA-05A	L1822156-18 Water 30-AUG-16 10:05 MP09-04	L1822156-19 Water 30-AUG-16 10:55 MP09-05	L1822156-20 Water 30-AUG-16 17:00 MP09-09	
Grouping	Analyte					
WATER						
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)	51.8	40.3	81.6	61.4	0.52
	Manganese (Mn)-Dissolved (mg/L)	5.29	1.66	7.21	6.85	0.0352
	Mercury (Hg)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	0.0000395
	Molybdenum (Mo)-Dissolved (mg/L)	0.000659	0.000166	0.00675	0.00046	0.0138
	Nickel (Ni)-Dissolved (mg/L)	0.00547	<0.00050	<0.0010 ^{DLA}	0.0023	0.0113
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	0.076	<0.050	0.392
	Potassium (K)-Dissolved (mg/L)	3.52	2.44	51.1	9.48	9.05
	Selenium (Se)-Dissolved (mg/L)	<0.000050	0.000097	<0.00010 ^{DLA}	0.00013	0.00110
	Silicon (Si)-Dissolved (mg/L)	7.43	9.02	14.0	4.40	7.15
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.00151
	Sodium (Na)-Dissolved (mg/L)	4.92	4.02	30.0	40.5	34.6
	Strontium (Sr)-Dissolved (mg/L)	0.424	0.308	1.19	0.880	0.124
	Sulfur (S)-Dissolved (mg/L)	116	99.5	466	279	52.7
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	0.000116 ^{DLA}	0.000109 ^{DLA}	0.000051 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00050 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	0.00064	0.00103	<0.00060 ^{DLA}	<0.00060 ^{DLA}	<0.0015 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.000351	0.000085	0.000194 ^{DLA}	0.00161 ^{DLA}	0.00189 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.00050	0.00071	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0025 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0362	0.0027	0.554 ^{DLA}	0.0116 ^{DLA}	0.0068 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00060 ^{DLA}	<0.00060 ^{DLA}	<0.0015 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1822156-21	L1822156-22	L1822156-23	L1822156-24	L1822156-25
		Description	Water	Water	Water	Water	Water
		Sampled Date	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16
		Sampled Time	18:35	13:40	11:20	11:50	14:45
		Client ID	MP09-11	MW09-02	MW09-03	MW09-04	MW09-06
Grouping	Analyte						
WATER							
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)		38.4	60.5	91.0	58.2	40.2
	Manganese (Mn)-Dissolved (mg/L)		1.62	22.1	19.1	0.00077	2.15
	Mercury (Hg)-Dissolved (mg/L)		0.0000070	<0.0000050	<0.0000050	<0.0000050	0.0000062
	Molybdenum (Mo)-Dissolved (mg/L)		0.00246	0.00740	0.00574	0.000204	0.00317
	Nickel (Ni)-Dissolved (mg/L)		0.00479	0.0101	0.0010	<0.00050	0.00174
	Phosphorus (P)-Dissolved (mg/L)		0.080	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)		6.48	29.0	28.7	1.80	15.1
	Selenium (Se)-Dissolved (mg/L)		0.000264	<0.00025 ^{DLA}	<0.00010 ^{DLA}	0.000737	0.000259
	Silicon (Si)-Dissolved (mg/L)		10.1	7.11	12.1	5.90	8.57
	Silver (Ag)-Dissolved (mg/L)		0.000046	<0.000050 ^{DLA}	<0.000020 ^{DLA}	<0.000010	0.000041
	Sodium (Na)-Dissolved (mg/L)		8.09	24.0	28.1	9.21	14.6
	Strontium (Sr)-Dissolved (mg/L)		0.655	1.13	1.37	0.470	0.626
	Sulfur (S)-Dissolved (mg/L)		1.65	452	486	142	232
	Thallium (Tl)-Dissolved (mg/L)		0.000304	0.000278 ^{DLA}	0.000027 ^{DLA}	<0.000010	0.000296
	Tin (Sn)-Dissolved (mg/L)		<0.00010	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)		0.00259	<0.0015 ^{DLA}	<0.00060 ^{DLA}	<0.00030	<0.00030
	Uranium (U)-Dissolved (mg/L)		0.000183	0.00109	0.00108	0.00454	0.00126
	Vanadium (V)-Dissolved (mg/L)		0.00869	<0.0025 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)		0.0475	0.352 ^{DLA}	0.0034 ^{DLA}	0.0044	0.113
	Zirconium (Zr)-Dissolved (mg/L)		0.00218	<0.0015 ^{DLA}	<0.00060 ^{DLA}	<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1822156-26	L1822156-27	L1822156-28	L1822156-29	L1822156-30
		Description	Water	Water	Water	Water	Water
		Sampled Date	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16	30-AUG-16
		Sampled Time	09:10	11:55	10:30	09:35	09:35
		Client ID	MW09-08	MW09-21	MW09-23	MW09-24	DUP-2
Grouping	Analyte						
WATER							
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)		5.69	77.2	77.2	38.6	39.2
	Manganese (Mn)-Dissolved (mg/L)		2.30	5.51	14.7	0.0463	0.0436
	Mercury (Hg)-Dissolved (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Molybdenum (Mo)-Dissolved (mg/L)		<0.000050	0.000448	0.00142	0.000339	0.000324
	Nickel (Ni)-Dissolved (mg/L)		<0.00050	0.00170	0.0012	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)		0.120	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)		1.16	11.0	5.67	1.84	1.93
	Selenium (Se)-Dissolved (mg/L)		0.000139	0.000222	0.00011	0.000415	0.000478
	Silicon (Si)-Dissolved (mg/L)		10.2	5.82	6.62	6.48	6.67
	Silver (Ag)-Dissolved (mg/L)		<0.000010	0.000011	<0.000020 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)		1.50	46.1	17.4	6.97	6.94
	Strontium (Sr)-Dissolved (mg/L)		0.117	0.824	0.536	0.434	0.412
	Sulfur (S)-Dissolved (mg/L)		1.16	281	184	60.6	60.9
	Thallium (Tl)-Dissolved (mg/L)		<0.000010	0.000015	<0.000020 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)		<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)		0.00593	0.00208	0.00106	<0.00030	<0.00030
	Uranium (U)-Dissolved (mg/L)		0.000095	0.000815	0.00128	0.00331	0.00314
	Vanadium (V)-Dissolved (mg/L)		0.00473	0.00287	0.0025	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)		0.0066	0.0045	0.0128	0.0010	0.0024
	Zirconium (Zr)-Dissolved (mg/L)		0.00088	0.00086	0.00062	<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1822156-31 Water 30-AUG-16 09:35 FB-2	L1822156-32 Water 30-AUG-16 17:00 DUP-3			
Grouping	Analyte				
WATER					
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)	<0.10	0.55		
	Manganese (Mn)-Dissolved (mg/L)	<0.00010	0.0231		
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	0.0000413		
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.0139		
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.0197		
	Phosphorus (P)-Dissolved (mg/L)	<0.050	0.414		
	Potassium (K)-Dissolved (mg/L)	<0.10	10.2		
	Selenium (Se)-Dissolved (mg/L)	<0.000050	0.00118		
	Silicon (Si)-Dissolved (mg/L)	<0.050	7.54		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	0.00690		
	Sodium (Na)-Dissolved (mg/L)	<0.050	32.0		
	Strontium (Sr)-Dissolved (mg/L)	<0.00020	0.124		
	Sulfur (S)-Dissolved (mg/L)	<0.50	54.1		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	0.000063		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00050 ^{DLA}		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.0015 ^{DLA}		
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.00186		
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.0025 ^{DLA}		
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.0073		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.0015 ^{DLA}		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Total (as CaCO3)	B	L1822156-22, -23, -24, -25, -26, -27, -28, -29, -30, -32
Matrix Spike	Total Inorganic Carbon	MS-B	L1822156-2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32
Matrix Spike	Total Organic Carbon	MS-B	L1822156-15, -19, -20, -21, -26, -27, -28, -32
Matrix Spike	Mercury (Hg)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31,

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Silicon (Si)-Dissolved	MS-B	-32, -4, -5, -6, -7, -9 L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Aluminum (Al)-Total	MS-B	L1822156-8
Matrix Spike	Barium (Ba)-Total	MS-B	L1822156-8
Matrix Spike	Manganese (Mn)-Total	MS-B	L1822156-8
Matrix Spike	Sodium (Na)-Total	MS-B	L1822156-8
Matrix Spike	Strontium (Sr)-Total	MS-B	L1822156-8
Matrix Spike	Ammonia, Total (as N)	MS-B	L1822156-11, -12, -13, -14, -15, -16, -17, -21, -23, -24, -5, -6
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -7, -9
Matrix Spike	Sulfate (SO ₄)	MS-B	L1822156-1, -10, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Kjeldahl Nitrogen	MS-B	L1822156-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -8, -9
Matrix Spike	Total Kjeldahl Nitrogen	MS-B	L1822156-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -4, -5, -6, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DLA	Detection Limit adjusted for required dilution
DLIS	Detection Limit Adjusted: Insufficient Sample
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
HTP	Sample preparation or preservation hold time was exceeded.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TITR-VA	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
BE-D-L-CCMS-VA	Water	Diss. Be (low) in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
BE-T-L-CCMS-VA	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CARBONS-TIC-VA	Water	Total inorganic carbon by CO ₂ purge	APHA 5310B TOTAL ORGANIC CARBON (TOC)

Reference Information

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".

CARBONS-TOC-VA Water Total organic carbon by combustion APHA 5310B TOTAL ORGANIC CARBON (TOC)

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".

CL-IC-N-VA Water Chloride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CL-IC-N-WR Water Chloride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CN-FREE-CFA-VA Water Free Cyanide in water by CFA ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-SCN-VA Water Thiocyanate by Colour APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN- M "Thiocyanate" Thiocyanate is determined by the ferric nitrate colourimetric method.

CN-T-CFA-VA Water Total Cyanide in water by CFA ISO 14403:2002

This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.

CN-WAD-CFA-VA Water Weak Acid Diss. Cyanide in water by CFA APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.

EC-PCT-VA Water Conductivity (Automated) APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-VA Water Fluoride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

F-IC-N-WR Water Fluoride in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA Water Diss. Mercury in Water by CVAAS or CVAFS APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA Water Total Mercury in Water by CVAAS or CVAFS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-VA Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-VA Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Reference Information

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-VA Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TKN-F-VA Water TKN in Water by Fluorescence APHA 4500-NORG D.

This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L1822156-COFC

COC Number: 1 -

Page 1 of 3

Report To		Report Format / Distribution			Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)														
Company: Hemmera Environchem Inc.		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)														
Contact: Natasha Sandys		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT														
Address: 230 - 2237 2nd Avenue Whitehorse, YT		<input type="checkbox"/> Criteria on Report - provide details below if box checked			E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT														
Phone: 867-456-4865		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge														
Invoice To: Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Email 1 or Fax nsandys@hemmera.com			Specify Date Required for E2, E or P:														
Copy of Invoice with Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Email 2 chris@elr.ca			Analysis Request														
Company: Hemmera Environchem Inc.		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Contact: Natasha Sandys		Email 1 or Fax nsandys@hemmera.com			F/P F/P														
Project Information		Oil and Gas Required Fields (client use)			P P P														
ALS Quote #: Q56042		Approver ID: [REDACTED] Cost Center: [REDACTED]			Dissolved Metals, Hardness														
Job #: 1343-005.28		GL Account: [REDACTED] Routing Code: [REDACTED]			Dissolved Mercury														
PO / AFE:		Activity Code: [REDACTED]			Nitrate, Nitrite, Total Kjeldahl N (TKN)														
LSD:		Location: [REDACTED]			Cl, F, Sulfate, conductivity, pH, alkalinity														
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler: JC,MM,NB,AN		Anion Sum, Cation Sum, Cation/Anion Balan													
ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Cyanide - Weak Acid Diss., Total, Free												
1		CH-P-13-03/50		29-Aug-16	15:45	Water	Ammonia N (total), Total Organic Carbon												
2		GSI-HA-04A		29-Aug-16	10:30	Water	Thiocyanate (SCN)												
3		MW09-16		29-Aug-16	11:25	Water	Total Inorganic Carbon												
4		MW09-18		29-Aug-16	12:35	Water	Number of Containers												
5		MW09-19		29-Aug-16	13:45	Water													
6		MW09-22		29-Aug-16	17:20	Water													
7		GSI-HA-03A		29-Aug-16	9:20	Water													
8		Travel Blank				Water													
9		DUP-1		29-Aug-16	11:25	Water													
10		FB-1		29-Aug-16	11:25	Water													
11		GSI-HA-03A		30-Aug-16	14:00	Water													
12		GSI-DC-02B		30-Aug-16	12:55	Water													
Drinking Water (DW) Samples ¹ (client use)				Special Instructions / Specify Criteria to add on report (client use)				SAMPLE CONDITION AS RECEIVED (lab use only)											
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Please send ELR EQWin EDD file with regular results report.				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								Ice packs Yes <input type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
								Cooling Initiated <input type="checkbox"/>											
								INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C					
														3/3/5 C					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)											
Released by: C. J. [Signature]		Date: Aug 31	Time: 14:30	Received by: [Signature]		Date: 31-AUG-16	Time: 2:30	Received by: lady				Date: Sept-1		Time: 2PM					

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white report copy.

FORM 4325e-08 Rev 04 January 2014



Report To		Report Format / Distribution			Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)												
Company: Hemmera Environchem Inc.		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)												
Contact: Natasha Sandys		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT												
Address: 230 - 2237 2nd Avenue Whitehorse, YT		<input type="checkbox"/> Criteria on Report - provide details below if box checked			E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT												
Phone: 867-456-4865		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge												
		Email 1 or Fax nsandys@hemmera.com			Specify Date Required for E2,E or P:												
		Email 2 chris@elr.ca			Analysis Request												
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX			F/P F/P												
Copy of Invoice with Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Email 1 or Fax nsandys@hemmera.com			Dissolved Metals, Hardness												
Company: Hemmera Environchem Inc.		Email 2 chris@elr.ca			Dissolved Mercury												
Contact: Natasha Sandys		Project Information			Nitrate, Nitrite, Total Kjeldahl N (TKN)												
		Oil and Gas Required Fields (client use)			Cl, F1, Sulfate, conductivity, pH, alkalinity												
ALS Quote #: Q56042		Approver ID: [REDACTED] Cost Center: [REDACTED]			Anion Sum, Cation Sum, Cation/Anion Balance												
Job #: 1343-005.28		GL Account: [REDACTED] Routing Code: [REDACTED]			Cyanide - Weak Acid Diss., Total, Free												
PO / AFE:		Activity Code: [REDACTED]			Ammonia N (total), Total Organic Carbon												
LSD:		Location: [REDACTED]			Thiocyanate (SCN)												
ALS Lab Work Order # (lab use only)		ALS Contact:			Total Inorganic Carbon												
		Sampler: JC,MM,NB,AN			Number of Containers												
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Dissolved Metals, Hardness	Dissolved Mercury	Nitrate, Nitrite, Total Kjeldahl N (TKN)	Cl, F1, Sulfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum, Cation/Anion Balance	Cyanide - Weak Acid Diss., Total, Free	Ammonia N (total), Total Organic Carbon	Thiocyanate (SCN)	Total Inorganic Carbon	Number of Containers			
13	GSI-DC-03B	30-Aug-16	15:25	Water	R	R	R	R	R	R	R	R	R	7			
14	GSI-DC-05B	30-Aug-16	14:30	Water	R	R	R	R	R	R	R	R	R	7			
15	GSI-HA-01A	30-Aug-16	13:10	Water	R	R	R	R	R	R	R	R	R	7			
16	GSI-HA-02A	30-Aug-16	13:45	Water	R	R	R	R	R	R	R	R	R	7			
17	GSI-HA-05A	30-Aug-16	14:20	Water	R	R	R	R	R	R	R	R	R	7			
18	MP09-04	30-Aug-16	10:05	Water	R	R	R	R	R	R	R	R	R	7			
19	MP09-05	30-Aug-16	10:55	Water	R	R	R	R	R	R	R	R	R	7			
20	MP09-09	30-Aug-16	17:00	Water	R	R	R	R	R	R	R	R	R	7			
21	MP09-11	30-Aug-16	18:35	Water	R	R	R	R	R	R	R	R	R	7			
22	MW09-02	30-Aug-16	13:40	Water	R	R	R	R	R	R	R	R	R	7			
23	MW09-03	30-Aug-16	11:20	Water	R	R	R	R	R	R	R	R	R	7			
24	MW09-04	30-Aug-16	11:50	Water	R	R	R	R	R	R	R	R	R	7			
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report (client Use)			SAMPLE CONDITION AS RECEIVED (lab use only)												
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Please send ELR EQW in EDD file with regular results report.			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>												
Are samples for human drinking water use? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Ice packs Yes <input type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>												
					Cooling Initiated <input type="checkbox"/>												
					INITIAL COOLER TEMPERATURES °C												
					FINAL COOLER TEMPERATURES °C												
					3/3/5 c												
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)									
Released by: C. Jostad		Date: Aug 31		Time: 14:30		Received by: [Signature]		Date: 31-Aug-16		Time: 2:30		Received by: [Signature]		Date: Sept. 1		Time: 2PM	



ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L1822156-COFC

COC Number: 1 -

Page 3 of 3

Report To		Report Format / Distribution			Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)																																																																																																																																																																																																																																																																	
Company: Hemmera Environchem Inc.		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)																																																																																																																																																																																																																																																																	
Contact: Natasha Sandys		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT																																																																																																																																																																																																																																																																	
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25	MW09-06			30-Aug-16	14:45	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																														
26	MW09-08			30-Aug-16	9:10	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
27	MW09-21			30-Aug-16	11:55	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
28	MW09-23			30-Aug-16	10:30	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
29	MW09-24			30-Aug-16	9:35	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
30	DUP-2			30-Aug-16	9:35	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
31	FB-2			30-Aug-16	9:35	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
32	DUP-3			30-Aug-16	17:00	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		7																																																																																																																																																																																																																																													
33	GSI-HA-03A			29-Aug-16	9:20	Water	R	R	R	R	R	R													4																																																																																																																																																																																																																																													
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