



CERTIFICATE OF ANALYSIS

Date: August 12, 2005

ALS File No. W2122

Report On: 50642 Water Analysis

Report To: Gartner Lee Ltd.
2251 2nd Ave
Whitehorse, YT
Y1A 5W1

Attention: Mr. Martin Guilbeault

Received: July 26, 2005

ALS ENVIRONMENTAL

per:

Leanne Harris, B.Sc. - Project Chemist

Heather A. Ross-Easton, B.Sc. - Project Chemist

File No. W2122

REMARKS



Please note that the detection limits for certain Dissolved Metals have been increased for some of the samples reported in the following data tables due to sample matrix interferences.

RESULTS OF ANALYSIS - Water



Sample ID	P03-04-2	P03-04-4	P03-04-6	P03-04-8	P03-08-2
Sample Date	05-07-22	05-07-22	05-07-22	05-07-22	05-07-23
Sample Time	15:26	16:00	17:00	17:00	11:50
ALS ID	1	2	3	4	5

Physical Tests

Conductivity	(uS/cm)	1500	1170	5180	8860	601
Hardness	CaCO3	748	448	1640	1340	320
pH		6.81	7.64	5.63	4.14	7.36

Dissolved Anions

Alkalinity-Total		CaCO3	120	193	50.8	47.4	220
Sulphate	SO4		726	422	4400	9350	94.2

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

File No. W2122
RESULTS OF ANALYSIS - Water



Sample ID	P03-04-2	P03-04-4	P03-04-6	P03-04-8	P03-08-2
Sample Date	05-07-22	05-07-22	05-07-22	05-07-22	05-07-23
Sample Time	15:26	16:00	17:00	17:00	11:50
ALS ID	1	2	3	4	5

Dissolved Metals

Aluminum	D-Al	<0.10	<0.020	<0.20	<0.50	<0.010
Antimony	D-Sb	<0.0050	<0.0010	<0.010	<0.025	<0.00050
Arsenic	D-As	<0.010	0.0060	<0.020	<0.050	<0.0010
Barium	D-Ba	<0.020	0.064	<0.040	<0.10	0.216
Beryllium	D-Be	<0.0050	<0.0050	<0.010	<0.025	<0.0050
Boron	D-B	<0.10	<0.10	<0.20	<0.50	<0.10
Cadmium	D-Cd	0.00222	<0.00010	<0.0010	<0.0025	0.000105
Calcium	D-Ca	216	144	472	429	89.2
Chromium	D-Cr	<0.0050	<0.0010	<0.010	<0.025	<0.00050
Cobalt	D-Co	0.0734	0.0044	0.039	<0.025	0.00054
Copper	D-Cu	<0.010	<0.0020	<0.020	<0.050	0.0028
Iron	D-Fe	0.123	4.32	1380	4290	<0.030
Lead	D-Pb	<0.010	<0.0020	<0.020	<0.050	<0.0010
Lithium	D-Li	<0.050	<0.050	<0.10	<0.25	<0.050
Magnesium	D-Mg	50.8	21.4	112	65.5	23.6
Manganese	D-Mn	29.4	4.15	16.3	26.0	4.46
Mercury	D-Hg	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	D-Mo	<0.010	0.0028	<0.020	<0.050	<0.0010
Nickel	D-Ni	0.119	<0.010	<0.10	<0.25	0.0212
Selenium	D-Se	<0.010	<0.0020	<0.020	<0.050	<0.0010
Silver	D-Ag	<0.00050	<0.00010	<0.0010	<0.0025	<0.000050
Sodium	D-Na	33.9	87.4	113	11	10.2
Thallium	D-Tl	<0.0020	<0.00040	<0.0040	<0.010	<0.00020
Titanium	D-Ti	<0.050	<0.050	<0.10	<0.25	<0.050
Uranium	D-U	<0.0020	0.00326	<0.0040	<0.010	0.00262
Vanadium	D-V	<0.030	<0.030	<0.060	<0.15	<0.030
Zinc	D-Zn	0.0459	0.0054	5.11	2.68	<0.0050

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

RESULTS OF ANALYSIS - Water



Sample ID	P03-08-3	P03-08-4	P03-08-5	P03-08-03D	P03-09-2
Sample Date	05-07-23	05-07-23	05-07-23	05-07-23	05-07-22
Sample Time	11:44	13:14	12:35	11:44	12:45
ALS ID	6	7	8	9	10

Physical Tests

Conductivity	(uS/cm)	769	1570	2410	769	1230
Hardness	CaCO3	416	825	1020	397	590
pH		7.76	7.32	7.24	7.81	7.77

Dissolved Anions

Alkalinity-Total		CaCO3	255	282	176	260	307
Sulphate	SO4		144	620	1330	156	372

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

RESULTS OF ANALYSIS - Water

Sample ID	P03-08-3	P03-08-4	P03-08-5	P03-08-03D	P03-09-2
Sample Date	05-07-23	05-07-23	05-07-23	05-07-23	05-07-22
Sample Time	11:44	13:14	12:35	11:44	12:45
ALS ID	6	7	8	9	10

Dissolved Metals

Aluminum	D-Al	0.036	<0.050	<0.050	<0.020	<0.020
Antimony	D-Sb	<0.0010	0.0060	0.0055	<0.0010	<0.0010
Arsenic	D-As	<0.0020	0.0067	0.0059	<0.0020	<0.0020
Barium	D-Ba	0.141	0.025	<0.020	0.131	0.035
Beryllium	D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron	D-B	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	D-Cd	0.00050	<0.00025	<0.00025	0.00029	<0.00010
Calcium	D-Ca	117	234	321	113	158
Chromium	D-Cr	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010
Cobalt	D-Co	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010
Copper	D-Cu	0.0042	<0.0050	<0.0050	0.0038	<0.0020
Iron	D-Fe	0.055	25.3	26.9	0.053	5.92
Lead	D-Pb	0.0094	<0.0050	<0.0050	0.0065	<0.0020
Lithium	D-Li	<0.050	<0.050	<0.050	<0.050	<0.050
Magnesium	D-Mg	30.2	58.4	52.8	27.9	47.7
Manganese	D-Mn	7.52	3.57	4.61	6.47	0.359
Mercury	D-Hg	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	D-Mo	0.0053	0.0120	0.0058	0.0049	<0.0020
Nickel	D-Ni	0.028	<0.025	<0.025	0.028	<0.010
Selenium	D-Se	<0.0020	<0.0050	<0.0050	<0.0020	<0.0020
Silver	D-Ag	<0.00010	<0.00025	<0.00025	<0.00010	<0.00010
Sodium	D-Na	13.4	55.5	135	12.5	42.9
Thallium	D-Tl	<0.00040	<0.0010	<0.0010	<0.00040	<0.00040
Titanium	D-Ti	<0.050	<0.050	<0.050	<0.050	<0.050
Uranium	D-U	0.00442	0.0062	0.0013	0.00432	0.00147
Vanadium	D-V	<0.030	<0.030	<0.030	<0.030	<0.030
Zinc	D-Zn	<0.0050	0.0195	0.0150	0.0070	<0.0050

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

File No. W2122
RESULTS OF ANALYSIS - Water



Sample ID	P03-09-4	P03-09-6	P03-09-7	P03-09-9	X24A-96
Sample Date	05-07-22	05-07-22	05-07-22	05-07-22	05-07-21
Sample Time	12:57	13:15	13:21	13:40	20:10
ALS ID	11	12	13	14	15

Physical Tests

Conductivity	(uS/cm)	1100	1110	1200	1190	2400
Hardness	CaCO3	532	544	584	594	1440
pH		7.86	7.86	7.90	7.89	7.54

Dissolved Anions

Alkalinity-Total		CaCO3	234	249	246	245	293
Sulphate	SO4		370	362	412	435	1260

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

File No. W2122
RESULTS OF ANALYSIS - Water



Sample ID	P03-09-4	P03-09-6	P03-09-7	P03-09-9	X24A-96
Sample Date	05-07-22	05-07-22	05-07-22	05-07-22	05-07-21
Sample Time	12:57	13:15	13:21	13:40	20:10
ALS ID	11	12	13	14	15

Dissolved Metals

Aluminum	D-Al	<0.020	<0.020	<0.020	<0.020	<0.10
Antimony	D-Sb	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050
Arsenic	D-As	<0.0020	<0.0020	<0.0020	<0.0020	<0.010
Barium	D-Ba	0.038	0.057	0.057	0.071	0.025
Beryllium	D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron	D-B	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	D-Cd	0.00011	<0.00010	<0.00010	0.00015	0.00134
Calcium	D-Ca	161	160	176	180	414
Chromium	D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050
Cobalt	D-Co	0.0030	0.0010	0.0013	0.0027	0.0437
Copper	D-Cu	<0.0020	<0.0020	<0.0020	0.0343	<0.010
Iron	D-Fe	<0.030	<0.030	<0.030	0.080	0.449
Lead	D-Pb	<0.0020	<0.0020	<0.0020	<0.0020	<0.010
Lithium	D-Li	<0.050	<0.050	<0.050	<0.050	<0.050
Magnesium	D-Mg	31.4	35.2	35.0	35.3	98.4
Manganese	D-Mn	5.26	4.90	5.83	5.80	32.7
Mercury	D-Hg	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	D-Mo	<0.0020	<0.0020	<0.0020	<0.0020	<0.010
Nickel	D-Ni	<0.010	<0.010	<0.010	<0.010	0.160
Selenium	D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.010
Silver	D-Ag	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050
Sodium	D-Na	27.1	31.7	31.7	32.1	36.2
Thallium	D-Tl	<0.00040	<0.00040	<0.00040	<0.00040	<0.0020
Titanium	D-Ti	<0.050	<0.050	<0.050	<0.050	<0.050
Uranium	D-U	0.00602	0.00442	0.00563	0.00565	0.0089
Vanadium	D-V	<0.030	<0.030	<0.030	<0.030	0.038
Zinc	D-Zn	<0.0050	<0.0050	<0.0050	<0.0050	0.0102

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

File No. W2122
RESULTS OF ANALYSIS - Water



Sample ID	X24C-96	X24D-96	X25A	X25B	X25A-D
Sample Date	05-07-21	05-07-21	05-07-21	05-07-21	05-07-21
Sample Time	20:32	19:40	18:22	18:05	18:22
ALS ID	16	17	18	19	20

Physical Tests

	(uS/cm)	X24C-96	X24D-96	X25A	X25B	X25A-D
Conductivity	(uS/cm)	2570	2700	950	1110	950
Hardness	CaCO3	1470	1540	508	547	489
pH		7.41	7.45	7.88	8.02	7.90

Dissolved Anions

	SO4	CaCO3	X24C-96	X24D-96	X25A	X25B	X25A-D
Alkalinity-Total		CaCO3	297	318	229	247	234
Sulphate	SO4		1410	1490	292	347	291

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

RESULTS OF ANALYSIS - Water

Sample ID	X24C-96	X24D-96	X25A	X25B	X25A-D
Sample Date	05-07-21	05-07-21	05-07-21	05-07-21	05-07-21
Sample Time	20:32	19:40	18:22	18:05	18:22
ALS ID	16	17	18	19	20

Dissolved Metals

Aluminum	D-Al	<0.10	<0.050	<0.020	<0.020	<0.020
Antimony	D-Sb	<0.0050	<0.0025	<0.0010	<0.0010	<0.0010
Arsenic	D-As	<0.010	<0.0050	<0.0020	<0.0020	<0.0020
Barium	D-Ba	<0.020	0.023	0.044	0.027	0.042
Beryllium	D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Boron	D-B	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	D-Cd	<0.00050	0.00194	0.00035	<0.00010	0.00035
Calcium	D-Ca	423	450	144	170	140
Chromium	D-Cr	<0.0050	<0.0025	<0.0010	<0.0010	<0.0010
Cobalt	D-Co	0.0573	0.0282	0.0076	<0.0010	0.0077
Copper	D-Cu	<0.010	<0.0050	0.0024	<0.0020	0.0022
Iron	D-Fe	0.164	<0.030	<0.030	0.672	<0.030
Lead	D-Pb	<0.010	<0.0050	<0.0020	<0.0020	<0.0020
Lithium	D-Li	<0.050	<0.050	<0.050	<0.050	<0.050
Magnesium	D-Mg	100	102	35.7	29.8	34.2
Manganese	D-Mn	40.6	37.9	5.44	0.182	5.21
Mercury	D-Hg	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	D-Mo	<0.010	<0.0050	<0.0020	<0.0020	<0.0020
Nickel	D-Ni	0.120	0.136	0.011	<0.010	0.012
Selenium	D-Se	<0.010	<0.0050	<0.0020	<0.0020	<0.0020
Silver	D-Ag	<0.00060	<0.00025	<0.00010	<0.00010	<0.00010
Sodium	D-Na	40.2	47.7	30.0	53.5	28.8
Thallium	D-Tl	<0.0020	<0.0010	<0.00040	<0.00040	<0.00040
Titanium	D-Ti	<0.050	<0.050	<0.050	<0.050	<0.050
Uranium	D-U	0.0070	0.0046	0.00877	0.00508	0.00894
Vanadium	D-V	0.039	0.031	<0.030	<0.030	<0.030
Zinc	D-Zn	0.0148	0.0488	0.0067	<0.0050	0.0052

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.

Appendix 1 - METHODOLOGY



Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

Conductivity in Water

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

Recommended Holding Time:

Sample: 28 days

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

pH in Water

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.

Recommended Holding Time:

Sample: 2 hours

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Alkalinity in Water by Colourimetry

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

Recommended Holding Time:

Sample: 14 days

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Sulphate in Water

This analysis is carried out using procedures adapted from APHA Method 4500-SO4 "Sulphate". Sulphate is determined using the turbidimetric method.

Recommended Holding Time:

Sample: 28 days

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver



Metals in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 20th Edition 1998 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 hotplate or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by atomic absorption/emission spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Recommended Holding Time:
Sample: 6 months
Reference: EPA

Laboratory Location: ALS Environmental, Vancouver

Mercury in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 20th Edition 1998 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 a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

Recommended Holding Time:
Sample: 28 days
Reference: EPA

Laboratory Location: ALS Environmental, Vancouver

Results contained within this certificate relate only to the samples as submitted.

This Certificate Of Analysis shall only be reproduced in full, except with the written approval of ALS Environmental.

End of Report