



LUPIN MINES INCORPORATED
ATTN: D Vokey
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Date Received: 10-JUL-12
Report Date: 19-JUL-12 11:54 (MT)
Version: FINAL

Client Phone: 604-682-3366

Certificate of Analysis

Lab Work Order #: L1175954
Project P.O. #: NOT SUBMITTED
Job Reference: LUPIN
C of C Numbers:
Legal Site Desc:

Shannon Luchka
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1175954-1	LUP-01-2012-07-10							
Sampled By:	A. LAUDRUM on 10-JUL-12 @ 09:45							
Matrix:	water							
Total Metals - CCME								
Mercury (Hg) - Total								
Mercury (Hg)-Total		<0.00010		0.00010	mg/L		16-JUL-12	R2398874
Total Metals in Water by ICPMS (Low)								
Aluminum (Al)-Total		0.011		0.010	mg/L		17-JUL-12	R2399696
Antimony (Sb)-Total		<0.00040		0.00040	mg/L		17-JUL-12	R2399696
Arsenic (As)-Total		<0.00040		0.00040	mg/L		17-JUL-12	R2399696
Barium (Ba)-Total		<0.0030		0.0030	mg/L		17-JUL-12	R2399696
Beryllium (Be)-Total		<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Boron (B)-Total		<0.050		0.050	mg/L		17-JUL-12	R2399696
Cadmium (Cd)-Total		<0.000050		0.000050	mg/L		17-JUL-12	R2399696
Chromium (Cr)-Total		<0.0050		0.0050	mg/L		17-JUL-12	R2399696
Cobalt (Co)-Total		<0.0020		0.0020	mg/L		17-JUL-12	R2399696
Copper (Cu)-Total		<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Lead (Pb)-Total		<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Lithium (Li)-Total		<0.010		0.010	mg/L		17-JUL-12	R2399696
Molybdenum (Mo)-Total		<0.0050		0.0050	mg/L		17-JUL-12	R2399696
Nickel (Ni)-Total		<0.0020		0.0020	mg/L		17-JUL-12	R2399696
Selenium (Se)-Total		<0.00040		0.00040	mg/L		17-JUL-12	R2399696
Silver (Ag)-Total		<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Thallium (Tl)-Total		<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Tin (Sn)-Total		<0.050		0.050	mg/L		17-JUL-12	R2399696
Titanium (Ti)-Total		<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Uranium (U)-Total		<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Vanadium (V)-Total		<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Zinc (Zn)-Total		<0.0040		0.0040	mg/L		17-JUL-12	R2399696
Total Metals in Water by ICPOES (Low)								
Calcium (Ca)-Total		0.87		0.50	mg/L		18-JUL-12	R2399840
Iron (Fe)-Total		<0.010		0.010	mg/L		18-JUL-12	R2399840
Magnesium (Mg)-Total		0.42		0.10	mg/L		18-JUL-12	R2399840
Manganese (Mn)-Total		0.0029		0.0020	mg/L		18-JUL-12	R2399840
Potassium (K)-Total		0.35		0.10	mg/L		18-JUL-12	R2399840
Sodium (Na)-Total		<1.0		1.0	mg/L		18-JUL-12	R2399840
Miscellaneous Parameters								
Special Request		See Attached					11-JUL-12	
Total Suspended Solids		<3.0		3.0	mg/L		13-JUL-12	R2398689
pH		6.96		0.10	pH		14-JUL-12	R2398127
L1175954-2	LUP-14-2012-07-10							
Sampled By:	A. LAUDRUM on 10-JUL-12 @ 10:15							
Matrix:	water							
Hardness								
Dissolved Metals in Water by ICPOES								
Calcium (Ca)-Dissolved		22.6		0.50	mg/L		17-JUL-12	R2399832
Magnesium (Mg)-Dissolved		4.80		0.10	mg/L		17-JUL-12	R2399832
Hardness (from Dissolved Ca and Mg)								
Hardness (as CaCO3)		76.1		1.3	mg/L		18-JUL-12	
Total Metals - CCME								
Mercury (Hg) - Total								
Mercury (Hg)-Total		<0.00010		0.00010	mg/L		16-JUL-12	R2398874
Total Metals in Water by ICPMS (Low)								
Aluminum (Al)-Total		0.037		0.010	mg/L		17-JUL-12	R2399696
Antimony (Sb)-Total		<0.00040		0.00040	mg/L		17-JUL-12	R2399696

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1175954-2 LUP-14-2012-07-10 Sampled By: A. LAUDRUM on 10-JUL-12 @ 10:15 Matrix: water							
Total Metals in Water by ICPMS (Low)							
Arsenic (As)-Total	0.00935		0.00040	mg/L		17-JUL-12	R2399696
Barium (Ba)-Total	0.0148		0.0030	mg/L		17-JUL-12	R2399696
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Boron (B)-Total	<0.050		0.050	mg/L		17-JUL-12	R2399696
Cadmium (Cd)-Total	<0.000050		0.000050	mg/L		17-JUL-12	R2399696
Chromium (Cr)-Total	<0.0050		0.0050	mg/L		17-JUL-12	R2399696
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		17-JUL-12	R2399696
Copper (Cu)-Total	0.0017		0.0010	mg/L		17-JUL-12	R2399696
Lead (Pb)-Total	0.00028		0.00010	mg/L		17-JUL-12	R2399696
Lithium (Li)-Total	0.025		0.010	mg/L		17-JUL-12	R2399696
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		17-JUL-12	R2399696
Nickel (Ni)-Total	0.0063		0.0020	mg/L		17-JUL-12	R2399696
Selenium (Se)-Total	<0.00040		0.00040	mg/L		17-JUL-12	R2399696
Silver (Ag)-Total	<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Tin (Sn)-Total	<0.050		0.050	mg/L		17-JUL-12	R2399696
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Uranium (U)-Total	<0.00010		0.00010	mg/L		17-JUL-12	R2399696
Vanadium (V)-Total	<0.0010		0.0010	mg/L		17-JUL-12	R2399696
Zinc (Zn)-Total	0.0145		0.0040	mg/L		17-JUL-12	R2399696
Total Metals in Water by ICPOES (Low)							
Calcium (Ca)-Total	22.9		0.50	mg/L		18-JUL-12	R2399840
Iron (Fe)-Total	0.395		0.010	mg/L		18-JUL-12	R2399840
Magnesium (Mg)-Total	4.77		0.10	mg/L		18-JUL-12	R2399840
Manganese (Mn)-Total	0.0358		0.0020	mg/L		18-JUL-12	R2399840
Potassium (K)-Total	2.61		0.10	mg/L		18-JUL-12	R2399840
Sodium (Na)-Total	15.3		1.0	mg/L		18-JUL-12	R2399840
Miscellaneous Parameters							
Alkalinity, Total (as CaCO3)	13.9		5.0	mg/L		14-JUL-12	R2398127
Ammonia, Total (as N)	<0.050		0.050	mg/L		16-JUL-12	R2398944
Biochemical Oxygen Demand	<2.0		2.0	mg/L		13-JUL-12	R2400341
Orthophosphate-Dissolved (as P)	<0.010		0.010	mg/L		13-JUL-12	R2398477
Oil and Grease	<1.0		1.0	mg/L		15-JUL-12	R2398597
Special Request	See Attached					11-JUL-12	
Phosphorus (P)-Total	<0.020		0.020	mg/L	16-JUL-12	17-JUL-12	R2399484
Total Suspended Solids	<3.0		3.0	mg/L		13-JUL-12	R2398689
pH	7.08		0.10	pH		14-JUL-12	R2398127
Total Nitrogen							
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		13-JUL-12	R2399054
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		18-JUL-12	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		13-JUL-12	R2399054
TKN in Water by Colour							
Total Kjeldahl Nitrogen	0.39		0.20	mg/L	16-JUL-12	17-JUL-12	R2399378
Total Nitrogen (Calculation)							
Total Nitrogen	0.39		0.21	mg/L		18-JUL-12	
L1175954-3 LUP-14D-2012-07-10 Sampled By: A. LAUDRUM on 10-JUL-12 @ 10:15 Matrix: water							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1175954-3	LUP-14D-2012-07-10							
Sampled By:	A. LAUDRUM on 10-JUL-12 @ 10:15							
Matrix:	water							
Total Metals - CCME								
Mercury (Hg) - Total								
Mercury (Hg)-Total		<0.00010		0.00010	mg/L		16-JUL-12	R2398874
Total Metals in Water by ICPMS (Low)								
Aluminum (Al)-Total		0.039		0.010	mg/L		18-JUL-12	R2400671
Antimony (Sb)-Total		<0.00040		0.00040	mg/L		18-JUL-12	R2400671
Arsenic (As)-Total		0.00998		0.00040	mg/L		18-JUL-12	R2400671
Barium (Ba)-Total		0.0128		0.0030	mg/L		18-JUL-12	R2400671
Beryllium (Be)-Total		<0.0010		0.0010	mg/L		18-JUL-12	R2400671
Boron (B)-Total		<0.050		0.050	mg/L		18-JUL-12	R2400671
Cadmium (Cd)-Total		<0.000050		0.000050	mg/L		18-JUL-12	R2400671
Chromium (Cr)-Total		<0.0050		0.0050	mg/L		18-JUL-12	R2400671
Cobalt (Co)-Total		<0.0020		0.0020	mg/L		18-JUL-12	R2400671
Copper (Cu)-Total		0.0012		0.0010	mg/L		18-JUL-12	R2400671
Lead (Pb)-Total		<0.00010		0.00010	mg/L		18-JUL-12	R2400671
Lithium (Li)-Total		0.026		0.010	mg/L		18-JUL-12	R2400671
Molybdenum (Mo)-Total		<0.0050		0.0050	mg/L		18-JUL-12	R2400671
Nickel (Ni)-Total		0.0062		0.0020	mg/L		18-JUL-12	R2400671
Selenium (Se)-Total		<0.00040		0.00040	mg/L		18-JUL-12	R2400671
Silver (Ag)-Total		<0.00010		0.00010	mg/L		18-JUL-12	R2400671
Thallium (Tl)-Total		<0.00010		0.00010	mg/L		18-JUL-12	R2400671
Tin (Sn)-Total		<0.050		0.050	mg/L		18-JUL-12	R2400671
Titanium (Ti)-Total		<0.0010		0.0010	mg/L		18-JUL-12	R2400671
Uranium (U)-Total		<0.00010		0.00010	mg/L		18-JUL-12	R2400671
Vanadium (V)-Total		<0.0010		0.0010	mg/L		18-JUL-12	R2400671
Zinc (Zn)-Total		<0.0040		0.0040	mg/L		18-JUL-12	R2400671
Total Metals in Water by ICPOES (Low)								
Calcium (Ca)-Total		22.1		0.50	mg/L		18-JUL-12	R2399840
Iron (Fe)-Total		0.366		0.010	mg/L		18-JUL-12	R2399840
Magnesium (Mg)-Total		4.58		0.10	mg/L		18-JUL-12	R2399840
Manganese (Mn)-Total		0.0355		0.0020	mg/L		18-JUL-12	R2399840
Potassium (K)-Total		2.61		0.10	mg/L		18-JUL-12	R2399840
Sodium (Na)-Total		14.9		1.0	mg/L		18-JUL-12	R2399840
Miscellaneous Parameters								
Biochemical Oxygen Demand		<2.0		2.0	mg/L		13-JUL-12	R2400341
Oil and Grease		<1.0		1.0	mg/L		15-JUL-12	R2398597
Special Request		See Attached					11-JUL-12	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-ED	Water	Alkalinity, Total	APHA 2320 B-Auto-Pot. Titration
BOD-ED	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day Incub.-O2 electrode
ETL-HARDNESS-DIS-ED	Water	Hardness (from Dissolved Ca and Mg)	APHA 2340 B-Calculation
HG-T-CVAA-ED	Water	Mercury (Hg) - Total	EPA 245.7 / EPA 245.1
MET-D-ICP-ED	Water	Dissolved Metals in Water by ICPOES	APHA 3120 B-ICP-OES
MET-T-L-ICP-ED	Water	Total Metals in Water by ICPOES (Low)	APHA 3120 B-ICP-OES
MET-T-L-MS-ED	Water	Total Metals in Water by ICPMS (Low)	SW 846 - 6020-ICPMS
N-T-CALC-ED	Water	Total Nitrogen (Calculation)	APHA 4500 N-Calculated
Total Nitrogen is a calculated parameter. Total Nitrogen = Total Kjeldahl Nitrogen + [Nitrate and Nitrite (as N)]			
NH3-CFA-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.			
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-ED	Water	Nitrite as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
NO3-IC-ED	Water	Nitrate as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
OGG-LLE-ED	Water	Oil and Grease-Gra	APHA 5520 B HEXANE MTBE EXT. GRAVIME
P-T-COL-ED	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.			
PH-ED	Water	pH	APHA 4500 H-Electrode
All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)			
PO4-DO-COL-ED	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.			
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
SPECIAL REQUEST-TG	Misc.	Special Request Taiga Yellowknife	SEE SUBLET LAB RESULTS
TKN-CFA-ED	Water	TKN in Water by Colour	APHA 4500-NORG (TKN)
This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined by sample digestion at 380 celcius with analysis using an automated colourimetric finish.			

** 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
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
TG	TAIGA ENVIRONMENTAL LABORATORY (INAC)

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg wwwt - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
- mg/L - unit of concentration based on volume, parts per million.

< - Less than.
D.L. - The reporting limit.
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.

Quality Control Report

Workorder: L1175954

Report Date: 19-JUL-12

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: D Vokey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TOT-ED		Water						
Batch	R2398127							
WG1506931-4	LCS							
Alkalinity, Total (as CaCO3)			110.0		%		85-115	13-JUL-12
WG1506931-1	MB							
Alkalinity, Total (as CaCO3)			<5.0		mg/L		5	13-JUL-12
BOD-ED		Water						
Batch	R2400341							
WG1507144-3	DUP	L1177308-1						
Biochemical Oxygen Demand		<2.0	<2.0	RPD-NA	mg/L	N/A	20	13-JUL-12
WG1507144-2	LCS							
Biochemical Oxygen Demand			97.4		%		85-115	13-JUL-12
WG1507144-1	MB							
Biochemical Oxygen Demand			<2.0		mg/L		2	13-JUL-12
HG-T-CVAA-ED		Water						
Batch	R2398874							
WG1508283-2	LCS							
Mercury (Hg)-Total			108.4		%		80-120	16-JUL-12
WG1508283-3	LCSD	WG1508283-2						
Mercury (Hg)-Total		108.4	108.5		%	0.1	20	16-JUL-12
WG1508283-1	MB							
Mercury (Hg)-Total			<0.00010		mg/L		0.0001	16-JUL-12
MET-D-ICP-ED		Water						
Batch	R2399832							
WG1508985-2	CRM	EU-H-4_OPTWATER						
Calcium (Ca)-Dissolved			104.7		%		80-120	17-JUL-12
Magnesium (Mg)-Dissolved			106.6		%		80-120	17-JUL-12
WG1508985-3	DUP	L1176380-1						
Calcium (Ca)-Dissolved		38.3	39.2		mg/L	2.3	20	17-JUL-12
Magnesium (Mg)-Dissolved		10.9	11.0		mg/L	1.1	20	17-JUL-12
WG1508985-6	DUP	L1175999-2						
Calcium (Ca)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	17-JUL-12
Magnesium (Mg)-Dissolved		<0.10	<0.10	RPD-NA	mg/L	N/A	20	17-JUL-12
WG1508985-7	DUP	L1177042-18						
Calcium (Ca)-Dissolved		29.7	29.5		mg/L	0.5	20	17-JUL-12
Magnesium (Mg)-Dissolved		5.34	5.18		mg/L	3.1	20	17-JUL-12
WG1508985-1	MB							
Calcium (Ca)-Dissolved			<0.50		mg/L		0.5	17-JUL-12
Magnesium (Mg)-Dissolved			<0.10		mg/L		0.1	17-JUL-12



Quality Control Report

Workorder: L1175954

Report Date: 19-JUL-12

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: D Vokey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-L-ICP-ED		Water						
Batch	R2399840							
WG1509151-2	LCS							
Calcium (Ca)-Total			93.1		%		80-120	17-JUL-12
Iron (Fe)-Total			96.1		%		80-120	17-JUL-12
Magnesium (Mg)-Total			89.8		%		80-120	17-JUL-12
Manganese (Mn)-Total			93.9		%		80-120	17-JUL-12
Potassium (K)-Total			84.1		%		80-120	17-JUL-12
Sodium (Na)-Total			90.2		%		80-120	17-JUL-12
WG1509135-1	MB							
Calcium (Ca)-Total			<0.50		mg/L		0.5	18-JUL-12
Iron (Fe)-Total			<0.010		mg/L		0.01	18-JUL-12
Magnesium (Mg)-Total			<0.10		mg/L		0.1	18-JUL-12
Manganese (Mn)-Total			<0.0020		mg/L		0.002	18-JUL-12
Sodium (Na)-Total			<1.0		mg/L		1	18-JUL-12
WG1509151-1	MB							
Calcium (Ca)-Total			<0.50		mg/L		0.5	17-JUL-12
Iron (Fe)-Total			0.015	B	mg/L		0.01	17-JUL-12
Magnesium (Mg)-Total			<0.10		mg/L		0.1	17-JUL-12
Manganese (Mn)-Total			<0.0020		mg/L		0.002	17-JUL-12
Potassium (K)-Total			<0.10		mg/L		0.1	17-JUL-12
Sodium (Na)-Total			<1.0		mg/L		1	17-JUL-12
MET-T-L-MS-ED		Water						
Batch	R2399696							
WG1509151-2	LCS							
Aluminum (Al)-Total			101.7		%		80-120	17-JUL-12
Antimony (Sb)-Total			103.2		%		80-120	17-JUL-12
Arsenic (As)-Total			99.5		%		80-120	17-JUL-12
Barium (Ba)-Total			99.2		%		80-120	17-JUL-12
Beryllium (Be)-Total			100.7		%		80-120	17-JUL-12
Boron (B)-Total			97.5		%		80-120	17-JUL-12
Cadmium (Cd)-Total			103.6		%		80-120	17-JUL-12
Chromium (Cr)-Total			99.7		%		80-120	17-JUL-12
Cobalt (Co)-Total			100.0		%		80-120	17-JUL-12
Copper (Cu)-Total			99.2		%		80-120	17-JUL-12
Lead (Pb)-Total			102.8		%		80-120	17-JUL-12
Lithium (Li)-Total			96.2		%		80-120	17-JUL-12



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Workorder: L1175954

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: D Vokey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-L-MS-ED		Water						
Batch	R2399696							
WG1509151-1 MB								
Aluminum (Al)-Total			<0.010		mg/L		0.01	17-JUL-12
Antimony (Sb)-Total			<0.00040		mg/L		0.0004	17-JUL-12
Arsenic (As)-Total			<0.00040		mg/L		0.0004	17-JUL-12
Barium (Ba)-Total			<0.00020		mg/L		0.0002	17-JUL-12
Beryllium (Be)-Total			<0.0010		mg/L		0.001	17-JUL-12
Boron (B)-Total			<0.0040		mg/L		0.004	17-JUL-12
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	17-JUL-12
Chromium (Cr)-Total			<0.00080		mg/L		0.0008	17-JUL-12
Cobalt (Co)-Total			<0.00020		mg/L		0.0002	17-JUL-12
Copper (Cu)-Total			<0.0010		mg/L		0.001	17-JUL-12
Lead (Pb)-Total			<0.00010		mg/L		0.0001	17-JUL-12
Lithium (Li)-Total			<0.0060		mg/L		0.006	17-JUL-12
Molybdenum (Mo)-Total			<0.00010		mg/L		0.0001	17-JUL-12
Nickel (Ni)-Total			<0.00020		mg/L		0.0002	17-JUL-12
Selenium (Se)-Total			<0.00040		mg/L		0.0004	17-JUL-12
Silver (Ag)-Total			<0.00010		mg/L		0.0001	17-JUL-12
Thallium (Tl)-Total			<0.00010		mg/L		0.0001	17-JUL-12
Tin (Sn)-Total			<0.00040		mg/L		0.0004	17-JUL-12
Titanium (Ti)-Total			<0.00060		mg/L		0.0006	17-JUL-12
Uranium (U)-Total			<0.00010		mg/L		0.0001	17-JUL-12
Vanadium (V)-Total			<0.00050		mg/L		0.0005	17-JUL-12
Zinc (Zn)-Total			<0.0040		mg/L		0.004	17-JUL-12
NH3-CFA-ED		Water						
Batch	R2398944							
WG1508151-4 DUP		L1174615-24						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JUL-12
WG1508151-7 DUP		L1177650-1						
Ammonia, Total (as N)		0.083	0.081		mg/L	1.6	20	16-JUL-12
WG1508151-8 DUP		L1177473-4						
Ammonia, Total (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-JUL-12
WG1508151-9 DUP		L1178544-1						
Ammonia, Total (as N)		0.329	0.322		mg/L	2.2	20	16-JUL-12
WG1508151-2 LCS								
Ammonia, Total (as N)			98.8		%		85-115	16-JUL-12
WG1508151-1 MB								



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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: D Vokey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-CFA-ED		Water						
Batch	R2398944							
WG1508151-1 MB								
Ammonia, Total (as N)			<0.050		mg/L		0.05	16-JUL-12
WG1508151-10 MS		L1177823-10						
Ammonia, Total (as N)			104.3		%		75-125	16-JUL-12
WG1508151-3 MS		L1174642-6						
Ammonia, Total (as N)			100.9		%		75-125	16-JUL-12
WG1508151-5 MS		L1177073-9						
Ammonia, Total (as N)			101.3		%		75-125	16-JUL-12
NO2-IC-ED		Water						
Batch	R2399054							
WG1507692-3 DUP		L1177067-1						
Nitrite (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	13-JUL-12
WG1507692-2 LCS								
Nitrite (as N)			97.9		%		85-115	13-JUL-12
WG1507692-1 MB								
Nitrite (as N)			<0.050		mg/L		0.05	13-JUL-12
WG1507692-4 MS		L1177067-1						
Nitrite (as N)			84.5		%		75-125	13-JUL-12
WG1507692-8 MS		L1176936-11						
Nitrite (as N)			83.7		%		75-125	13-JUL-12
NO3-IC-ED		Water						
Batch	R2399054							
WG1507692-3 DUP		L1177067-1						
Nitrate (as N)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	13-JUL-12
WG1507692-2 LCS								
Nitrate (as N)			98.0		%		85-115	13-JUL-12
WG1507692-1 MB								
Nitrate (as N)			<0.050		mg/L		0.05	13-JUL-12
WG1507692-4 MS		L1177067-1						
Nitrate (as N)			85.1		%		75-125	13-JUL-12
WG1507692-8 MS		L1176936-11						
Nitrate (as N)			84.4		%		75-125	13-JUL-12
OGG-LLE-ED		Water						
Batch	R2398597							
WG1507976-2 LCS								
Oil and Grease			97.0		%		50-150	15-JUL-12
WG1507976-1 MB								



Environmental

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Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

Contact: D Vokey

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TOTSUS-ED								
Water								
Batch	R2398689							
WG1507025-2	LCS							
Total Suspended Solids			92.0		%		85-115	13-JUL-12
WG1507025-1	MB							
Total Suspended Solids			<3.0		mg/L		3	13-JUL-12
TKN-CFA-ED								
Water								
Batch	R2399378							
WG1508137-6	DUP	L1176196-1						
Total Kjeldahl Nitrogen		1.85	1.85	J	mg/L	0.00	20	17-JUL-12
WG1508137-2	LCS							
Total Kjeldahl Nitrogen			99.6		mg/L		75-125	17-JUL-12
WG1508137-3	LCS							
Total Kjeldahl Nitrogen			114		mg/L		75-125	17-JUL-12
WG1508137-4	LCS							
Total Kjeldahl Nitrogen			104		mg/L		75-125	17-JUL-12
WG1508137-1	MB							
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	17-JUL-12

Quality Control Report

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201 - 750 West Pender Street
VANCOUVER BC V6C 2T7

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Contact: D Vokey

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L1175954

Report Date: 19-JUL-12

Client: LUPIN MINES INCORPORATED
201 - 750 West Pender Street
VANCOUVER BC V6C 2T7
Contact: D Vokey

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH	1	10-JUL-12 09:45	14-JUL-12 07:48	0.25	94	hours	EHTR-FM
	2	10-JUL-12 10:15	14-JUL-12 07:55	0.25	94	hours	EHTR-FM
Leachable Anions & Nutrients							
Diss. Orthophosphate in Water by Colour	2	10-JUL-12 10:15	13-JUL-12 15:59	48	78	hours	EHT
Anions and Nutrients							
Nitrate as N by IC	2	10-JUL-12 10:15	13-JUL-12 08:00	48	70	hours	EHT
Nitrite as N by IC	2	10-JUL-12 10:15	13-JUL-12 08:00	48	70	hours	EHT
Aggregate Organics							
Biochemical Oxygen Demand (BOD)	2	10-JUL-12 10:15	13-JUL-12 12:41	48	74	hours	EHT
	3	10-JUL-12 10:15	13-JUL-12 12:41	48	74	hours	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1175954 were received on 10-JUL-12 16:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120483

- FINAL REPORT -

Prepared For: ALS Environmental

Address: P.O. Box 2801
Yellowknife, NT
X1A 2R1

Attn: Judy Bethune

Facsimile:

Final report has been reviewed and approved by:

Helene Harper
Manager

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
 - o Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
 - o Environment Canada
 - o USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Tuesday, July 17, 2012

Print Date: Tuesday, July 17, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120483

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **L1175954-01 Lup-01-2012-07-10**

Taiga Sample ID: **001**

Client Project:

Sample Type: Water

Received Date: 10-Jul-12

Sampling Date: 10-Jul-12

Sampling Time: 9:45

Location:

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Microbiology</u>						
Coliforms, Fecal	< 1	1	CFU/100mL	11-Jul-12	SM9222:D	

ReportDate: Tuesday, July 17, 2012

Print Date: Tuesday, July 17, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120483

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **L1175954-02 Lup-14-2012-07-10**

Taiga Sample ID: **002**

Client Project:

Sample Type: Water

Received Date: 10-Jul-12

Sampling Date: 10-Jul-12

Sampling Time: 10:15

Location:

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Microbiology</u>						
Coliforms, Fecal	< 1	1	CFU/100mL	11-Jul-12	SM9222:D	

ReportDate: Tuesday, July 17, 2012

Print Date: Tuesday, July 17, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120483

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **L1175954-03 Lup-14D-2012-07-10**

Taiga Sample ID: **003**

Client Project:

Sample Type: Water

Received Date: 10-Jul-12

Sampling Date: 10-Jul-12

Sampling Time: 10:15

Location:

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Microbiology</u>						
Coliforms, Fecal	< 1	1	CFU/100mL	11-Jul-12	SM9222:D	

ReportDate: Tuesday, July 17, 2012

Print Date: Tuesday, July 17, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120483

- CERTIFICATE OF ANALYSIS -

Client Sample ID: **L1175954-03 Lup-14D-2012-07-10**

Taiga Sample ID: **003**

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Tuesday, July 17, 2012

Print Date: Tuesday, July 17, 2012

ALS QC data 2012 (FC)

Indicates other client sample used for duplicate data

Date	TEL	ALS ID	Test	Blank Result FC/100 mL	Original FC/100 mL	Duplicate FC/100 mL	Pass/Fail	Comments
July 11/12	120483-003	L1175954-3	FC	<1	<1	<1	P	



of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

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