



Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Lethbridge Surrey

Quality Control

ATT-6
Norwest Labs
9938-67 Avenue
Edmonton, AB. T6E 0P5
Phone: (780) 438-5522
Fax: (780) 438-0396

Bill to: Echo Bay Mines Ltd.
Report to: Echo Bay Mines Ltd.

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein
Sampled By: M. Sawyer
Company: Echo Bay Mines

Project

ID:

Name:

Location:

LSD:

P.O.:

Acct. Code:

NWL Lot ID: 182067

Control Number:

Date Received: Jul 18, 2002

Date Reported: Aug 01, 2002

Report Number: 285685

Page: 17 of 25

Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Cyanide	mg/L	<0.001	0.00000	-0.00100	0.00100	✓

Material Used: Edmonton Method Blank
Date Acquired: Aug 01, 2002
Acquired By:

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Ammonium - N	mg/L	<0.05	<0.05	10.00	0.10	✓

Material Used: Edmonton Duplicate
Date Acquired: Jul 22, 2002
Acquired By: Matt Cummings

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Ammonium - N	mg/L	3.28	3.00	2.70	3.30	✓
Cyanide	mg/L	0.080	0.0750	0.0680	0.0870	✓

Material Used: Water High
Date Acquired: Jul 23, 2002
Acquired By:

Ammonium - N	mg/L	0.79	0.800	0.720	0.880	✓
Cyanide	mg/L	0.016	0.0150	0.0135	0.0165	✓

Material Used: Water Low
Date Acquired: Aug 01, 2002
Acquired By:



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Page: 18 of 25

Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mg/L	8	5	10.0	5.0	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Jul 18, 2002					
Acquired By:	Tina Knott					



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Page: 19 of 25

Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.63	8.63	10.00	0.10	✓
Conductivity	dS/m	0.678	0.678	10.000	0.002	✓
Calcium	mg/L	85.4	86.5	10.0	0.6	✓
Magnesium	mg/L	8.13	8.17	10.00	0.15	✓
P-Alkalinity	mg/L	49	41	10.0	5.0	✓
T-Alkalinity	mg/L	344	351	10.0	5.0	✓

Material Used: Edmonton Duplicate
Date Acquired: Jul 19, 2002
Acquired By: Tina Knott



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Page: 20 of 25

Routine Water (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	10.6	10.00	9.00	11.00	✓
Magnesium	mg/L	51.4	50.00	45.00	55.00	✓
Material Used:	Metals High					
Date Acquired:	Jul 18, 2002					
Acquired By:	Jodi Johnston					
Calcium	mg/L	<0.2	0.1000	0.0800	0.1200	✓
Magnesium	mg/L	0.58	0.500	0.400	0.600	✓
Material Used:	Metals Low					
Date Acquired:	Jul 18, 2002					
Acquired By:	Jodi Johnston					
pH		9.21	9.18	8.73	9.67	✓
Conductivity	dS/m	2.75	2.765	2.680	2.840	✓
P-Alkalinity	mg/L	524		490	557	✓
T-Alkalinity	mg/L	1010	1000	972	1035	✓
Material Used:	Water High					
Date Acquired:	Jul 19, 2002					
Acquired By:	Tina Knott					
pH		6.92	6.86	6.82	6.91	✓
Conductivity	dS/m	0.075	0.0739	0.0740	0.0790	✓
P-Alkalinity	mg/L	73		46.8	71.0	✓
T-Alkalinity	mg/L	130	125	121	133	✓
Material Used:	Water Low					
Date Acquired:	Jul 19, 2002					
Acquired By:	Tina Knott					



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Page: 21 of 25

Metals Total

Blanks	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Arsenic	mg/L		0.000000	-0.000200	0.000200	✓
Calcium	mg/L	<0.2	0.0000	-0.0312	0.2000	✓
Iron	mg/L	<0.003	0.0000	-0.0149	0.0290	✓
Magnesium	mg/L	<0.05	0.0000	-0.0305	0.0500	✓
Manganese	mg/L	0.0006	0.000000	-0.000700	0.001200	✓
Potassium	mg/L	<0.4	0.000	-0.102	0.400	✓
Silicon	mg/L	<0.004	0.0000	-0.0435	0.0933	✓
Sodium	mg/L	<0.4	0.000	-0.194	0.400	✓
Sulphur	mg/L	0.009	0.0000	-0.0333	0.0447	✓

Material Used: Edmonton Method Blank

Date Acquired: Jul 18, 2002

Acquired By:

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Arsenic	mg/L	UNDEFINED		10.0000	0.0006	✓
Calcium	mg/L	72.5	72.0	10.0	0.6	✓
Iron	mg/L	0.132	0.119	10.000	0.009	✓
Magnesium	mg/L	7.15	7.13	10.00	0.18	✓
Manganese	mg/L	1.11	1.10	10.0000	0.0006	✓
Potassium	mg/L	6.3	6.3	10.0	1.2	✓
Silicon	mg/L	2.30	2.32	10.000	0.012	✓
Sodium	mg/L	77.8	77.8	10.0	1.2	✓
Sulphur	mg/L	108	107	10.000	0.027	✓

Material Used: Edmonton Duplicate

Date Acquired: Jul 18, 2002

Acquired By: Jesse Dang



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Page: 22 of 25

Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	0.9	1.000	0.900	1.100	✓
Iron	mg/L	0.495	0.500	0.478	0.552	✓
Magnesium	mg/L	4.78	5.00	4.48	5.19	✓
Manganese	mg/L	0.0513	0.0500	0.0412	0.0539	✓
Potassium	mg/L	4.6	5.00	4.30	5.06	✓
Silicon	mg/L	1.91	2.000	1.700	2.160	✓
Sodium	mg/L	4.3	5.00	4.08	5.25	✓
Sulphur	mg/L	1.84	2.000	1.730	2.110	✓

Material Used: Edmonton Digestion Check

Date Acquired: Jul 18, 2002

Acquired By:

Arsenic	mg/L		0.0200	0.0180	0.0220	✓
Calcium	mg/L	9.2	10.00	9.00	11.00	✓
Iron	mg/L	4.83	5.000	4.500	5.500	✓
Magnesium	mg/L	46.9	50.00	45.00	55.00	✓
Manganese	mg/L	0.490	0.5000	0.4500	0.5500	✓
Potassium	mg/L	46.3	50.0	45.0	55.0	✓
Silicon	mg/L	22.9	20.000	16.000	24.000	✓
Sodium	mg/L	47.3	50.0	45.0	55.0	✓
Sulphur	mg/L	21.1	20.000	18.000	22.000	✓

Material Used: Metals High

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Page: 23 of 25

Metals Total (Continued...)

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Arsenic	mg/L		0.00200	0.00160	0.00240	✓
Calcium	mg/L	<0.2	0.1000	0.0800	0.1200	✓
Iron	mg/L	0.049	0.0500	0.0400	0.0600	✓
Magnesium	mg/L	0.48	0.500	0.400	0.600	✓
Manganese	mg/L	0.0059	0.00500	0.00400	0.00600	✓
Potassium	mg/L	0.6	0.500	0.400	0.600	✓
Silicon	mg/L	0.238	0.200	0.160	0.240	✓
Sodium	mg/L	0.6	0.500	0.400	0.600	✓
Sulphur	mg/L	0.220	0.200	0.160	0.240	✓
Aluminum	ug/L	196	200	180	220	✓
Antimony	ug/L	50.8	50.0	45.0	55.0	✓
Arsenic	ug/L	53.2	50.0	45.0	55.0	✓
Barium	ug/L	5	5.00	4.50	5.50	✓
Beryllium	ug/L	5.2	5.00	4.50	5.50	✓
Bismuth	ug/L	51.4	50.0	45.0	55.0	✓
Boron	ug/L	213	200	180	220	✓
Cadmium	ug/L	4.97	5.00	4.50	5.50	✓
Chromium	ug/L	9.8	10.00	9.00	11.00	✓
Cobalt	ug/L	9.9	10.00	9.00	11.00	✓
Copper	ug/L	10	10.00	9.00	11.00	✓
Lead	ug/L	20.2	20.0	18.0	22.0	✓
Lithium	ug/L	5	5.00	4.50	5.50	✓
Molybdenum	ug/L	10	10.00	9.00	11.00	✓
Nickel	ug/L	9.8	10.00	9.00	11.00	✓
Selenium	ug/L	51.7	50.0	45.0	55.0	✓
Silver	ug/L	9.6	10.00	9.00	11.00	✓
Strontium	ug/L	5	5.00	4.50	5.50	✓
Thallium	ug/L	50.9	50.00	45.00	55.00	✓
Titanium	ug/L	5.1	5.00	4.50	5.50	✓
Uranium	ug/L	534	500.0	450.0	550.0	✓
Vanadium	ug/L	9.5	10.00	9.00	11.00	✓
Zinc	ug/L	11	10.00	9.00	11.00	✓
Zirconium	ug/L	10	10.00	9.00	11.00	✓

Material Used: Metals Low
Date Acquired: Jul 18, 2002
Acquired By: Darren Crichton



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Page: 24 of 25

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Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	20	20.0	18.0	22.0	✓
Antimony	ug/L	5.0	5.00	4.50	5.50	✓
Arsenic	ug/L	5.2	5.00	4.50	5.50	✓
Barium	ug/L	<1	0.500	0.450	0.550	✓
Beryllium	ug/L	0.6	0.500	0.450	0.550	✓
Bismuth	ug/L	5.0	5.00	4.50	5.50	✓
Boron	ug/L	22	20.0	18.0	22.0	✓
Cadmium	ug/L	0.50	0.500	0.450	0.550	✓
Chromium	ug/L	1.0	1.000	0.900	1.100	✓
Cobalt	ug/L	1.0	1.000	0.900	1.100	✓
Copper	ug/L	1	1.000	0.900	1.100	✓
Lead	ug/L	2.0	2.00	1.80	2.20	✓
Lithium	ug/L	<1	0.500	0.450	0.550	✓
Molybdenum	ug/L	1	1.000	0.900	1.100	✓
Nickel	ug/L	1.0	1.000	0.900	1.100	✓
Selenium	ug/L	5.1	5.00	4.50	5.50	✓
Silver	ug/L	1.0	1.000	0.900	1.100	✓
Strontium	ug/L	<1	0.500	0.450	0.550	✓
Thallium	ug/L	4.97	5.00	4.50	5.50	✓
Titanium	ug/L	0.5	0.500	0.450	0.550	✓
Uranium	ug/L	51.1	50.0	45.0	55.0	✓
Vanadium	ug/L	1.0	1.000	0.900	1.100	✓
Zinc	ug/L	<1	1.000	0.900	1.100	✓
Zirconium	ug/L	1	1.000	0.900	1.100	✓

Material Used: Metals Trace

Date Acquired: Jul 18, 2002

Acquired By: Darren Crichton