

January 9, 2014

EDI Job Number: 13-Y-0452

Assessment and Abandoned Mines
Yukon Government
Box 2703
Whitehorse, YT

Attention: Adrienne Turcotte, Project Officer

Re: Faro Rose Creek Surface and Groundwater Sampling Field Program – Trip 5

In response to an urgent request by Assessment and Abandoned Mines (AAM), EDI Environmental Dynamics Inc. (EDI) has been conducting on-going water quality sampling and fish telemetry surveys at the Faro Mine Site since November 2013. Table 1, attached, summarizes the field trips completed. The intent of this memo is to summarize field data obtained during the December 27 field program, referred to as Trip 5.

The objective of Trip 5 was to complete the following task:

- Surface water sampling in Rose Creek at 11 sites, including QA/QC samples.

The field program conducted December 27, 2013 experienced extreme cold weather conditions (i.e., air temperatures below -30°C) that limited the field crew and the equipment abilities. The equipment used to measure in-situ water quality parameters cannot withstand extreme cold temperatures; therefore, in-situ parameters were not measured at all sampling sites. The cold temperatures were not conducive for water filtration and resulted in samples being collected and processed (i.e., filtering and addition of acids to vials) within the cab of the truck. Overflow conditions on NF1 Pond prevented the collection of water samples from the NF1 site.

Field data that was collected at each surface water sampling site is summarized in Table 2, attached. Figure 1 provides the locations of all water quality sampling. Representative photos of each site and the ALS laboratory analytical reports for all water chemistry samples submitted during this field trip are also attached.



If you have any questions or concerns, please do not hesitate to contact Pat Tobler or myself at (867) 393-4882 or through email at mkearns@edynamics.com.

Yours truly,

EDI Environmental Dynamics Inc.

Submitted via email

Meighan Kearns, B.Sc., R.P.Bio.
Aquatic Biologist

Attachments:

- Table 1. Summary of Trips 1 to 5, Faro Mine Site.
- Table 2. Surface water sampling field data, Trip 5, December 27, 2013.
- Figure 1. Location of surface water sampling, Faro Mine Site, December 27, 2013
- Photos 1 – 10. Representative site photos.
- ALS Laboratory Analytical Reports



Table 1. Summary of Trips 1 to 5, Faro Mine Site.

Trip No.	Dates	General Tasks
1	Nov 12 – 14, 2013	<ul style="list-style-type: none">• Fish telemetry• Piezometer water depth measurements• Ground water sampling• Surface water sampling
2	Nov 27 – 30, 2013	<ul style="list-style-type: none">• Fish telemetry• Surface water sampling
3	Dec 10, 2013	<ul style="list-style-type: none">• Fish telemetry
4	Dec 19 – 20, 2013	<ul style="list-style-type: none">• Surface water sampling
5	Dec 27, 2013	<ul style="list-style-type: none">• Surface water sampling



Table 2. Surface water sampling field data, Trip 5, December 27, 2013.

Site Name	UTM Location (NAD83/ Zone 8)		Sample		QA/ QC Rep. ID	In-situ Parameters			
	Easting	Northing	Date	Time		Temp (°C)	SPC (µS/cm)	pH	Turbidity (NTU)
X14	579342	6915082	27-Dec-13	9:23	-	-	-	-	2.62
X10	579444	6914885	27-Dec-13	10:17	-	-	-	-	2.11
X3A	583153	6912537	27-Dec-13	11:00	X3A-r	-	-	-	1.39
X2	584078	6912794	27-Dec-13	12:10	-	-	-	-	1.33
NF2	584687	6910311	27-Dec-13	13:00	-	-	-	-	1.17
NF2-A	584708	6913034	27-Dec-13	13:11	-	-	-	-	1.71
NF2-B	584724	6913023	27-Dec-13	13:15	-	-	-	-	1.24
R10	588105	6913482	27-Dec-13	15:02	-	-	-	-	1.2
R9	585231	6913660	27-Dec-13	15:13	-	-	-	-	1.33
R8	586299	6914397	27-Dec-13	15:25	-	-	-	-	2.18

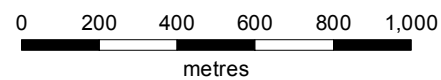
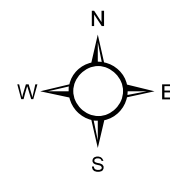
Where, UTM = Universal Transverse Mercator;
 QA/QC Rep = Quality Assurance/ Quality Control Replicate;
 Temp = water temperature;
 SPC = specific conductance; and,
 - = data not collected due to extreme cold temperature (below -30°C).



Location of surface water sampling, Faro Mine Site, December 27, 2013

Legend

- Surface Water Sampling Site
- Road (Mine Access/Haul)
- Topographic Contour (30 m Interval)



Map Scale = 1:20,000 (printed on 11 x 17)
 Map Projection: North American Datum 1983 UTM Zone 8N

Data sources

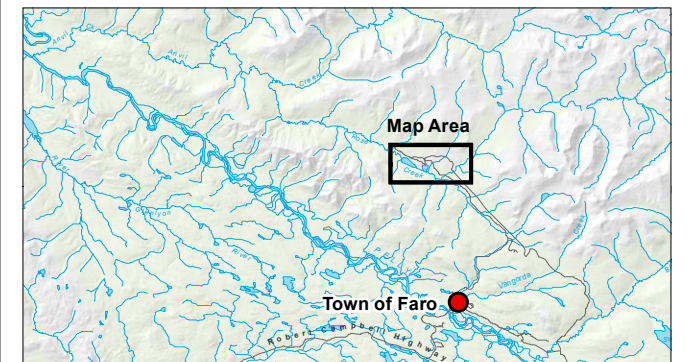
1:50,000 topographic spatial data provided by Geomatics - Yukon Government via online source (Corporate Spatial Warehouse) www.geomaticsyukon.ca.

National Road Network courtesy of Her Majesty the Queen in Right of Canada, Department of Natural Resources. All Rights Reserved.

Detailed topographic features of the Faro, Grum and Vangorda mine sites were provided by Yukon Government - Energy, Mines and Resources - Assessment and Abandoned Mines Branch (March 2012).

Project data displayed is site specific. Data collected by EDI Environmental Dynamics Inc. was obtained using Garmin GPS technology.

This document is not an official land survey and the spatial data presented is subject to change.



Map Prepared by
 EDI Environmental Dynamics Inc.

Drawn: LG	Checked: MK	FIGURE 1	Date: 09/01/2014
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Site Photos



Photo 1. Upstream view at surface water sampling site X14, December 27, 2013.



Photo 2. Downstream view of surface water sampling site at X10, December 27, 2013.



Photo 3. Upstream view of surface water sampling site at X3A, December 27, 2013.



Photo 4. Downstream view of surface water sampling site at X2, December 27, 2013.



Photo 5. Downstream view of surface water sampling site NF2-A, December 27, 2013.



Photo 6. Upstream view of surface water sampling site NF2-B, December 27, 2013.



Photo 7. Upstream view of surface water sampling site NF2, December 27, 2013.



Photo 8. Upstream view of surface water sampling site R10, December 27, 2013.



Photo 9. Upstream view of surface water sampling site R9, December 27, 2013.



Photo 10. Downstream view of surface water sampling site R8, December 27, 2013.



ENVIRONMENTAL DYNAMICS INC.
ATTN: Meighan Kearns
2195 - 2nd Avenue
Whitehorse YT Y1A 3T8

Date Received: 30-DEC-13
Report Date: 06-JAN-14 09:59 (MT)
Version: FINAL

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1407318
Project P.O. #: NOT SUBMITTED
Job Reference: 13-Y-0452
C of C Numbers: 1, 2
Legal Site Desc:

Can Dang
Senior 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 A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1407318-1 SURFACE WATE 27-DEC-13 09:43 X14	L1407318-2 SURFACE WATE 27-DEC-13 10:17 X10	L1407318-3 SURFACE WATE 27-DEC-13 11:00 X3A	L1407318-4 SURFACE WATE 27-DEC-13 12:10 X2	L1407318-5 SURFACE WATE 27-DEC-13 13:00 NF2
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	578	301	291	287	288
	Hardness (as CaCO3) (mg/L)	279	146	139	138	138
	pH (pH)	8.05	8.01	8.00	7.94	7.93
	Total Suspended Solids (mg/L)	2.8	1.2	1.2	1.2	1.4
	Total Dissolved Solids (mg/L)	361	168	161	160	161
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	155	129	125	122	123
	Ammonia, Total (as N) (mg/L)	0.0670	0.0127	0.0157	0.0088	0.0073
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.142	0.151	0.147	0.159	0.162
	Nitrate (as N) (mg/L)	0.196	0.214	0.215	0.234	0.241
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	0.0012	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)	<0.0020	0.0030	0.0037	0.0046	0.0049
	Sulfate (SO4) (mg/L)	155	31.3	29.7	30.2	31.2
	Anion Sum (meq/L)	6.35	3.25	3.13	3.10	3.13
	Cation Sum (meq/L)	5.97	3.08	2.94	2.94	2.94
	Cation - Anion Balance (%)	-3.0	-2.8	-3.1	-2.6	-3.2
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.52	1.56	1.57 ^{SFP}	1.45	1.52
	Total Organic Carbon (mg/L)	1.45	1.56	1.56	1.47	1.43
Total Metals	Aluminum (Al)-Total (mg/L)	0.0341	0.0093	0.0104	0.0207	0.0245
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00041	0.00031	0.00041	0.00051	0.00058
	Barium (Ba)-Total (mg/L)	0.0651	0.0678	0.0658	0.0674	0.0681
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000183	0.000155	0.000219	0.000342	0.000577
	Calcium (Ca)-Total (mg/L)	83.4	42.5	40.4	39.3	39.1
	Chromium (Cr)-Total (mg/L)	0.00018	0.00012	0.00013	0.00017	0.00017
	Cobalt (Co)-Total (mg/L)	0.00241	0.00084	0.00126	0.00219	0.00368
	Copper (Cu)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	0.00058
	Iron (Fe)-Total (mg/L)	0.694	0.328	0.258	0.250	0.242
	Lead (Pb)-Total (mg/L)	0.000297	0.000154	0.000210	0.000414	0.000385
	Lithium (Li)-Total (mg/L)	0.00668	0.00538	0.00557	0.00691	0.00653
	Magnesium (Mg)-Total (mg/L)	18.6	10.3	9.07	9.73	10.1
	Manganese (Mn)-Total (mg/L)	2.71	0.100	0.125	0.152	0.189
	Molybdenum (Mo)-Total (mg/L)	0.000672	0.000668	0.000649	0.000769	0.000801

* 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	L1407318-6 SURFACE WATE 27-DEC-13 13:11 NF2A	L1407318-7 SURFACE WATE 27-DEC-13 13:15 NF2B	L1407318-8 SURFACE WATE 27-DEC-13 15:02 R10	L1407318-9 SURFACE WATE 27-DEC-13 15:13 R09	L1407318-10 SURFACE WATE 27-DEC-13 15:25 R08
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	337	264	260	258	231
	Hardness (as CaCO3) (mg/L)	167	135	132	134	110
	pH (pH)	7.87	8.00	8.04	8.16	8.12
	Total Suspended Solids (mg/L)	1.9	<1.0	<1.0	<1.0	<1.0
	Total Dissolved Solids (mg/L)	200	150	145	146	125
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	123	125	120	120	117
	Ammonia, Total (as N) (mg/L)	0.0177	0.0089	0.0082	0.0117	0.0153
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.210	0.142	0.143	0.146	0.146
	Nitrate (as N) (mg/L)	0.253	0.236	0.226	0.230	0.139
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)	<0.0020	0.0053	0.0058	0.0056	0.0059
	Sulfate (SO4) (mg/L)	57.0	19.8	19.3	19.0	9.28
	Anion Sum (meq/L)	3.68	2.93	2.82	2.82	2.54
	Cation Sum (meq/L)	3.66	2.86	2.80	2.84	2.33
	Cation - Anion Balance (%)	-0.4	-1.2	-0.5	0.2	-4.5
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.51	1.45	1.46	1.48	1.47
	Total Organic Carbon (mg/L)	1.46	1.40	1.33	1.43	1.41
Total Metals	Aluminum (Al)-Total (mg/L)	0.0433	0.0224	0.0144	0.0224	0.0105
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00049	0.00060	0.00063	0.00058	0.00058
	Barium (Ba)-Total (mg/L)	0.0682	0.0682	0.0693	0.0654	0.0582
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.00210	0.000019	0.000015	<0.000010	<0.000010
	Calcium (Ca)-Total (mg/L)	41.0	39.9	40.1	40.0	32.8
	Chromium (Cr)-Total (mg/L)	0.00016	0.00020	0.00015	0.00018	0.00015
	Cobalt (Co)-Total (mg/L)	0.0134	<0.00010	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Iron (Fe)-Total (mg/L)	0.458	0.145	0.145	0.154	0.146
	Lead (Pb)-Total (mg/L)	0.000712	0.000473	0.000079	0.000065	<0.000050
	Lithium (Li)-Total (mg/L)	0.00752	0.00618	0.00638	0.00617	0.00543
	Magnesium (Mg)-Total (mg/L)	15.0	8.47	8.69	8.18	6.16
	Manganese (Mn)-Total (mg/L)	0.595	0.0225	0.0302	0.0251	0.0228
	Molybdenum (Mo)-Total (mg/L)	0.000808	0.000810	0.000794	0.000817	0.000726

* 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	L1407318-11 SURFACE WATE 27-DEC-13 11:20 X3A-R	L1407318-12 SURFACE WATE 27-DEC-13 FARO 27-DEC13-F (FIELD BLANK)	L1407318-13 SURFACE WATE 27-DEC-13 TRAVEL BLANK	
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	293	<2.0	<2.0	
	Hardness (as CaCO3) (mg/L)	136	<0.50	<0.50	
	pH (pH)	8.04	5.99	5.72	
	Total Suspended Solids (mg/L)	<1.0	<1.0	<1.0	
	Total Dissolved Solids (mg/L)	160	<1.0	<1.0	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	125	<2.0	<2.0	
	Ammonia, Total (as N) (mg/L)	0.0166	<0.0050	0.0081 ^{RRV}	
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	
	Fluoride (F) (mg/L)	0.158	<0.020	<0.020	
	Nitrate (as N) (mg/L)	0.222	<0.0050	<0.0050	
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	
	Phosphorus (P)-Total (mg/L)	0.0042	<0.0020	<0.0020	
	Sulfate (SO4) (mg/L)	29.9	<0.50	<0.50	
	Anion Sum (meq/L)	3.14	<0.10	<0.10	
	Cation Sum (meq/L)	2.88	<0.10	<0.10	
	Cation - Anion Balance (%)	-4.3	0.0	0.0	
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.47	<0.50		
	Total Organic Carbon (mg/L)	1.51	<0.50	<0.50	
Total Metals	Aluminum (Al)-Total (mg/L)	0.0124	<0.0030	<0.0030	
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	
	Arsenic (As)-Total (mg/L)	0.00038	<0.00010	<0.00010	
	Barium (Ba)-Total (mg/L)	0.0591	<0.000050	<0.000050	
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	
	Cadmium (Cd)-Total (mg/L)	0.000188	<0.000010	<0.000010	
	Calcium (Ca)-Total (mg/L)	39.7	<0.020	<0.020	
	Chromium (Cr)-Total (mg/L)	0.00013	<0.00010	<0.00010	
	Cobalt (Co)-Total (mg/L)	0.00113	<0.00010	<0.00010	
	Copper (Cu)-Total (mg/L)	<0.00050	<0.00050	<0.00050	
	Iron (Fe)-Total (mg/L)	0.234	<0.010	<0.010	
	Lead (Pb)-Total (mg/L)	0.000202	<0.000050	<0.000050	
	Lithium (Li)-Total (mg/L)	0.00517	<0.00050	<0.00050	
	Magnesium (Mg)-Total (mg/L)	9.04	<0.0050	<0.0050	
	Manganese (Mn)-Total (mg/L)	0.111	<0.000050	<0.000050	
	Molybdenum (Mo)-Total (mg/L)	0.000561	<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		L1407318-1 SURFACE WATE 27-DEC-13 09:43 X14	L1407318-2 SURFACE WATE 27-DEC-13 10:17 X10	L1407318-3 SURFACE WATE 27-DEC-13 11:00 X3A	L1407318-4 SURFACE WATE 27-DEC-13 12:10 X2	L1407318-5 SURFACE WATE 27-DEC-13 13:00 NF2
Grouping	Analyte					
WATER						
Total Metals	Nickel (Ni)-Total (mg/L)	0.00571	0.00246	0.00253	0.00364	0.00564
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	1.52	1.02	1.01	0.927	0.936
	Selenium (Se)-Total (mg/L)	0.00037	0.00038	0.00035	0.00040	0.00042
	Silicon (Si)-Total (mg/L)	5.79	5.42	5.42	5.74	5.93
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	5.26	2.72	2.73	2.88	2.92
	Strontium (Sr)-Total (mg/L)	0.294	0.196	0.193	0.181	0.174
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00284	0.00238	0.00229	0.00217	0.00216
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	0.256	0.299	0.333	0.486	0.813
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0010	0.0011	0.0027	0.0040	0.0056
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00020	0.00015	0.00026	0.00030	0.00036
	Barium (Ba)-Dissolved (mg/L)	0.0631	0.0661	0.0660	0.0667	0.0660
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000161	0.000155	0.000211	0.000337	0.000607
	Calcium (Ca)-Dissolved (mg/L)	82.2	42.1	40.3	39.2	38.6
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00228	0.00080	0.00123	0.00210	0.00393
	Copper (Cu)-Dissolved (mg/L)	0.00031	0.00033	0.00038	0.00030	0.00030
	Iron (Fe)-Dissolved (mg/L)	0.319	0.051	0.117	0.075	0.110
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	0.000056
	Lithium (Li)-Dissolved (mg/L)	0.00647	0.00554	0.00573	0.00649	0.00659
	Magnesium (Mg)-Dissolved (mg/L)	18.0	9.93	9.31	9.84	10.0
	Manganese (Mn)-Dissolved (mg/L)	2.60	0.107	0.125	0.149	0.197
	Molybdenum (Mo)-Dissolved (mg/L)	0.000611	0.000592	0.000593	0.000716	0.000710
	Nickel (Ni)-Dissolved (mg/L)	0.00545	0.00234	0.00260	0.00359	0.00598
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	1.50	1.01	1.02	0.931	0.910

* 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		L1407318-6 SURFACE WATE 27-DEC-13 13:11 NF2A	L1407318-7 SURFACE WATE 27-DEC-13 13:15 NF2B	L1407318-8 SURFACE WATE 27-DEC-13 15:02 R10	L1407318-9 SURFACE WATE 27-DEC-13 15:13 R09	L1407318-10 SURFACE WATE 27-DEC-13 15:25 R08
Grouping	Analyte					
WATER						
Total Metals	Nickel (Ni)-Total (mg/L)	0.0197	<0.00050	<0.00050	<0.00050	<0.00050
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	0.995	0.924	0.939	0.897	0.754
	Selenium (Se)-Total (mg/L)	0.00042	0.00041	0.00042	0.00042	0.00037
	Silicon (Si)-Total (mg/L)	5.97	6.12	6.11	5.96	5.64
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	3.10	2.88	2.93	2.77	2.51
	Strontium (Sr)-Total (mg/L)	0.184	0.174	0.170	0.170	0.136
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00222	0.00216	0.00224	0.00215	0.00167
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	2.97	0.0136	0.0091	<0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0130	0.0018	0.0026	0.0018	0.0014
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00030	0.00044	0.00043	0.00042	0.00044
	Barium (Ba)-Dissolved (mg/L)	0.0692	0.0678	0.0662	0.0646	0.0579
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00215	0.000015	0.000015	<0.000010	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	41.8	39.8	39.5	40.0	33.7
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.0136	<0.00010	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00057	0.00032	0.00032	0.00024	0.00022
	Iron (Fe)-Dissolved (mg/L)	0.275	0.050	0.044	0.036	0.055
	Lead (Pb)-Dissolved (mg/L)	0.000125	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.00792	0.00643	0.00634	0.00644	0.00587
	Magnesium (Mg)-Dissolved (mg/L)	15.3	8.64	8.20	8.43	6.20
	Manganese (Mn)-Dissolved (mg/L)	0.614	0.0206	0.0252	0.0234	0.0213
	Molybdenum (Mo)-Dissolved (mg/L)	0.000728	0.000718	0.000735	0.000734	0.000687
	Nickel (Ni)-Dissolved (mg/L)	0.0199	<0.00050	<0.00050	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	1.09	0.959	0.912	0.916	0.758

* 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	L1407318-11 SURFACE WATE 27-DEC-13 11:20 X3A-R	L1407318-12 SURFACE WATE 27-DEC-13 FARO 27-DEC13-F (FIELD BLANK)	L1407318-13 SURFACE WATE 27-DEC-13 TRAVEL BLANK		
Grouping	Analyte				
WATER					
Total Metals	Nickel (Ni)-Total (mg/L)	0.00227	<0.00050	<0.00050	
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Total (mg/L)	1.01	<0.050	<0.050	
	Selenium (Se)-Total (mg/L)	0.00030	<0.00010	<0.00010	
	Silicon (Si)-Total (mg/L)	5.10	<0.050	<0.050	
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Total (mg/L)	2.66	<0.050	<0.050	
	Strontium (Sr)-Total (mg/L)	0.173	<0.00020	<0.00020	
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Total (mg/L)	0.00214	<0.000010	<0.000010	
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Total (mg/L)	0.301	<0.0030	<0.0030	
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)	0.0024	<0.0010		
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010		
	Arsenic (As)-Dissolved (mg/L)	0.00023	<0.00010		
	Barium (Ba)-Dissolved (mg/L)	0.0588	<0.000050		
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050		
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)	0.000196	<0.000010		
	Calcium (Ca)-Dissolved (mg/L)	39.0	<0.020		
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)	0.00121	<0.00010		
	Copper (Cu)-Dissolved (mg/L)	0.00027	<0.00020		
	Iron (Fe)-Dissolved (mg/L)	0.108	<0.010		
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050		
	Lithium (Li)-Dissolved (mg/L)	0.00524	<0.00050		
	Magnesium (Mg)-Dissolved (mg/L)	9.34	<0.0050		
	Manganese (Mn)-Dissolved (mg/L)	0.123	<0.000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000510	<0.000050		
	Nickel (Ni)-Dissolved (mg/L)	0.00243	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30		
	Potassium (K)-Dissolved (mg/L)	1.02	<0.050		

* 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	L1407318-1 SURFACE WATE 27-DEC-13 09:43 X14	L1407318-2 SURFACE WATE 27-DEC-13 10:17 X10	L1407318-3 SURFACE WATE 27-DEC-13 11:00 X3A	L1407318-4 SURFACE WATE 27-DEC-13 12:10 X2	L1407318-5 SURFACE WATE 27-DEC-13 13:00 NF2																																																																								
Grouping	Analyte																																																																												
WATER																																																																													
Dissolved Metals	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Selenium (Se)-Dissolved (mg/L)</td> <td style="width: 16.6%;">0.00039</td> <td style="width: 16.6%;">0.00037</td> <td style="width: 16.6%;">0.00037</td> <td style="width: 16.6%;">0.00043</td> <td style="width: 16.6%;">0.00038</td> </tr> <tr> <td>Silicon (Si)-Dissolved (mg/L)</td> <td>5.57</td> <td>5.36</td> <td>5.46</td> <td>6.07</td> <td>6.05</td> </tr> <tr> <td>Silver (Ag)-Dissolved (mg/L)</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> </tr> <tr> <td>Sodium (Na)-Dissolved (mg/L)</td> <td>5.22</td> <td>2.70</td> <td>2.77</td> <td>2.91</td> <td>2.84</td> </tr> <tr> <td>Strontium (Sr)-Dissolved (mg/L)</td> <td>0.289</td> <td>0.190</td> <td>0.185</td> <td>0.176</td> <td>0.163</td> </tr> <tr> <td>Thallium (Tl)-Dissolved (mg/L)</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> <td><0.000010</td> </tr> <tr> <td>Tin (Sn)-Dissolved (mg/L)</td> <td><0.00010</td> <td><0.00010</td> <td><0.00010</td> <td><0.00010</td> <td><0.00010</td> </tr> <tr> <td>Titanium (Ti)-Dissolved (mg/L)</td> <td><0.010</td> <td><0.010</td> <td><0.010</td> <td><0.010</td> <td><0.010</td> </tr> <tr> <td>Uranium (U)-Dissolved (mg/L)</td> <td>0.00272</td> <td>0.00224</td> <td>0.00230</td> <td>0.00212</td> <td>0.00205</td> </tr> <tr> <td>Vanadium (V)-Dissolved (mg/L)</td> <td><0.0010</td> <td><0.0010</td> <td><0.0010</td> <td><0.0010</td> <td><0.0010</td> </tr> <tr> <td>Zinc (Zn)-Dissolved (mg/L)</td> <td>0.248</td> <td>0.292</td> <td>0.341</td> <td>0.497</td> <td>0.905</td> </tr> <tr> <td>Zirconium (Zr)-Dissolved (mg/L)</td> <td><0.00080</td> <td><0.00080</td> <td><0.00080</td> <td><0.00080</td> <td><0.00080</td> </tr> </table>					Selenium (Se)-Dissolved (mg/L)	0.00039	0.00037	0.00037	0.00043	0.00038	Silicon (Si)-Dissolved (mg/L)	5.57	5.36	5.46	6.07	6.05	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	Sodium (Na)-Dissolved (mg/L)	5.22	2.70	2.77	2.91	2.84	Strontium (Sr)-Dissolved (mg/L)	0.289	0.190	0.185	0.176	0.163	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	Uranium (U)-Dissolved (mg/L)	0.00272	0.00224	0.00230	0.00212	0.00205	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Zinc (Zn)-Dissolved (mg/L)	0.248	0.292	0.341	0.497	0.905	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Selenium (Se)-Dissolved (mg/L)	0.00039	0.00037	0.00037	0.00043	0.00038																																																																								
Silicon (Si)-Dissolved (mg/L)	5.57	5.36	5.46	6.07	6.05																																																																								
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																																																																								
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Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																																																																								
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010																																																																								
Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010																																																																								
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Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080																																																																								

* 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	L1407318-6 SURFACE WATE 27-DEC-13 13:11 NF2A	L1407318-7 SURFACE WATE 27-DEC-13 13:15 NF2B	L1407318-8 SURFACE WATE 27-DEC-13 15:02 R10	L1407318-9 SURFACE WATE 27-DEC-13 15:13 R09	L1407318-10 SURFACE WATE 27-DEC-13 15:25 R08
Grouping	Analyte						
WATER							
Dissolved Metals	Selenium (Se)-Dissolved (mg/L)	0.00046	0.00045	0.00042	0.00040	0.00038	
	Silicon (Si)-Dissolved (mg/L)	6.47	6.43	6.33	6.09	5.60	
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Dissolved (mg/L)	3.27	3.00	2.83	2.81	2.49	
	Strontium (Sr)-Dissolved (mg/L)	0.182	0.167	0.161	0.162	0.135	
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	
	Uranium (U)-Dissolved (mg/L)	0.00218	0.00211	0.00206	0.00205	0.00166	
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Dissolved (mg/L)	3.28	0.0128	0.0093	<0.0010	<0.0010	
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	

* 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	L1407318-11 SURFACE WATE 27-DEC-13 11:20 X3A-R	L1407318-12 SURFACE WATE 27-DEC-13 FARO 27-DEC13-F (FIELD BLANK)	L1407318-13 SURFACE WATE 27-DEC-13 TRAVEL BLANK	
Grouping	Analyte				
WATER					
Dissolved Metals	Selenium (Se)-Dissolved (mg/L)	0.00032	<0.00010		
	Silicon (Si)-Dissolved (mg/L)	5.22	<0.050		
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	2.73	<0.050		
	Strontium (Sr)-Dissolved (mg/L)	0.168	<0.00020		
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010		
	Uranium (U)-Dissolved (mg/L)	0.00199	<0.000010		
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010		
	Zinc (Zn)-Dissolved (mg/L)	0.339	<0.0010		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080		

* 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	Ammonia, Total (as N)	MS-B	L1407318-1, -10, -11, -12, -2, -3, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis
SFP	Sample was Filtered and Preserved at the laboratory

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
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.			
CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".			
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.			
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.			
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:			
$\text{Ion Balance (\%)} = \frac{[\text{Cation Sum} - \text{Anion Sum}]}{[\text{Cation Sum} + \text{Anion Sum}]}$			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the			

Reference Information

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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

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. Weston et al.

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

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

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.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-VA Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 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.

ZR-D-MS-VA Water Dissolved Zr in Water by ICPMS EPA SW-846 3005A/6020A

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 - mass spectrometry (EPA Method 6020A).

ZR-T-MS-VA Water Total Zr in Water by ICPMS EPA SW-846 3005A/6020A

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 - mass spectrometry (EPA Method 6020A).

** 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 2

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 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.



Short Holding Time



L1407318-COFC

3rm

COC #

Rush Processing

Report To	Company: EDI			<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other			Service Requested (Rush for routine analysis subject to availability)					
Contact:	Meighan Kearns			<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> Excel <input type="checkbox"/> Digital <input type="checkbox"/> Fax			<input type="checkbox"/> Regular (Standard Turnaround Times - Business Days)					
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8			Email 1: mkearns@edynamics.com			<input checked="" type="checkbox"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT					
Phone:	867-393-4882 Fax:			Email 2: Adrienne.Turcotte@gov.yk.ca			<input checked="" type="checkbox"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT					
Invoice To	Same as Report? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Email 3: Patricia.Randell@gov.yk.ca			<input type="checkbox"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT					

Hardcopy of Invoice with Report?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Client / Project Information						Analysis Request					
Company:				Job #: 13-Y-0452						Please indicate below Filtered, Preserved or both (F, P, F/P)					
Contact:				PO / AFE:						ALK-COL-VA, P-T-COL-VA					
Address:				LSD:						ANIONS-ALL-IC-WR					
Phone:				Quote #: Q38556						CARBONS-DOC-VA					

Lab Work Order #	L1407318			ALS Contact:			Sampler:					
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Sample #	Sample Identification (This description will appear on)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-COL-VA, P-T-COL-VA	ANIONS-ALL-IC-WR	CARBONS-DOC-VA	CARBONS-TOC-VA, NH3-F-V	EC-MAN-WR, PH-MAN-WR	MET-D-CCMS-VA, ZR-D-MS-	MET-T-CCMS-VA, ZR-T-MS-	IONBALANCE-VA	TDS-CALC-VA	TSS-LOW-WR	HARDNESS-CALC-VA	Number of Containers
	X14	27 DEC 13	0943	Surface Water	X	X	X	X	X	X	X	X	X	X	X	5
	X10	27 DEC 13	1017													
	X3A		1100													
	X2		1210													
	NF2		1300													
	NF2A		1311													
	NF2B		1315													
	R10		1502													
	R09		1513													
	R08		1525													
	X3A-P		1120													
	FARO 27-DEC13-F (FIELD BLANK)															

RUSH

Priority processing

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Use Faro Equis-Format to report

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 provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)			SHIPMENT VERIFICATION (lab use only)			Observations: Yes / No ? If Yes add SIF	
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:		Time:
<i>[Signature]</i>	28 DEC 13	1400	<i>[Signature]</i>	Dec 30	8:50	-1°C °C				

