HEMMERA ENVIROCHEM INC.
ATTN: Natasha Sandys
230 - 2237 2nd Avenue
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Date Received: 03-FEB-16
Report Date: 16-FEB-16 15:36 (MT)
Version: FINAL

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1730670

Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.14
C of C Numbers: 1-1343-005.14
Legal Site Desc:

Brent Mack, B.Sc.
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1730670-1	L1730670-2	L1730670-3	L1730670-4	L1730670-5
Description	Water	Water	Water	Water	Water
Sampled Date	01-FEB-16	01-FEB-16	01-FEB-16	01-FEB-16	01-FEB-16
Sampled Time	16:35	13:10	13:10	13:10	12:10
Client ID	GSI-HA-01A	MW09-18	MW16-100	FB16-100	MW09-19
Grouping / **Analyte**					
WATER					
Physical Tests Conductivity (uS/cm)		2700	2780	<2.0	1530
Hardness (as CaCO3) (mg/L)		1940	1930	<0.50	962
pH (pH)		7.15	7.10	5.46	7.15
Anions and Nutrients Alkalinity, Total (as CaCO3) (mg/L)		476	498	<1.0	314
Ammonia, Total (as N) (mg/L)		0.0189	0.0225	<0.0050	2.71
Chloride (Cl) (mg/L)		<5.0 DLA	<5.0 DLA	<0.50	<2.5 DLA
Fluoride (F) (mg/L)		<0.20 DLA	<0.20 DLA	<0.020	<0.10 DLA
Nitrate (as N) (mg/L)		0.197	0.078	<0.0050	0.743
Nitrite (as N) (mg/L)		<0.010 DLA	<0.010 DLA	<0.0010	0.0077
Total Kjeldahl Nitrogen (mg/L)		0.229	0.189	<0.050	3.35
Sulfate (SO4) (mg/L)		1440	1450	<0.30	630
Sulphide as S (mg/L)		<0.020	<0.020	<0.020	0.042
Anion Sum (meq/L)		39.5	40.0	<0.10	19.4
Cation Sum (meq/L)		39.6	39.2	<0.10	20.4
Cation - Anion Balance (%)		0.1	-1.0	0.0	2.4
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
Cyanide, Free (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon Total Inorganic Carbon (mg/L)		113	108	<0.50	70.2
Total Organic Carbon (mg/L)		6.27	3.89	<0.50	15.3
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

Grouping	Analyte	L1730670-6 Water 01-FEB-16 17:15 GSI-HA-04A	L1730670-7 Water 01-FEB-16 15:30 GSI-DC-2B	L1730670-8 Water 02-FEB-16 16:00 GSI-DC-2B	L1730670-9 Water 02-FEB-16 14:30 CH-P-13-03/50	L1730670-10 Water 02-FEB-16 17:00 MW09-02
WATER						
Physical Tests	Conductivity (uS/cm)	1170	988		2640	2660
	Hardness (as CaCO3) (mg/L)	712	613		1780	1530
	pH (pH)	7.96	8.06		7.06	6.78
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	254	291		347	63.4
	Ammonia, Total (as N) (mg/L)		0.149		0.131	10.2
	Chloride (Cl) (mg/L)	<1.0 DLA	<1.0 DLA		<5.0 DLA	<5.0 DLA
	Fluoride (F) (mg/L)	0.061	0.061		<0.20 DLA	0.47
	Nitrate (as N) (mg/L)	<0.010 DLA	0.466		2.49	0.068
	Nitrite (as N) (mg/L)	0.0031	0.0103		0.060	<0.010 DLA
	Total Kjeldahl Nitrogen (mg/L)		1.17		1.36	10.2
	Sulfate (SO4) (mg/L)	453	300		1500	1720
	Sulphide as S (mg/L)			<0.020	<0.020	<0.020
	Anion Sum (meq/L)	14.5	12.1		38.4	37.1
	Cation Sum (meq/L)	15.0	12.7		37.4	36.4
	Cation - Anion Balance (%)	1.7	2.3		-1.3	-1.0
Cyanides	Cyanide, Weak Acid Diss (mg/L)		<0.0050		<0.0050	0.0088
	Cyanide, Total (mg/L)		<0.0050		<0.0050	0.0207
	Thiocyanate (SCN) (mg/L)			<0.50	<0.50	0.62
	Cyanide, Free (mg/L)		<0.0050		<0.0050	<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)			68.4	91	7.60
	Total Organic Carbon (mg/L)		15.6		18.3	6.25
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

Grouping	Analyte	L1730670-11 Water 02-FEB-16 13:30 MW09-24	L1730670-12 Water 02-FEB-16 TRIP BLANK	L1730670-13 Water 02-FEB-16 14:30 FB16-200		
WATER						
Physical Tests	Conductivity (uS/cm)	838	<2.0	<2.0		
	Hardness (as CaCO3) (mg/L)	529	<0.50	<0.50		
	pH (pH)	7.46	5.41	5.39		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	161	<1.0	<1.0		
	Ammonia, Total (as N) (mg/L)	0.0083	<0.0050	<0.0050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50		
	Fluoride (F) (mg/L)	0.029	<0.020	<0.020		
	Nitrate (as N) (mg/L)	2.83	<0.0050	<0.0050		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Total Kjeldahl Nitrogen (mg/L)	0.415	<0.050	<0.050		
	Sulfate (SO4) (mg/L)	288	<0.30	<0.30		
	Sulphide as S (mg/L)	<0.020	<0.020	<0.020		
	Anion Sum (meq/L)	9.42	<0.10	<0.10		
	Cation Sum (meq/L)	11.0	<0.10	<0.10		
	Cation - Anion Balance (%)	7.9	0.0	0.0		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050		
	Cyanide, Total (mg/L)	0.0077	<0.0050	<0.0050		
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	<0.50		
	Cyanide, Free (mg/L)	<0.0050	<0.0050	<0.0050		
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	37.4	<0.50	<0.50		
	Total Organic Carbon (mg/L)	6.18	<0.50	<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			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1730670-1 Water 01-FEB-16 16:35 GSI-HA-01A	L1730670-2 Water 01-FEB-16 13:10 MW09-18	L1730670-3 Water 01-FEB-16 13:10 MW16-100	L1730670-4 Water 01-FEB-16 13:10 FB16-100	L1730670-5 Water 01-FEB-16 12:10 MW09-19
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
	Aluminum (Al)-Dissolved (mg/L)		<0.0020 DLA	<0.0020 DLA	<0.0010	0.0037
	Antimony (Sb)-Dissolved (mg/L)		0.00043	0.00041	<0.00010	0.00042
	Arsenic (As)-Dissolved (mg/L)		0.0519	0.0501	<0.00010	0.0224
	Barium (Ba)-Dissolved (mg/L)		0.00889	0.00894	<0.000050	0.0305
	Beryllium (Be)-Dissolved (mg/L)		<0.000040 DLA	<0.000040 DLA	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)		<0.00010 DLA	<0.00010 DLA	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)		<0.020 DLA	<0.020 DLA	<0.010	0.112
	Cadmium (Cd)-Dissolved (mg/L)		0.000057	0.000037	<0.0000050	0.0000435
	Calcium (Ca)-Dissolved (mg/L)		359	359	<0.050	217
	Chromium (Cr)-Dissolved (mg/L)		<0.00020 DLA	<0.00020 DLA	<0.00010	0.00033
	Cobalt (Co)-Dissolved (mg/L)		0.00023	0.00024	<0.00010	0.00194
	Copper (Cu)-Dissolved (mg/L)		<0.00040 DLA	<0.00040 DLA	<0.00020	0.00093
	Iron (Fe)-Dissolved (mg/L)		0.016	0.019	<0.010	3.00
	Lead (Pb)-Dissolved (mg/L)		<0.00010 DLA	<0.00010 DLA	<0.000050	0.000622
	Lithium (Li)-Dissolved (mg/L)		0.0224	0.0224	<0.0010	0.0076

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1730670-6 Water 01-FEB-16 17:15 GSI-HA-04A	L1730670-7 Water 01-FEB-16 15:30 GSI-DC-2B	L1730670-8 Water 02-FEB-16 16:00 GSI-DC-2B	L1730670-9 Water 02-FEB-16 14:30 CH-P-13-03/50	L1730670-10 Water 02-FEB-16 17:00 MW09-02
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)	0.0100	0.0015		0.0044	0.0020
	Antimony (Sb)-Dissolved (mg/L)	0.00032	0.00057		0.00026	0.00396
	Arsenic (As)-Dissolved (mg/L)	0.0421	0.00325		0.00040	15.0
	Barium (Ba)-Dissolved (mg/L)	0.158	0.119		0.0390	0.00625
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020		<0.000040 DLA	<0.000040 DLA
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050		<0.00010 DLA	<0.00010 DLA
	Boron (B)-Dissolved (mg/L)	<0.010	0.010		<0.020 DLA	0.075
	Cadmium (Cd)-Dissolved (mg/L)	0.0000050	0.0000586		0.000181	0.000446
	Calcium (Ca)-Dissolved (mg/L)	180	158		450	480
	Chromium (Cr)-Dissolved (mg/L)	0.00034	0.00022		<0.00020 DLA	<0.00020 DLA
	Cobalt (Co)-Dissolved (mg/L)	0.00021	0.00146		0.00071	0.0106
	Copper (Cu)-Dissolved (mg/L)	0.00030	0.00295		0.00250	<0.00040 DLA
	Iron (Fe)-Dissolved (mg/L)	8.26	0.131		0.023	24.9
	Lead (Pb)-Dissolved (mg/L)	0.000256	0.000095		<0.00010 DLA	0.00021
	Lithium (Li)-Dissolved (mg/L)	0.0026	0.0019		0.0032	0.0158

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1730670-11	L1730670-12	L1730670-13		
Description	Water	Water	Water		
Sampled Date	02-FEB-16	02-FEB-16	02-FEB-16		
Sampled Time	13:30		14:30		
Client ID	MW09-24	TRIP BLANK	FB16-200		
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		
Dissolved Metals Filtration Location	FIELD		FIELD		
Aluminum (Al)-Dissolved (mg/L)	0.0029		<0.0010		
Antimony (Sb)-Dissolved (mg/L)	0.00018		<0.00010		
Arsenic (As)-Dissolved (mg/L)	0.00134		<0.00010		
Barium (Ba)-Dissolved (mg/L)	0.176		<0.000050		
Beryllium (Be)-Dissolved (mg/L)	<0.000020		<0.000020		
Bismuth (Bi)-Dissolved (mg/L)	<0.000050		<0.000050		
Boron (B)-Dissolved (mg/L)	0.012		<0.010		
Cadmium (Cd)-Dissolved (mg/L)	0.0000535		<0.0000050		
Calcium (Ca)-Dissolved (mg/L)	153		<0.050		
Chromium (Cr)-Dissolved (mg/L)	0.00027		<0.00010		
Cobalt (Co)-Dissolved (mg/L)	0.00030		<0.00010		
Copper (Cu)-Dissolved (mg/L)	0.00519		<0.00020		
Iron (Fe)-Dissolved (mg/L)	<0.010		<0.010		
Lead (Pb)-Dissolved (mg/L)	<0.000050		<0.000050		
Lithium (Li)-Dissolved (mg/L)	<0.0010		<0.0010		

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1730670-1	L1730670-2	L1730670-3	L1730670-4	L1730670-5
Description	Water	Water	Water	Water	Water
Sampled Date	01-FEB-16	01-FEB-16	01-FEB-16	01-FEB-16	01-FEB-16
Sampled Time	16:35	13:10	13:10	13:10	12:10
Client ID	GSI-HA-01A	MW09-18	MW16-100	FB16-100	MW09-19
Grouping / **Analyte**					
WATER					
Dissolved Metals Magnesium (Mg)-Dissolved (mg/L)		254	250	<0.10	102
Manganese (Mn)-Dissolved (mg/L)		0.576	0.577	<0.00010	4.75
Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050 DLA	<0.0000050 DLA	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved (mg/L)		<0.00010	<0.00010	<0.000050	0.000270
Nickel (Ni)-Dissolved (mg/L)		<0.0010 DLA	<0.0010 DLA	<0.00050	0.00267
Phosphorus (P)-Dissolved (mg/L)		<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved (mg/L)		7.34	7.37	<0.10	6.52
Selenium (Se)-Dissolved (mg/L)		0.00015	0.00014	<0.000050	0.000166
Silicon (Si)-Dissolved (mg/L)		5.23	5.30	<0.050	6.98
Silver (Ag)-Dissolved (mg/L)		<0.000020 DLA	<0.000020 DLA	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)		12.2	12.4	<0.050	11.1
Strontium (Sr)-Dissolved (mg/L)		1.05	1.05	<0.00020	0.714
Sulfur (S)-Dissolved (mg/L)		477	474	<0.50	214
Thallium (Tl)-Dissolved (mg/L)		0.000285	0.000269	<0.000010	<0.000010
Tin (Sn)-Dissolved (mg/L)		<0.00020 DLA	0.00021 DLA	<0.00010	0.00555
Titanium (Ti)-Dissolved (mg/L)		<0.00060	<0.00060	<0.00030	0.00033
Uranium (U)-Dissolved (mg/L)		0.00802	0.00789	<0.000010	0.000557
Vanadium (V)-Dissolved (mg/L)		<0.0010 DLA	<0.0010 DLA	<0.00050	<0.00050
Zinc (Zn)-Dissolved (mg/L)		0.0034	0.0032	<0.0010	0.0126
Zirconium (Zr)-Dissolved (mg/L)		<0.00060 DLA	<0.00060 DLA	<0.00030	<0.00030

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1730670-6 Water 01-FEB-16 17:15 GSI-HA-04A	L1730670-7 Water 01-FEB-16 15:30 GSI-DC-2B	L1730670-8 Water 02-FEB-16 16:00 GSI-DC-2B	L1730670-9 Water 02-FEB-16 14:30 CH-P-13-03/50	L1730670-10 Water 02-FEB-16 17:00 MW09-02
WATER						
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)	63.6	53.1		158	81.4
	Manganese (Mn)-Dissolved (mg/L)	1.77	2.51		0.230	21.3
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050		<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000279	0.00333		0.00047	0.00623
	Nickel (Ni)-Dissolved (mg/L)	0.00071	0.0147		0.0195	0.0030
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050		<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	2.67	3.70		8.27	43.6
	Selenium (Se)-Dissolved (mg/L)	0.000074	0.000054		0.00733	<0.00010 DLA
	Silicon (Si)-Dissolved (mg/L)	6.54	7.81		7.06	7.07
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010		<0.000020 DLA	<0.000020 DLA
	Sodium (Na)-Dissolved (mg/L)	5.15	5.18		38.3	40.0
	Strontium (Sr)-Dissolved (mg/L)	0.507	0.352		1.13	0.950
	Sulfur (S)-Dissolved (mg/L)	148	102		478	551
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010		0.000062	0.000161
	Tin (Sn)-Dissolved (mg/L)	0.00077	0.00012		0.00026	<0.00020 DLA
	Titanium (Ti)-Dissolved (mg/L)	0.00072	<0.00030		<0.00060 DLA	<0.00060 DLA
	Uranium (U)-Dissolved (mg/L)	0.000943	0.000562		0.0106	0.000866
	Vanadium (V)-Dissolved (mg/L)	0.00063	<0.00050		<0.0010 DLA	<0.0010 DLA
	Zinc (Zn)-Dissolved (mg/L)	0.0024	0.0111		0.0237	0.239
	Zirconium (Zr)-Dissolved (mg/L)	<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

Grouping	Analyte	Sample ID: L1730670-11 Description: Water Sampled Date: 02-FEB-16 Sampled Time: 13:30 Client ID: MW09-24	Sample ID: L1730670-12 Description: Water Sampled Date: 02-FEB-16 Client ID: TRIP BLANK	Sample ID: L1730670-13 Description: Water Sampled Date: 02-FEB-16 Sampled Time: 14:30 Client ID: FB16-200		
WATER						
Dissolved Metals	Magnesium (Mg)-Dissolved (mg/L)	36.0		<0.10		
	Manganese (Mn)-Dissolved (mg/L)	0.00060		<0.00010		
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050		<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000292		<0.000050		
	Nickel (Ni)-Dissolved (mg/L)	<0.00050		<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	<0.050		<0.050		
	Potassium (K)-Dissolved (mg/L)	1.74		<0.10		
	Selenium (Se)-Dissolved (mg/L)	0.000841		<0.000050		
	Silicon (Si)-Dissolved (mg/L)	6.94		<0.050		
	Silver (Ag)-Dissolved (mg/L)	<0.000010		<0.000010		
	Sodium (Na)-Dissolved (mg/L)	9.51		<0.050		
	Strontium (Sr)-Dissolved (mg/L)	0.555		<0.00020		
	Sulfur (S)-Dissolved (mg/L)	114		<0.50		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010		<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010		<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00030		<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.00170		<0.000010		
	Vanadium (V)-Dissolved (mg/L)	<0.00050		<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	0.0027		<0.0010		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030		<0.00030		

* 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	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Method Blank	Alkalinity, Total (as CaCO3)	B	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Method Blank	Alkalinity, Total (as CaCO3)	B	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Aluminum (Al)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Cadmium (Cd)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Cobalt (Co)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Copper (Cu)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Nickel (Ni)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Selenium (Se)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Vanadium (V)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Beryllium (Be)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Aluminum (Al)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Copper (Cu)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Vanadium (V)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Potassium (K)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1730670-10, -11, -13, -2, -3, -4, -5, -6, -7, -9
Matrix Spike	Total Inorganic Carbon	MS-B	L1730670-10, -3, -9
Matrix Spike	Total Kjeldahl Nitrogen	MSTN	L1730670-10, -11, -12, -13, -2, -3, -4, -5, -7, -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
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
MSTN	TKN Matrix Spike recovery was low due to interference from high nitrate, which causes negative bias on TKN.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Reference Information

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.

CARBONS-TIC-VA Water Total inorganic carbon by CO2 purge APHA 5310B TOTAL ORGANIC CARBON (TOC)

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-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-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:

Reference Information

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

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-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-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

Reference Information

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.

S2-T-COL-VA	Water	Total Sulphide by Colorimetric	APHA 4500-S2 Sulphide

This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methlyene blue colourimetric method.

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
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1-1343-005.14

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

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1730670-COFC

COC Number: 1 - 1343-005.14

Page 1 of 2

Report To		Report Format	
Company:	Hemmera Environchem Inc.	Select Report Format:	☑PDF ☑EXCEL ☑EDD (DIGITAL)
Contact:	Natasha Sandys	Quality Control (QC) Report with Report	☑ Yes ☐ No
Address:	230 - 2237 2nd Avenue Whitehorse, YT	☐Criteria on Report - provide details below if box checked	
Phone:	867-456-4865	Select Distribution:	☑EMAIL ☐MAIL ☐FAX
		Email 1 or Fax	nsandys@hemmera.com, jhains@hemmera.com
		Email 2	chris@elr.ca

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☑EMAIL ☑MAIL ☐FAX
	Copy of Invoice with Report ☐ Yes ☑ No	Email 1 or Fax	nsandys@hemmera.com
Company:	Hemmera Environchem Inc.	Email 2	chris@elr.ca
Contact:	Natasha Sandys		

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q50588	Approver ID:	Cost Center:
Job #:	1343-005.14	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact:

Sampler: RM, JC, AN, MM

Turnaround Time (TAT) Option (Rush TAT is not available for all tests)

- R ☑ Regular (Standard TAT if received by 3 pm - business days)
- P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
- E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
- E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

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	F/P Dissolved Metals, Hardness	F/P Dissolved Mercury	Nitrate, Nitrite, Total Kjeldahl N (TKN)	Cl, Fl, Sulfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum,Cation/Anion Bala	P Cyanide - Weak Acid Diss., Total, Free	P Ammonia N (total), Total Organic Carbon	P Thiocyanate (SCN)	P Sulphide as S	Total Inorganic Carbon	Number of Containers
	GSI-HA-01A	01-Feb-16	16:35	Water		R									1
	MW09-18	01-Feb-16	13:10	Water	R	R	R	R	R	R	R	R	R	R	8
	MW16-100	01-Feb-16	13:10	Water	R	R	R	R	R	R	R	R	R	R	8
	FB16-100	01-Feb-16	13:10	Water	R	R	R	R	R	R	R	R	R	R	8
	MW09-19	01-Feb-16	12:10	Water	R	R	R	R	R	R	R	R	R	R	8
	GSI-HA-04A	01-Feb-16	17:15	Water	R	R	R	R	R						3
	GSI-DC-02B	01-Feb-16	15:30	Water	R	R	R	R	R	R	R				5
	GSI-DC-02B	02-Feb-16	16:00	Water								R	R	R	3
	CH-P-13-03/50	02-Feb-16	14:30	Water	R	R	R	R	R	R	R	R	R	R	8
	MW09-02	02-Feb-16	17:00	Water	R	R	R	R	R	R	R	R	R	R	8
	MW09-24	02-Feb-16	13:30	Water	R	R	R	R	R	R	R	R	R	R	8
	Trip Blank	02-Feb-16	-	Water	R	R	R	R	R	R	R	R	R	R	8

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☑ No

Are samples for human drinking water use? ☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

- See attached parameter sheet for list of full parameters and metals required. -GSI-HA-04A Gen Chem has limited quantities
GSI-DC-02B TIC has limited quantities

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐ No ☐
Ice packs	Yes ☑ No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated	☐		

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.5	5.0				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:
Jstin Hains	Feb 3, 2016	09:45		3-Feb-16	3:30

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0318e v09 Front/04 January 2014

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.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1730670-COFC

COC Number: 1 - 1343-005.14

Report To		Report Format / Distribution	(Rush Turnaround Time (TAT) is not available for all tests)
Company:	Hemmera Environchem Inc.	Select Report Format: ☑PDF ☑EXCEL ☑EDD (DIGITAL)	R ☑Regular (Standard TAT if received by 3 pm - business days)
Contact:	Natasha Sandys	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	230 - 2237 2nd Avenue Whitehorse, YT	☐Criteria on Report - provide details below if box checked	E ☐Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	867-456-4865	Select Distribution: ☑EMAIL ☐MAIL ☐FAX	E2 ☐Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax nsandys@hemmera.com, jhains@hemmera.com	Specify Date Required for E2,E or P:
		Email 2 chris@elr.ca	

Invoice To	Same as Report To ☑ Yes ☐ No	Invoice Distribution	
	Copy of Invoice with Report ☐ Yes ☑ No	Select Invoice Distribution: ☑EMAIL ☑MAIL ☐FAX	
Company:	Hemmera Environchem Inc.	Email 1 or Fax nsandys@hemmera.com	
Contact:	Natasha Sandys	Email 2 chris@elr.ca	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q50588	Approver ID:	Cost Center:
Job #:	1343-005.14	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler: RM, JC, AN, MM

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

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	F/P Dissolved Metals, Hardness	F/P Dissolved Mercury	Nitrate, Nitrite, Total Kjeldahl N (TKN)	Cl, Fl, Sulfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum, Cation/Anion Bala	P Cyanide - Weak Acid Diss., Total, Free	P Ammonia N (total), Total Organic Carbon	P Thiocyanate (SCN)	P Sulphide as S	Total Inorganic Carbon	Number of Containers
	FB16-200	02-Feb-16	14:30	Water	R	R	R	R	R	R	R	R	R	R	8

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	- See attached parameter sheet for list of full parameters and metals required.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐		SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated ☐					

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Justin Hains	Date: Feb 3, 2016	Time: 08:45	Received by:	Date:	Time:	Received by:	Date:	Time:

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.