



Agri-Food & Environmental Group
Calgary Edmonton Winnipeg Vancouver Surrey

Quality Control

Norwest Labs
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ATT-10

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

9818 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Holmstein

Sampled By: M. Sawyer
Company:

Project
ID:
Name: Lupin Operation
Location:
LSD:
P.O.:
Acct Code:

NWL Lot ID: 184897
Control Number:
Date Received: Aug 01, 2002
Date Reported: Aug 08, 2002
Report Number: 287065

Page: 2 of 3

Inorganic Nonmetallic Parameters

Blank	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 08, 2002					
Acquired By:						

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Cyanide	mg/L	0.071	0.0750	0.0680	0.0870	✓
Material Used:	Water High					
Date Acquired:	Aug 08, 2002					
Acquired By:						

Cyanide	mg/L	0.016	0.0150	0.0135	0.0165	✓
Material Used:	Water Low					
Date Acquired:	Aug 08, 2002					
Acquired By:						

Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mg/L	6	7	10.0	5.0	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 02, 2002					
Acquired By:	Stef Pavlyshyn					

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**NORWEST
LABS**

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Quality Control
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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:
Project
ID:
Name: Lupin Operation
Location:
LSO:
P.O.:
Acct. Code:
NWL Lot ID: 184897
Control Number:
Date Received: Aug 01, 2002
Date Reported: Aug 02, 2002
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Page: 3 of 5

Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		7.78	7.80	10.00	0.10	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 02, 2002					
Acquired By:						

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
pH		9.07	9.18	8.73	9.67	✓
Material Used:	Water High					
Date Acquired:	Aug 02, 2002					
Acquired By:						

pH		6.84	6.86	6.82	6.91	✓
Material Used:	Water Low					
Date Acquired:	Aug 02, 2002					
Acquired By:	Shane Knapp					



**NORWEST
LABS**

Agri Food & Environmental Science
Calgary Edmonton Winnipeg Laboratory Survey

Quality Control

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

9618 International Airport
Edmonton, AB, Canada
T5J2T2

Attn: David Hohnstein

Sampled By: M. Sawyer
Company:

Project
ID:
Name: Lupin Operation
Location:
Lab:
P.O.:
Acct. Code:

NWL Lot ID: J84897
Control Number:
Date Received: Aug 01, 2002
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Page: 4 of 5

Metals Total

Control Sample	Units	Measured	Target	Lower Limit	Upper Limit	Passed QC
Arsenic	ug/L	53.7	50.0	45.0	55.0	✓
Copper	ug/L	11	10.00	9.00	11.00	✓
Zinc	ug/L	1.0	10.00	9.00	11.00	✓

Material Used: Metals Low
Date Acquired: Aug 02, 2002
Acquired By: Darren Crichton

Arsenic	ug/L	5.3	5.00	4.50	5.50	✓
Copper	ug/L	1	1.000	0.900	1.100	✓
Zinc	ug/L	<1	1.000	0.900	1.100	✓

Material Used: Metals Trace
Date Acquired: Aug 02, 2002
Acquired By: Darren Crichton



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Calgary Edmonton Winnipeg Laboratories Survey

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Edmonton, AB, Canada
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Attn: David Hohnstein
Sampled By: M. Sawyer
Company:

Methodology and Notes

Norwest Labs
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Phone: (780) 438-5522
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Project ID:
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Page: 5 of 5

Method of Analysis:

Test	Reference	Method	Date of Analysis	Location	Analyst
Alkalinity, pH, and EC in water	APHA	* Electrometric Method, 4500-H+ B	Aug 06, 2002	Norwest Labs Edmonton	Shane Knapp
		+ Laboratory & Field Methods, 2550 B	Aug 06, 2002	Norwest Labs Edmonton	Shane Knapp
Cyanide (Strong Acid Dissociable) in water	APHA	+ Total Cyanide after Distillation, 4500-CN- C	Aug 08, 2002	Norwest Labs Edmonton	Gordon Genssmann
Metals ICP-MS (Total) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	Aug 07, 2002	Norwest Labs Edmonton	Darren Crichton
Solids Suspended (Total, Fixed and Volatile)	APHA	* TSS Dried at 103-105 C, 2540 D	Aug 02, 2002	Norwest Labs Edmonton	Iona McCleughan

* Norwest method(s) is based on reference method

References:

APHA
US EPA

Standard Methods for the Examination of Water and Wastewater
US Environmental Protection Agency Test Methods

Comments:

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