



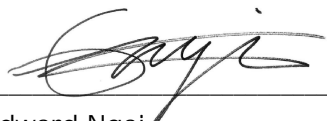
Pre-Pay Clients - Vancouver
ATTN: Laura Guillon
Northwest Research and Monitoring
PO Box 4357
Smithers BC V0J 2N0

Date Received: 27-MAR-19
Report Date: 08-APR-19 17:40 (MT)
Version: FINAL

Client Phone: 250-877-7858

Certificate of Analysis

Lab Work Order #: L2249762
Project P.O. #: NOT SUBMITTED
Job Reference: MWMT 5 IN 30
C of C Numbers: 17-827276
Legal Site Desc:



Edward Ngai
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L2249762-1 Water 26-MAR-19 10:00 CUTTHROAT CREEK	L2249762-2 Water 26-MAR-19 11:10 MCBRIDE CREEK	L2249762-3 Water 26-MAR-19 13:22 MORICE RIVER	L2249762-4 Water 26-MAR-19 10:45 NANIKA RIVER	L2249762-5 Water 26-MAR-19 11:45 CRYSTAL CREEK
Grouping	Analyte					
WATER						
Field Tests	Conductivity, Client Supplied (uS/cm)	29.3	21.7	23.8	29.7	44.8
	Conductivity, Unadjusted Client Supplied (uS/cm)	56	40.7	42	55.2	85.5
	Diss. Oxygen, Client Supplied (mg/L)	10.53	11.02	12.84	13.64	13.72
	Dissolved Oxygen (%), Client Supplied (%)	72.5	76.9	93.6	94.6	93.8
	pH, Client Supplied (pH)	7.88	6.96	7.65	7.53	7.62
	Temperature, Client Supplied (C)	0	.6	2.2	.5	0
Physical Tests	Hardness (as CaCO3) (mg/L)	26.8	19.0	21.0	26.4	38.6
	ORP (mV)	294	289	275	281	277
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	<3.0	<3.0
	Total Dissolved Solids (mg/L)	48	46	31	40	58
	Turbidity (NTU)	1.30	0.32	0.21	0.48	0.94
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	22.2	17.2	16.6	17.1	37.4
	Ammonia, Total (as N) (mg/L)	0.0102	<0.0050	<0.0050	<0.0050	<0.0050
	Nitrate and Nitrite (as N) (mg/L)	0.0428	0.0164	0.0462	0.0377	0.0604
	Nitrate (as N) (mg/L)	0.0428	0.0164	0.0462	0.0377	0.0604
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Total Kjeldahl Nitrogen (mg/L)	0.190	0.217	<0.050	0.064 ^{RRV}	<0.050
	Total Nitrogen (mg/L)	0.233	0.233	0.070	0.102	0.088
	Total Dissolved Nitrogen (mg/L)	0.233	0.224	0.078	0.079	0.091
	Phosphorus (P)-Total (mg/L)	0.0080	0.0055	0.0022	0.0022	0.0037
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	6.42	9.75	1.21	1.54	2.12
Total Metals	Aluminum (Al)-Total (mg/L)	0.109	0.105	0.0198	0.0347	0.0656
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00036	0.00029	0.00010	0.00014	0.00021
	Barium (Ba)-Total (mg/L)	0.0151	0.0129	0.0145	0.0147	0.00485
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0000102	<0.0000050	0.0000078	0.0000131	<0.0000050
	Calcium (Ca)-Total (mg/L)	8.74	5.30	6.79	8.35	13.9
	Cesium (Cs)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium (Cr)-Total (mg/L)	0.00020	0.00026	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Total (mg/L)	0.00018	<0.00010	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	0.00286	0.00082	0.00065	0.00149	0.00085
	Iron (Fe)-Total (mg/L)	0.788	0.176	0.014	0.067	0.057
	Lead (Pb)-Total (mg/L)	0.000191	<0.000050	<0.000050	<0.000050	<0.000050

* 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		L2249762-6 Water 26-MAR-19 12:13 GOSNELL CREEK	L2249762-7 Water 26-MAR-19 12:34 SHEA CREEK	L2249762-8 Water 26-MAR-19 10:45 NANIKA RIVER DUPLICATE	L2249762-9 Water 26-MAR-19 12:13 FIELD BLANK	L2249762-10 Water 26-MAR-19 TRAVEL BLANK
Grouping	Analyte					
WATER						
Field Tests	Conductivity, Client Supplied (uS/cm)	40.1	24			
	Conductivity, Unadjusted Client Supplied (uS/cm)	76.6	45.9			
	Diss. Oxygen, Client Supplied (mg/L)	12.62	13.49			
	Dissolved Oxygen (%), Client Supplied (%)	86.5	92.3			
	pH, Client Supplied (pH)	7.16	7.45			
	Temperature, Client Supplied (C)	0	.1			
Physical Tests	Hardness (as CaCO3) (mg/L)	34.9	20.7	24.9	216	<0.50 ^{HTC}
	ORP (mV)	278	283	285	262	367
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	<3.0	<3.0
	Total Dissolved Solids (mg/L)	51	37	38	249	<10
	Turbidity (NTU)	2.43	0.73	0.46	<0.10	<0.10
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	35.0	23.1	17.6	159	<1.0
	Ammonia, Total (as N) (mg/L)	<0.0050	0.0051	<0.0050	<0.0050	<0.0050
	Nitrate and Nitrite (as N) (mg/L)	0.0465	0.0408	0.0393	0.396	<0.0051
	Nitrate (as N) (mg/L)	0.0465	0.0408	0.0393	0.396	<0.0050
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Total Kjeldahl Nitrogen (mg/L)	0.051	0.063	<0.050 ^{RRV}	<0.050 ^{RRV}	<0.050
	Total Nitrogen (mg/L)	0.098	0.103	0.071 ^{RRV}	0.420 ^{RRV}	<0.030
	Total Dissolved Nitrogen (mg/L)	0.088	0.110	0.068	0.400 ^{RRV}	<0.030
Organic / Inorganic Carbon	Phosphorus (P)-Total (mg/L)	0.0056	0.0033	<0.0020	<0.0020	<0.0020
	Dissolved Organic Carbon (mg/L)	1.99	2.92	2.45	<0.50	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	0.129	0.0416	0.0354	<0.0030	<0.0030
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00017	0.00014	0.00017	0.00011	<0.00010
	Barium (Ba)-Total (mg/L)	0.0166	0.0204	0.0151	0.0880	<0.00010
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	0.011	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0000051	<0.0000050	0.0000125	<0.0000050	<0.0000050
	Calcium (Ca)-Total (mg/L)	11.9	6.75	8.66	60.6	<0.050
	Cesium (Cs)-Total (mg/L)	0.000012	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium (Cr)-Total (mg/L)	0.00027	0.00011	<0.00010	0.00015	0.00012
	Cobalt (Co)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	0.00065	<0.00050	0.00119	<0.00050	<0.00050
	Iron (Fe)-Total (mg/L)	0.251	0.132	0.062	<0.010	<0.010
	Lead (Pb)-Total (mg/L)	0.000147	<0.000050	<0.000050	<0.000050	<0.000050

* 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		L2249762-1 Water 26-MAR-19 10:00 CUTTHROAT CREEK	L2249762-2 Water 26-MAR-19 11:10 MCBRIDE CREEK	L2249762-3 Water 26-MAR-19 13:22 MORICE RIVER	L2249762-4 Water 26-MAR-19 10:45 NANIKA RIVER	L2249762-5 Water 26-MAR-19 11:45 CRYSTAL CREEK
Grouping	Analyte					
WATER						
Total Metals	Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Magnesium (Mg)-Total (mg/L)	0.767	1.07	0.557	0.818	1.06
	Manganese (Mn)-Total (mg/L)	0.0915	0.00546	0.00089	0.00410	0.00268
	Molybdenum (Mo)-Total (mg/L)	0.000116	0.000074	0.000390	0.000571	0.00146
	Nickel (Ni)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	0.189	0.309	0.260	0.175	0.245
	Rubidium (Rb)-Total (mg/L)	0.00033	0.00038	0.00033	<0.00020	0.00030
	Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	0.000056	<0.000050	0.000077
	Silicon (Si)-Total (mg/L)	3.31	3.18	1.56	1.90	3.63
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	1.47	2.15	0.729	0.930	2.11
	Strontium (Sr)-Total (mg/L)	0.0358	0.0430	0.0287	0.0402	0.0361
	Sulfur (S)-Total (mg/L)	1.63	<0.50	1.06	2.64	1.82
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.00121	0.00076	<0.00030	0.00062	0.00229
	Tungsten (W)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium (U)-Total (mg/L)	<0.000010	0.000017	0.000027	0.000030	0.000064
	Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	0.00053
	Zinc (Zn)-Total (mg/L)	0.0054	<0.0030	<0.0030	<0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	0.000088	0.000255	<0.000060	<0.000060	0.000076
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0842	0.102	0.0099	0.0129	0.0176
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00029	0.00029	<0.00010	0.00012	0.00022
	Barium (Ba)-Dissolved (mg/L)	0.0155	0.0139	0.0152	0.0157	0.00442
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0000076	<0.0000050	<0.0000050	0.0000140	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	9.53	5.88	7.55	9.26	13.7
	Cesium (Cs)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium (Cr)-Dissolved (mg/L)	0.00011	0.00022	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00016	<0.00010	<0.00010	<0.00010	<0.00010

* 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	L2249762-6 Water 26-MAR-19 12:13 GOSNELL CREEK	L2249762-7 Water 26-MAR-19 12:34 SHEA CREEK	L2249762-8 Water 26-MAR-19 10:45 NANIKA RIVER DUPLICATE	L2249762-9 Water 26-MAR-19 12:13 FIELD BLANK	L2249762-10 Water 26-MAR-19 TRAVEL BLANK
Grouping	Analyte						
WATER							
Total Metals	Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	<0.0010	0.0042	<0.0010	
	Magnesium (Mg)-Total (mg/L)	1.45	1.00	0.831	18.5	<0.0050	
	Manganese (Mn)-Total (mg/L)	0.0143	0.00674	0.00394	<0.00010	<0.00010	
	Molybdenum (Mo)-Total (mg/L)	0.000218	<0.000050	0.000622	0.000876	<0.000050	
	Nickel (Ni)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050	
	Potassium (K)-Total (mg/L)	0.174	0.125	0.176	1.02	<0.050	
	Rubidium (Rb)-Total (mg/L)	0.00023	<0.00020	0.00024	0.00034	<0.00020	
	Selenium (Se)-Total (mg/L)	0.000060	<0.000050	<0.000050	0.000648	<0.000050	
	Silicon (Si)-Total (mg/L)	3.97	3.17	1.99	2.42	<0.10	
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Total (mg/L)	1.77	1.39	0.933	9.93	<0.050	
	Strontium (Sr)-Total (mg/L)	0.0404	0.0273	0.0406	0.277	<0.00020	
	Sulfur (S)-Total (mg/L)	1.10	<0.50	2.59	17.6	<0.50	
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010 ^{DLM}	<0.00010	<0.00010	
	Titanium (Ti)-Total (mg/L)	0.00446	0.00083	<0.00090	<0.00030	<0.00030	
	Tungsten (W)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
	Uranium (U)-Total (mg/L)	0.000011	<0.000010	0.000029	0.000627	<0.000010	
	Vanadium (V)-Total (mg/L)	0.00060	<0.00050	<0.00050	<0.00050	<0.00050	
	Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
	Zirconium (Zr)-Total (mg/L)	0.000078	0.000060	<0.000060	<0.000060	<0.000060	
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	LAB		
	Aluminum (Al)-Dissolved (mg/L)	0.0142	0.0203	0.0126	<0.0010		
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		
	Arsenic (As)-Dissolved (mg/L)	0.00012	0.00012	0.00011	<0.00010		
	Barium (Ba)-Dissolved (mg/L)	0.0152	0.0198	0.0143	0.0894		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050		
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.012		
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	0.0000111	<0.0000050		
	Calcium (Ca)-Dissolved (mg/L)	11.7	6.70	8.65	58.1		
	Cesium (Cs)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	0.00014		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		

* 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		L2249762-1 Water 26-MAR-19 10:00 CUTTHROAT CREEK	L2249762-2 Water 26-MAR-19 11:10 MCBRIDE CREEK	L2249762-3 Water 26-MAR-19 13:22 MORICE RIVER	L2249762-4 Water 26-MAR-19 10:45 NANIKA RIVER	L2249762-5 Water 26-MAR-19 11:45 CRYSTAL CREEK
Grouping	Analyte					
WATER						
Dissolved Metals	Copper (Cu)-Dissolved (mg/L)	0.00045	0.00073	0.00061	0.00114	0.00078
	Iron (Fe)-Dissolved (mg/L)	0.597	0.164	<0.010	0.042	0.018
	Lead (Pb)-Dissolved (mg/L)	0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Magnesium (Mg)-Dissolved (mg/L)	0.731	1.04	0.529	0.790	1.06
	Manganese (Mn)-Dissolved (mg/L)	0.0896	0.00477	0.00056	0.00249	0.00137
	Molybdenum (Mo)-Dissolved (mg/L)	0.000111	0.000074	0.000385	0.000572	0.00137
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	0.187	0.332	0.273	0.177	0.250
	Rubidium (Rb)-Dissolved (mg/L)	0.00030	0.00037	0.00037	0.00021	0.00026
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	0.000068
	Silicon (Si)-Dissolved (mg/L)	3.10	3.21	1.52	1.87	3.54
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	1.34	2.05	0.725	0.920	2.20
	Strontium (Sr)-Dissolved (mg/L)	0.0347	0.0430	0.0277	0.0372	0.0341
	Sulfur (S)-Dissolved (mg/L)	1.36	<0.50	1.07	2.76	2.08
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00069	0.00066	<0.00030	<0.00030	0.00031
	Tungsten (W)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.000019	0.000029	0.000030	0.000061
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0023	<0.0010	<0.0010	<0.0010	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	0.000113	0.000296	<0.000060	<0.000060	0.000065

* 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		L2249762-6 Water 26-MAR-19 12:13 GOSNELL CREEK	L2249762-7 Water 26-MAR-19 12:34 SHEA CREEK	L2249762-8 Water 26-MAR-19 10:45 NANIKA RIVER DUPLICATE	L2249762-9 Water 26-MAR-19 12:13 FIELD BLANK	L2249762-10 Water 26-MAR-19 TRAVEL BLANK
Grouping	Analyte					
WATER						
Dissolved Metals	Copper (Cu)-Dissolved (mg/L)	0.00044	0.00059	0.00103	<0.00020	
	Iron (Fe)-Dissolved (mg/L)	0.109	0.086	0.035	<0.010	
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	0.0042	
	Magnesium (Mg)-Dissolved (mg/L)	1.37	0.955	0.800	17.1	
	Manganese (Mn)-Dissolved (mg/L)	0.00953	0.00479	0.00242	<0.00010	
	Molybdenum (Mo)-Dissolved (mg/L)	0.000207	0.000068	0.000589	0.000792	
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	
	Potassium (K)-Dissolved (mg/L)	0.154	0.119	0.168	1.02	
	Rubidium (Rb)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	0.00036	
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.000738	
	Silicon (Si)-Dissolved (mg/L)	3.71	3.05	1.86	2.11	
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Dissolved (mg/L)	1.74	1.39	0.942	8.88	
	Strontium (Sr)-Dissolved (mg/L)	0.0382	0.0264	0.0389	0.246	
	Sulfur (S)-Dissolved (mg/L)	1.21	<0.50	2.63	16.3	
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
	Titanium (Ti)-Dissolved (mg/L)	0.00036	<0.00030	<0.00030	<0.00030	
	Tungsten (W)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
	Uranium (U)-Dissolved (mg/L)	<0.000010	<0.000010	0.000025	0.000667	
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.0010	0.0012	<0.0010	
	Zirconium (Zr)-Dissolved (mg/L)	<0.000060	0.000063	<0.000060	<0.000060	

* 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)
Matrix Spike	Dissolved Organic Carbon	MS-B	L2249762-1, -2, -3, -4, -5, -6
Matrix Spike	Dissolved Organic Carbon	MS-B	L2249762-1, -2, -3, -4, -5, -6
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2249762-9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2249762-1, -2, -3, -4
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2249762-5, -6, -7, -8
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2249762-9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2249762-1, -2, -3, -4
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2249762-5, -6, -7, -8
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2249762-1, -2, -3, -4
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2249762-1, -2, -3, -4
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2249762-5, -6, -7, -8
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2249762-1, -2, -3, -4
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2249762-5, -6, -7, -8
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2249762-9
Matrix Spike	Calcium (Ca)-Total	MS-B	L2249762-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2249762-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Total	MS-B	L2249762-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Total	MS-B	L2249762-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Nitrogen	MS-B	L2249762-1, -10, -2, -3, -5, -6, -7

Qualifiers for Individual Parameters Listed:

Qualifier	Description
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).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat 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.			
ANIONS-N+N-CALC-VA	Water	Nitrite & Nitrate in Water (Calculation)	EPA 300.0
Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).			
CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310B
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.			
EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.			
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 CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 µm), 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-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.			
N-T-COL-VA	Water	Total Nitrogen in water by Colour	APHA4500-P(J)/NEMI9171/USGS03-4174

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-P (J) "Persulphate Method for Simultaneous Determination of Total Nitrogen and Total Phosphorus" and National Environmental Methods Index - Nemi method 5735.

N-TD-COL-VA Water Total Dissolved Nitrogen by Colour APHA4500-P(J)/NEMI9171/USGS03-4174

Following filtration through a 0.45 micron filter, the sample is analysed using procedures adapted from APHA Method 4500-P (J) "Persulphate Method for Simultaneous Determination of Total Nitrogen and Total Phosphorus" and National Environmental Methods Index - Nemi method 5735.

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.

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.

ORP-VA Water Oxidation reduction potential by Elect. ASTM D1498-14

This analysis is carried out in accordance with the procedure described in the "ASTM" method D1498-14 "Oxidation-Reduction Potential of Water" published by the American Society for Testing and Materials (ASTM), 2014. Results are reported as observed oxidation-reduction potential of the platinum metal-reference electrode employed, in mV.

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

P-T-PRES-COL-VA Water Total P in Water by Colour APHA 4500-P Phosphorus

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

Samples with very high dissolved solids (i.e. seawaters, brackish waters) may produce a negative bias by this method. Alternate methods are available for these types of samples.

Arsenic (5+), at elevated levels, is a positive interference on colourimetric phosphate analysis.

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TKN-CALC-VA Water TKN in Water (Calculation) BC MOE LABORATORY MANUAL (2005)

Total Kjeldahl Nitrogen is a calculated parameter. Total Kjeldahl Nitrogen (calc) = Total Nitrogen - [Nitrite (as N) + Nitrate (as N)].

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

** 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:

17-827276

Reference Information

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 ww - 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.



L2249762-COFC

COC Number: 17 - 827276

Page 1 of 1

Report To Contact and company name below will appear on the final report Company: <u>Northwest Research + Monitoring</u> Contact: <u>Laura Guillon</u> Phone: <u>250 877 7858</u> Company address below will appear on the final report Street: <u>PO Box 4357</u> City/Province: <u>Smithers / BC</u> Postal Code: <u>V0T 2L00</u>			Report Format / Distribution Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <u>laura@nwrm.ca</u> Email 2: <u>info@nwrm.ca</u> Email 3:			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply) Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply 4 day [P4-20%] <input type="checkbox"/> 1 Business day [E - 100%] 3 day [P3-25%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2 -200%] 2 day [P2-50%] <input type="checkbox"/> (Laboratory opening fees may apply) Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																																																																																																																																																																																			
Invoice To Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: Contact:			Invoice Distribution Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Email 2:			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2">NUMBER OF CONTAINERS</th> <th colspan="2">P</th> <th colspan="2">F</th> <th colspan="2">F/P</th> <th colspan="2">P</th> <th colspan="2">F</th> <th colspan="2">F/P</th> <th rowspan="2">Total Metals</th> <th rowspan="2">Dissolved Metals</th> <th rowspan="2">TN, TKD</th> <th rowspan="2">TDP, PO₄ + NO₃, NH₃</th> <th rowspan="2">DOC</th> <th rowspan="2">TP</th> <th rowspan="2">Dissolved ORP</th> <th rowspan="2">TSS</th> <th rowspan="2">Turbidity</th> <th rowspan="2">TDS</th> <th rowspan="2">Alkalinity</th> <th rowspan="2">Hardness</th> <th rowspan="2">SAMPLES ON HOLD</th> <th rowspan="2">SUSPECTED HAZARD (see Special Instructions)</th> </tr> <tr> <th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>3</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> <tr> <td>4</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td> </tr> </table>			NUMBER OF CONTAINERS	P		F		F/P		P		F		F/P		Total Metals	Dissolved Metals	TN, TKD	TDP, PO ₄ + NO ₃ , NH ₃	DOC	TP	Dissolved ORP	TSS	Turbidity	TDS	Alkalinity	Hardness	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)													3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
NUMBER OF CONTAINERS	P		F		F/P		P			F		F/P		Total Metals	Dissolved Metals	TN, TKD	TDP, PO ₄ + NO ₃ , NH ₃	DOC	TP	Dissolved ORP	TSS															Turbidity	TDS	Alkalinity	Hardness	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)																																																																																																																																																																																																																																																
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																																																																																		
Project Information ALS Account # / Quote #: <u>Q72918</u> Job #: <u>HWMT Sin 30</u> PO / AFE: LSD:			Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:			ALS Lab Work Order # (lab use only): ALS Contact: <u>Edward Ngai</u> Sampler:																																																																																																																																																																																																																																																																																			
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																																																																																																																																																																																																																																																																																					
	<u>Cutthroat Creek</u>	<u>26-Mar-19</u>	<u>10:00</u>	<u>water</u>																																																																																																																																																																																																																																																																																					
	<u>McBride Creek</u>	<u>26-Mar-19</u>	<u>11:10</u>																																																																																																																																																																																																																																																																																						
	<u>Morice River</u>	<u>26-Mar-19</u>	<u>13:22</u>																																																																																																																																																																																																																																																																																						
	<u>Nanika River</u>	<u>26-Mar-19</u>	<u>10:45</u>																																																																																																																																																																																																																																																																																						
	<u>Crystal Creek</u>	<u>26-Mar-19</u>	<u>11:45</u>																																																																																																																																																																																																																																																																																						
	<u>Gosnell Creek</u>	<u>26-Mar-19</u>	<u>12:13</u>																																																																																																																																																																																																																																																																																						
	<u>Shea Creek</u>	<u>26-Mar-19</u>	<u>12:34</u>																																																																																																																																																																																																																																																																																						
	<u>Nanika River Duplicate</u>	<u>26-Mar-19</u>	<u>10:45</u>																																																																																																																																																																																																																																																																																						
	<u>Field Blank</u>	<u>26-Mar-19</u>	<u>12:13</u>																																																																																																																																																																																																																																																																																						
	<u>Travel Blank</u>	<u>26-Mar-19</u>																																																																																																																																																																																																																																																																																							
Drinking Water (DW) Samples* (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) <u>Please add field data to COA</u> <u>- sheets attached</u>					SAMPLE CONDITION AS RECEIVED (lab use only) Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/> INITIAL COOLER TEMPERATURES °C: <u>5</u> FINAL COOLER TEMPERATURES °C: <u>6</u>																																																																																																																																																																																																																																																																															
SHIPMENT RELEASE (client use) Released by: <u>Laura Guillon</u> Date: <u>Mar 26 2019</u> Time: <u>5pm</u>					INITIAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time:					FINAL SHIPMENT RECEPTION (lab use only) Received by: <u>Sc</u> Date: <u>MAR 27 2019</u> Time: <u>10:40AM</u>																																																																																																																																																																																																																																																																															

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2019 PRINT



L2249762-COFC



Field Crew:

Gary Mitchell

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019 03 26		Water Stage	Water Color	EMS #
Site	Crystal		L / M / H	C / clear	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	85.5	DO (ppm)	13.72	Regular Suite <input checked="" type="checkbox"/> Y/N	Duplicate (Y/ <input checked="" type="checkbox"/> N)
Cond (µS/cm ^h)	44.8	pH	7.62	Hydrocarbons Y/ <input checked="" type="checkbox"/> N	Field Blank (Y/ <input checked="" type="checkbox"/> N)
DO (%)	93.8	Water Temp (°C)	0.0	Ice Cover (cm)	# Sample Bottles: 5

Notes (weather, unusual conditions, reason no sample was collected)

Sunny & overcast

91.24 kPa

-51.7 °F RH

Time of sample:

11:45

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019 03 - 26		Water Stage	Water Color	EMS #
Site	Gasnell		L / M / H	C / clear	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	76.6	DO (ppm)	12.62	Regular Suite <input checked="" type="checkbox"/> Y/N	Duplicate (Y/ <input checked="" type="checkbox"/> N)
Cond (µS/cm ^h)	40.1	pH	7.16	Hydrocarbons Y/ <input checked="" type="checkbox"/> N	Field Blank (Y/ <input checked="" type="checkbox"/> N)
DO (%)	86.5	Water Temp (°C)	0.0	Ice Cover (cm)	# Sample Bottles: 10

Notes (weather, unusual conditions, reason no sample was collected)

clouds & sunny

92.59 kPa

-26.8 °F RH

Time of sample:

12:13

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019-26-02		Water Stage	Water Color	EMS #
Site	Jheea		L / M / H	clear	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	45.9	DO (ppm)	13.49	Regular Suite <input checked="" type="checkbox"/> Y/N	Duplicate (Y/ <input checked="" type="checkbox"/> N)
Cond (µS/cm ^h)	24.0	pH	7.45	Hydrocarbons Y/ <input checked="" type="checkbox"/> N	Field Blank (Y/ <input checked="" type="checkbox"/> N)
DO (%)	92.3	Water Temp (°C)	0.1	Ice Cover (cm)	# Sample Bottles: 5

Notes (weather, unusual conditions, reason no sample was collected)

High clouds sunny

91.94 kPa

-42.6 °F RH

Time of sample:

12:34

Project: Morice



L2249762-COFC



Field Crew:

Gary Michell

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019-03-26		Water Stage	Water Color	EMS #
Site	Cutthroat		L / M / H	Lite tan	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	56.0	DO (ppm)	10.53	Regular Suite Y/N	Duplicate (Y/N)
Cond (µS/cm ²)	29.3	pH	7.88	Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)	72.5	Water Temp (°C)	0.0	Ice Cover (cm)	# Sample Bottles: 5

Notes (weather, unusual conditions, reason no sample was collected)

overcast sunny

91.14 kPa

-58.4 °F PH MV

Time of sample: 10:00

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019-03-26		Water Stage	Water Color	EMS #
Site	Nanika		L / M / H	clear	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	55.2	DO (ppm)	13.64	Regular Suite Y/N	Duplicate (Y/N)
Cond (µS/cm ²)	29.7	pH	7.53	Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)	94.6	Water Temp (°C)	0.5	Ice Cover (cm)	# Sample Bottles: 10

Notes (weather, unusual conditions, reason no sample was collected)

overcast sunny

91.67 kPa

-46.0 °F PH MV

Time of sample: 1045

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2019-03-26		Water Stage	Water Color	EMS #
Site	McBride		L / M / H	lite tan	
Field Parameters			Parameters	QA / QC	
Sp. Cond. (µS/cm)	40.7	DO (ppm)	11.02	Regular Suite Y/N	Duplicate (Y/N)
Cond (µS/cm ²)	21.7	pH	6.96	Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)	76.9	Water Temp (°C)	0.6	Ice Cover (cm)	# Sample Bottles: 5

Notes (weather, unusual conditions, reason no sample was collected)

overcast sunny

92.14 kPa

-14.2 °F PH MV

Time of sample: 11:10

Project: Morice



L2249762-COFC



Field Crew:

Garry Michell

Water Quality Sampling Field Card					
Date yyyy-mm-dd	2029-03-26		Water Stage	Water Color	EMS #
Site	Morice 1		L / M / H		
Field Parameters			Parameters	QA / QC	
Sp. Cond. ($\mu\text{S}/\text{cm}$)	42.0	DO (ppm)	12.84	Regular Suite Y/N	Duplicate (Y/N)
Cond ($\mu\text{S}/\text{cm}^A$)	23.8	pH	7.65	Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)	93.6	Water Temp ($^{\circ}\text{C}$)	2.2	Ice Cover (cm)	# Sample Bottles: 5

Notes (weather, unusual conditions, reason no sample was collected)

clouds & sun

92.59 TPA
- 53.5

Time of sample:

1322

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd			Water Stage	Water Color	EMS #
Site			L / M / H		
Field Parameters			Parameters	QA / QC	
Sp. Cond. ($\mu\text{S}/\text{cm}$)		DO (ppm)		Regular Suite Y/N	Duplicate (Y/N)
Cond ($\mu\text{S}/\text{cm}^A$)		pH		Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)		Water Temp ($^{\circ}\text{C}$)		Ice Cover (cm)	# Sample Bottles:

Notes (weather, unusual conditions, reason no sample was collected)

Time of sample:

Project: Morice

Water Quality Sampling Field Card					
Date yyyy-mm-dd			Water Stage	Water Color	EMS #
Site			L / M / H		
Field Parameters			Parameters	QA / QC	
Sp. Cond. ($\mu\text{S}/\text{cm}$)		DO (ppm)		Regular Suite Y/N	Duplicate (Y/N)
Cond ($\mu\text{S}/\text{cm}^A$)		pH		Hydrocarbons Y/N	Field Blank (Y/N)
DO (%)		Water Temp ($^{\circ}\text{C}$)		Ice Cover (cm)	# Sample Bottles:

Notes (weather, unusual conditions, reason no sample was collected)

Time of sample:

Project: Morice