



ECHO BAY MINES LTD.

2000 ANNUAL REPORT LUPIN GOLD MINE



Submitted under

**WATER LICENCE NWB1LUP0008
NUNAVUT WATER BOARD**

Date: 24 March 2001
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Cover Photo: Caribou to the west of the Lupin Airstrip; June, 2000
Photo: D. Hohnstein.

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INTRODUCTION

This report is submitted to fulfil requirements under Part B, Item 5 of Water Licence NWB1LUP0008 granted by the Nunavut Water Board pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*.

The Annual Report for 2000 contains the following information that is required under Part B, Items 5(a) through (k).

- a) the monthly and annual quantity in cubic metres of water pumped from Contwoyto Lake at Station 925-01;
- b) the monthly and annual quantities in cubic metres of treated tailings effluent discharged at Station 925-10
- c) the monthly and annual quantity in cubic metres of minewater discharged at Station 925-11;
- d) the monthly and annual quantity in cubic metres of treated sewage effluent discharged at Station 925-14;
- e) tabular summaries of all data generated under the Surveillance Network Program;
- f) a summary of modifications and/or major maintenance work carried out on the water supply and the waste disposal facilities including all associated structures;
- g) a list of unauthorized discharges and follow-up action taken;
- h) revisions to the Contingency Plan;
- i) revisions to the Abandonment and Restoration Plan;
- j) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year; and
- k) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.

A. INTAKE VOLUME; Station 925-01

The quantity of fresh water pumped on a monthly basis from Contwoyto Lake is shown in Table No.1, 2000 Pumping Report. The yearly total was 656,715 m³ as determined by flowmeter. Of this volume, 578,297 m³ was used for industrial purposes with the remaining 78,418 m³ being used as potable water.

The volume of water being obtained from Contwoyto Lake had been measured by two different methods during the year. In the initial months during start-up of operations water use was measured through two meters. The potable water meter as well as the excess water metered that was sent to the sewage lakes system. This excess water was the result of the minimum volume capacity of the pumps, the need for continued flow in the pipeline and maintenance of the fire protection water level within the mill raw water tank. These two meters combined to produce a total volume pumped.

In March 2000, with the initial start-up of the mill, water was again measured through the main water line coming into the mill as well as the potable water. In this way, process water use was calculated by subtracting the potable water use from the total water use. Total water use is down considerably for 2000 in comparison to previous "operational" years. This is mainly due to only nine months of production as well as the planned reduction in mill throughput. Also a significant decrease in the monthly use is probably due to the installation of a new "flow tube" for the meter on the main raw water line. This replacement was done during care and maintenance and involved replacing the section of pipe that is critical for smooth, accurate flow measurements. During care and maintenance, the previous flow tube was found to be corroded and scaled internally to a point where the flow measurement would have been much higher than actual due to the increased velocity of the water within the restricted pipe diameter.

B. TAILINGS EFFLUENT; Station 925-10

Discharge of tailings effluent from Pond 2 (station 925-10) took place between July 15, 2000 and September 2, 2000. A daily flow chart is included within the appendix and summarizes all information collected during the syphon operation at Dam 1a. The total volume of water released from the TCA in 2000 was 2,7,01,360 m³. The flow for the month of July was 1,016,400 m³ with an average daily flow of 63,525 m³. The flow for the month of August was 1,633,528 m³ with an average daily flow of 52,694 m³ (this includes the first two days of September).

Pond No.1 syphons were operated intermittently during the discharge of water from Pond No.2 in order to release discharge quality water from Pond No.1. The total volume of water transferred from Pond No.1 in 2000 was approximately 524,000 m³.

A survey of the TCA water elevations was completed on September 3, 2000 which determined the end of the season water level in Pond No.2 to be 481.044 metres. This provides approximately 4 m of freeboard on the lowest elevation dam (Dam 1b). Taking into account the estimated annual average input from precipitation and water transfer from Pond No.1 to Pond No.2 (approximately 1.5 m in elevation per year), there is a further 24 months capacity remaining within the final pond, allowing a minimum 1 metre freeboard on all the dams. During operations, discharge of Pond No.2 to the environment occurs prior to transfer of Pond No.1, therefore a minimum of 3 metres of freeboard will be available prior to decant in 2001 or alternatively (if water is held) a minimum of 2 metres of freeboard in 2002.

C. MINEWATER; Station 925-11

The monthly and annual quantity of water pumped from the mine is included in Table 1. All minewater in 2000 was directed to the lower sewage lake.

The total quantity of water pumped from underground to the second sewage lake in 2000 was 47,433 m³.

D. SEWAGE EFFLUENT; Station 925-14

The monthly and annual quantity of sewage effluent discharged to the environment from the second sewage lake at Station 925-14 is listed in Table No.1. Total flow for the seasonal discharge was approximately 158,633 m³. The discharge volume is calculated from hydraulic tables for flow over a V-notch weir as well as an ultrasonic flow meter on the 8" syphon line.

During an Industrial Water Use Inspection on July 12, 2000 by the District Water Resources Officer, Station 925-14 was observed with flow through the decant structure's culvert. As was mentioned during the inspection, the facility is usually inspected by the mill operations or environment personnel on a weekly or more frequent basis. It was noted that there was no flow observed two days previous.

The flow was estimated (by measurement) to be approximately 15.5 usgpm and the monthly flow for July included the estimated flow prior to opening the culvert on July 17, 2000. The sewage lakes discharge continued through to September 24, 2000 when the syphon discharge line was found frozen. In late August, when the water level had dropped below the culvert, repairs were made to the culvert gate and then sealed in order to prevent a recurrence of seepage through the culvert prior to planned discharge in 2001. A second syphon line may be installed in 2001 to facilitate the drawdown of water without the use of the culvert.

E. SURVEILLANCE NETWORK PROGRAM DATA

Tabular summaries of data required under the Surveillance Network Program annexed to Water Licence NWB1LUP0008 are presented in Tables attached. Table No.1 summarizes the water use, waste disposal volumes and the monthly ore milled, recorded in dry tonnes. The additional tables summarize the water quality data collected at stations 925-01, 925-14, 925-10 as well as the downstream stations 925-20, 925-21, 925-22, 925-24 and 925-25. Quality control samples obtained during regular monitoring and submitted to the lab are also included in the results summary. QC data from Norwest Labs Ltd. with regard to their analytical precision is included in the appendix.

In addition to the freshwater use, mine water pumped from underground and the sewage lakes discharge volumes, the 2000 Pumping Report includes the data for waste discharged to the tailings pond. These are calculated figures obtained from the mill daily statistics report and includes the amount of ore milled (tonnes), calculated volume of solids used in backfill for underground and total waste (separated to show the fraction of solution and solids) discharged to the tailings area..

F. MAINTENANCE WORK

Minimal modification and routine maintenance work was carried out on the water supply and sewage disposal facilities in 2000. Repairs to the gated culvert on the No.2 Sewage Lake discharge were required due to leakage prior to initiating discharge. This is the second year that required repairs to the structure and if needed again in 2001 then a more permanent solution will be investigated.

Mdam Modifications

Modifications were carried out on the divider dyke referred to as Mdam on the "Lupin Mine Tailings Area" drawing included in this report. This structure was originally started in 1992 as a means of controlling the runoff from the tailings beach in Pond No.2. With Mdam in place, a new "Cell No.5" was created and has been used annually for fresh deposition of tailings. In 1995, additional work was carried out to enclose an area at the north end of the dyke isolating another area of older tailings.

With storage capacity being consumed through annual production of tailings, additional storage volume was required. A second lift to the original Mdam configuration was carried during August and early September of 2000. This modification added approximately two metres of height to the dam with an upstream construction method, increasing the capacity of the cell by approximately 1.5 million m³. An as-built plan drawing is included within the appendix which shows the location of the dam and three sectional drawings showing the construction method and placement of materials. It has been estimated, with proper placement

of tailings and maximum use of solids for underground backfill, that storage availability within the modified facility is sufficient for the mine plan to date.

Cell No.3 Modifications

An additional containment berm, approximately 280m in length, was placed within Cell No.3, 100m parallel to the Kdam. This berm will provide additional retention of solids and allow a sectional filling of the upper portion of the cell. It is planned to use this area only during the summer months and allow Cell No.5 time to melt and release water. It is also an initial first step to closure of Cell No.3. With the sectional infilling, smaller areas (200m x 100m) can be filled and isolated from the remaining cell for covering.

Other maintenance items completed were as follows:

- ▶ All recommended maintenance work was completed as specified in the 2000 Geotechnical Inspection of the Tailings Containment Perimeter Embankments carried out by BGC Engineering Inc. There are currently no other outstanding issues with respect to the 2000 or previous geotechnical inspections.

G. LIST OF UNAUTHORIZED DISCHARGES

There were no unauthorized discharges during 2000 under Water Licence NWB1LUP0008 (N7L2-0925).

H. REVISIONS TO THE CONTINGENCY PLAN

A revised Contingency Plan was prepared in December and submitted for Board approval by letter, December 22, 2000. No further revisions are foreseen at this time.

I. REVISIONS TO THE ABANDONMENT AND RESTORATION PLAN

Revisions to the Abandonment and Restoration Plan are being prepared separately with respect to Part I, Item 1 of the Water Licence.

J. SUMMARY OF ABANDONMENT AND RESTORATION ACTIVITIES**2000 Abandonment and Restoration Activities**

During 2000, a program to replace thermistors in the perimeter dams and within the covered tailings was initiated. In November 2000, BGC Engineering Inc. was on site to install a total of nine thermistors. A report has been prepared entitled "Thermistor Installation Program; Dam1a, Dam2, Mdam, Cell 1 and Esker". This report is included for general information. Installations were to be made in Dam1a, Dam2, Mdam, Cell 1 covered tailings (within a area covered with an additional one metre of esker in 2000) and in the Fingers Lake esker which is used extensively for construction within the TCA. The esker location was chosen because of questions raised at the Licence Public Hearing regarding the actual thermal performance of the esker material in place at the source. The thermistor was installed through approximately 12 metres of esker sand/till and 3 metres of bedrock.

Due to problems associated with the drilling and maintaining an open hole to place the thermistor string, four of the nine thermistors were not installed at this time. The readings obtained prior to preparation of the BGC report show that all strings/sensors are functioning with temperatures beginning to stabilize in the holes. This can be seen in the esker string which has a second day's data included in the report.

Other activity included the continuing collection of data from the previous thermistor strings installed during 1995 in the esker cover of Cells No.1 and No.2 as well as in Dam4. The instrumentation in the Cells is continuing to fail and unfortunately the new thermistor string planned for Cell No.1 could not be installed due to the placement of fresh esker cover and the unfrozen ground associated with it.

Planned Abandonment and Restoration Activities; 2001

- Complete the installation of thermistor strings already purchased for the Dams 1a and 2, Mdam and Cell No.1.
- Continue to monitor the thermistor strings installed in the esker cover of Cells 1 and 2, Dam4 and new strings to further the background information of the characteristics of the active thaw zone in natural esker, constructed dams and covered tailings.
- Reclamation of Centre Zone Crown Pillar - this project as described briefly in the 1999 Annual Report has been put on hold for 2001 due to commitments in other areas of the underground operations.

K. ANY OTHER DETAILS ON WATER USE OR WASTE DISPOSAL REQUESTED BY THE BOARD BY NOVEMBER 1st OF THE YEAR BEING REPORTED

South Basin Sampling; Follow-up to Spill No.92-105

During the Water Licence Public hearing held in Kugluktuk, Nunavut, there was a request from Environmental Protection (Environment Canada) and Fisheries and Oceans to provide information on follow-up monitoring that has been done with reference to Spill No.92-105. The data that has been collected since the spill (1992) has been compiled and the data interpreted in graphical form. The graphs have been compiled from data collected annually since 1992. This information is provided within the Appendix.

The information has been presented with the x axis indicating a sample period rather than a period of time. This was done because of the amount of information available in 1992 in comparison to the remainder of the study period. When the graphed data included that of 1992, it made it hard to differentiate dates during 1992 and the individual bars for the remainder of the period were spread apart looking like data was missing.

Other points to note regarding the graph presentation is that not all graphs are plotted with an identical y axis scale. The also graphs differ in scale depending on the parameter as well as between sample stations (ie; the scale for arsenic at Station 2 is considerably larger than that for arsenic at Station 5). There are also five of the ten cyanide graphs which use a logarithmic base scale for the y axis due to the significant difference between the initial samples obtained in 1992 and the values obtained in the following years.

Sampling frequency over the time period is also variable depending on the station involved. The following should be noted:

- Station 1 was only sampled in 1992 with one follow-up sample obtained in 1997.
- Station 2 and Station 5 have been sampled annually since 1992.
- Station 3 was sampled annually until 1996.
- Station 4 and Station 6 were sampled annually until 1997.
- Station 7 was not sampled after 1992.
- Station 8 was sampled in 1992, 1993 and in 1994.

- Station 9 was sampled annually until 1997 with the exception of 1996.
- The Long Lake sampling took place annually until 1997 and at various times of the year, including from beneath the ice in winter and early spring.

Several general observations can be made through interpretation of the data presented. The contaminant concentrations at all stations decreased considerably throughout the sampling in 1992 with a slight increase into September. The most significant upward change occurred with nickel at Station 3, which increased from a low of 0.012 mg/L to 0.028 mg./L during the later part of the year. This, along with other increases at various stations, could be the result of significant rainfall events that occur frequently in later August/September. This would resuspend some contamination from surrounding tundra and bring it into the drainage stream.

Other events of a similar nature are seen as a notable increase in the concentration levels, followed by a year returning to the low levels previously observed. For example, the arsenic concentrations at Stations 3,4 and 5 increased in 1993 and 1994, then returned to levels near or below those recorded during the summer of 1992.

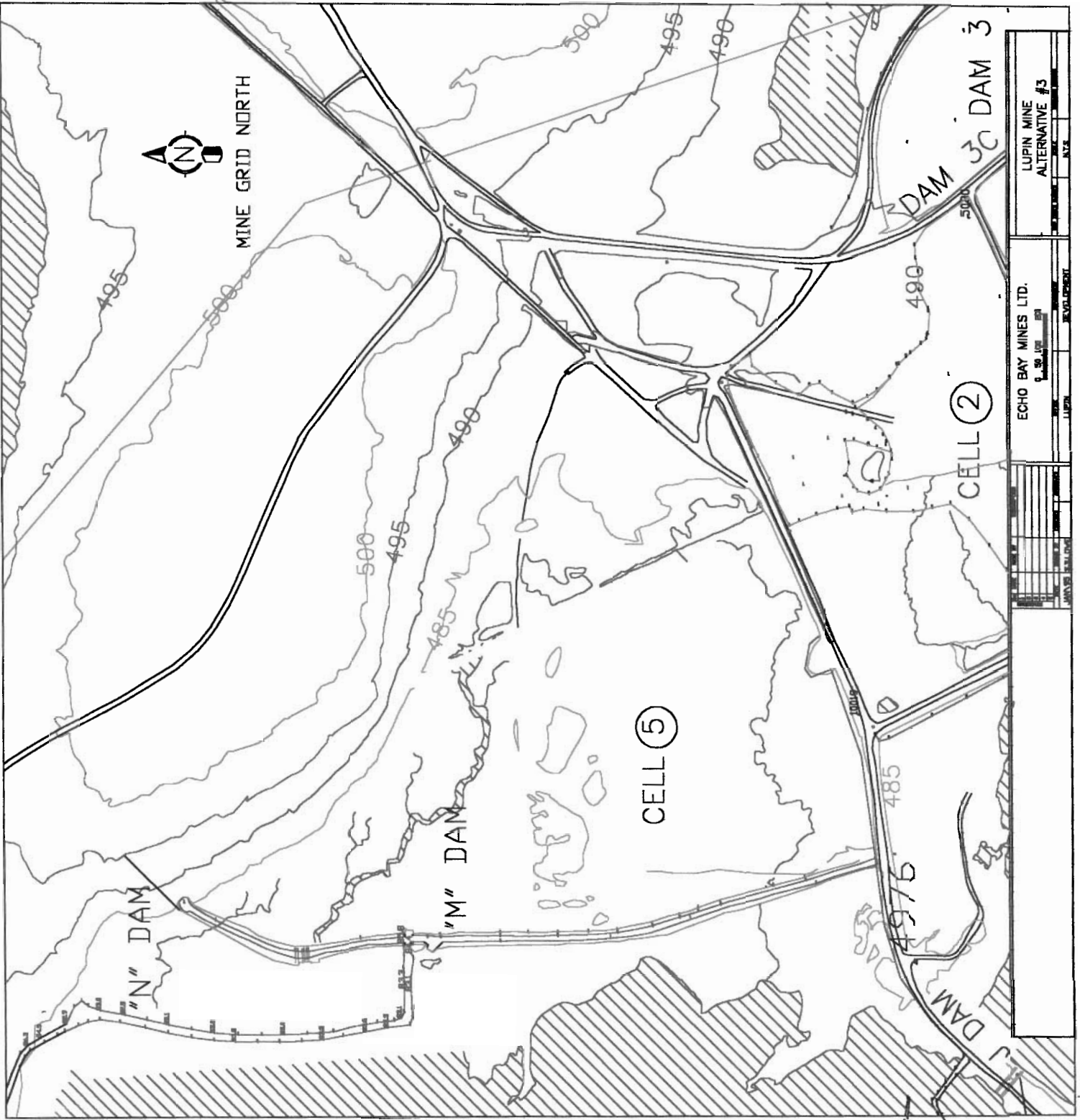
The Long Lake samples, over the period 1992 through 1997, have shown some increased levels of contaminants. These appear to be associated with samples obtained from beneath the ice during the late winter when the ice is thick. There is also some inconsistency in the parameters showing an increase. In 1995, several samples were obtained over the winter period with spikes in concentration levels occurring in March and April. Not all metals showed a spike at the same time suggesting that the amount of contaminant might be associated with the slight decrease in pH towards April, taking advantage of different solubilities of the individual metals. The pH of the samples obtained from Long Lake varied over the time period with a high of 7.4 and low of 5.6.

In contrast to the variable results obtained from Long Lake (at different times of the year), the samples obtained from Station 2 (outlet of Long Lake) have shown a continual decrease in concentration since follow-up sampling began in 1993. Nickel is the exception at this station, which had an historical low of 0.003 mg/L in 1996 and has range between 0.010 and 0.015 mg/L during 1997-2000. The recorded pH in 2000 was at an historical low at 4.62. This value was not confirmed with follow-up sampling. The pH at other drainage point stations (ie; Station 5) has been steady over the past monitoring period, ranging between about 5 and 6. An occasional sample has indicated a slightly higher/lower value than these figures.

Other than the above, Echo Bay Mines Ltd. did not receive requests from the Board prior to November 1, 2000 for additional information to be included in the annual report.

TABLES, FIGURES and PHOTOS





ECHO BAY MINES LTD.

LUPIN MINE
ALTERNATIVE #3

0 50 100 200

1:25,000

DATE: 11/28/01

BY: J. B. BROWN



EQ. No.:

"M" Dam
After Construction 2000
As built

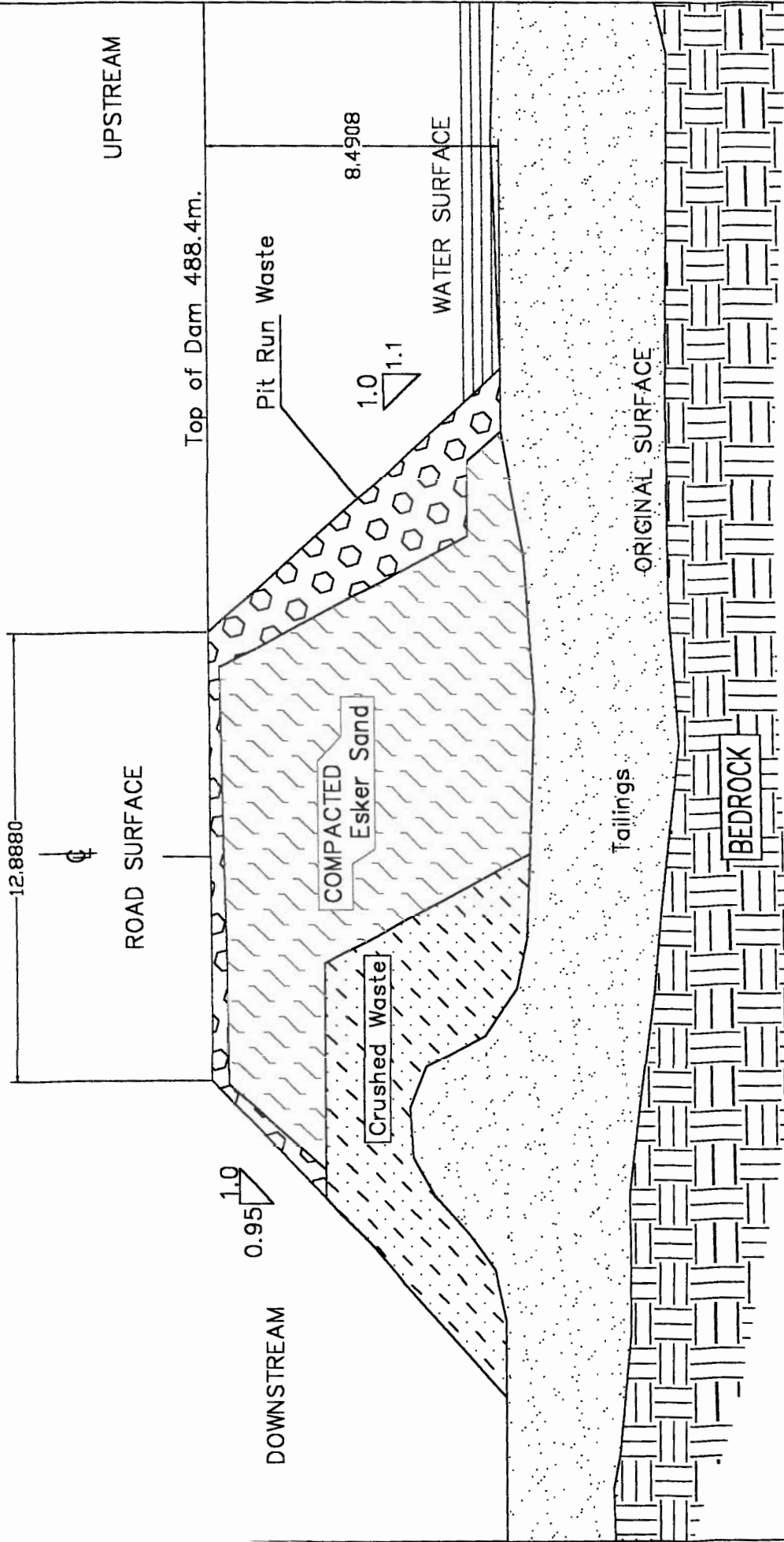
DEPARTMENT: Loss Control
PROJECT: "M" Dam
LOCATION: Tailings

ECHO BAY MINES LTD

DESIGNED BY: abj
DRAWN BY: abj
CHECKED BY:
DATE: 9/13/00
APPROVED BY:

REV.	ISSUED FOR	APP.	DATE	REV. DESCRIPTION
0	As Built		9/13/00	

PROJ. No.	DRAWING No.	LOOP No.	REV.
	MDam00Fin.dwg		0



"M" Dam, Tailings Section Section A - A1

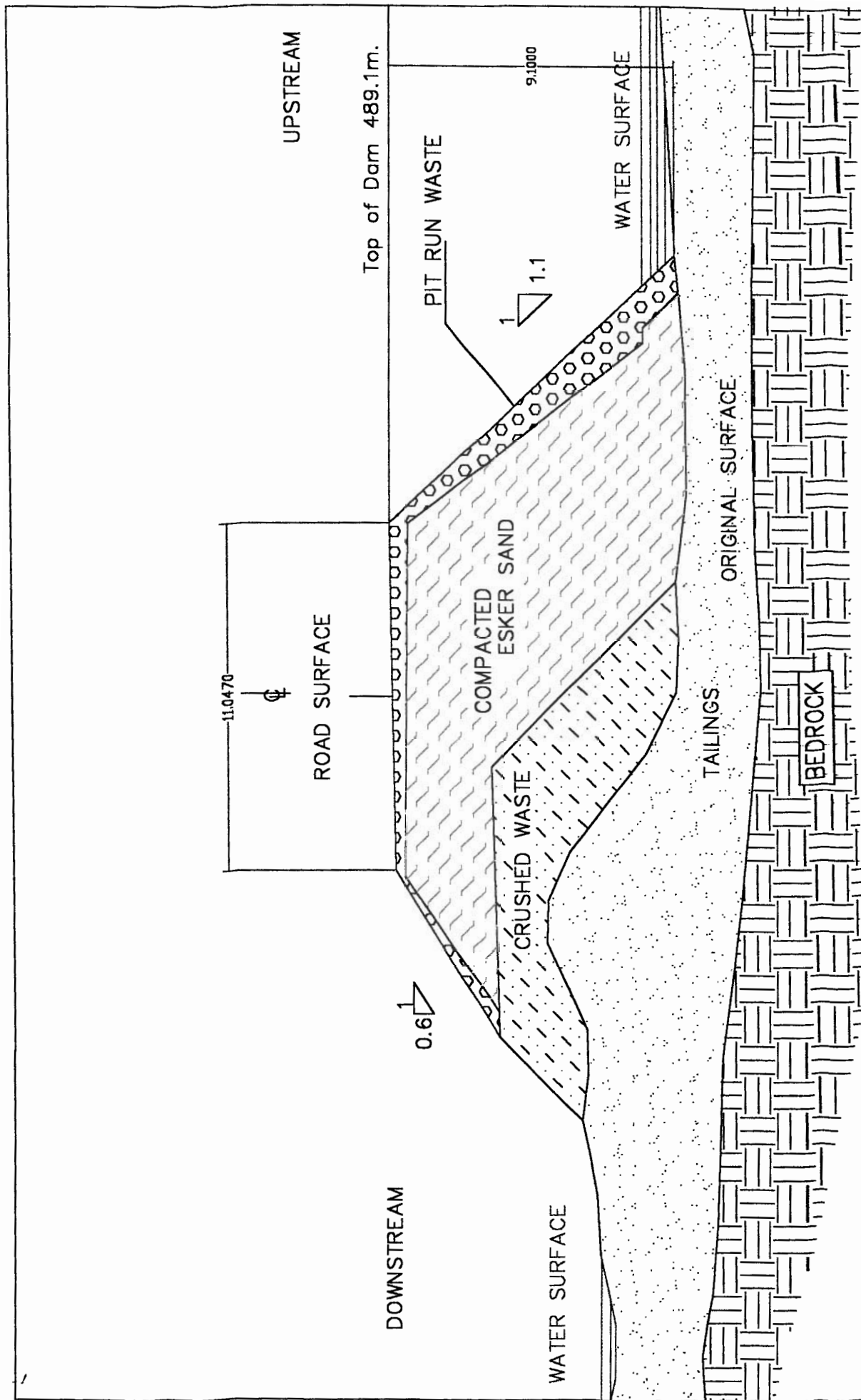
ECHO BAY MINES LTD
LUPIN GOLD MINE
LUPIN, NUNAVUT

Not to Scale

Section Facing Northward

September 13, 2000

M-DamSec-A1.dwg



"M" DAM TAILINGS SECTION

SECTION B - B1

ECHO BAY MINES LTD
LUPIN GOLD MINE
LUPIN, NUNAVUT

Section Facing Northward

Not to Scale

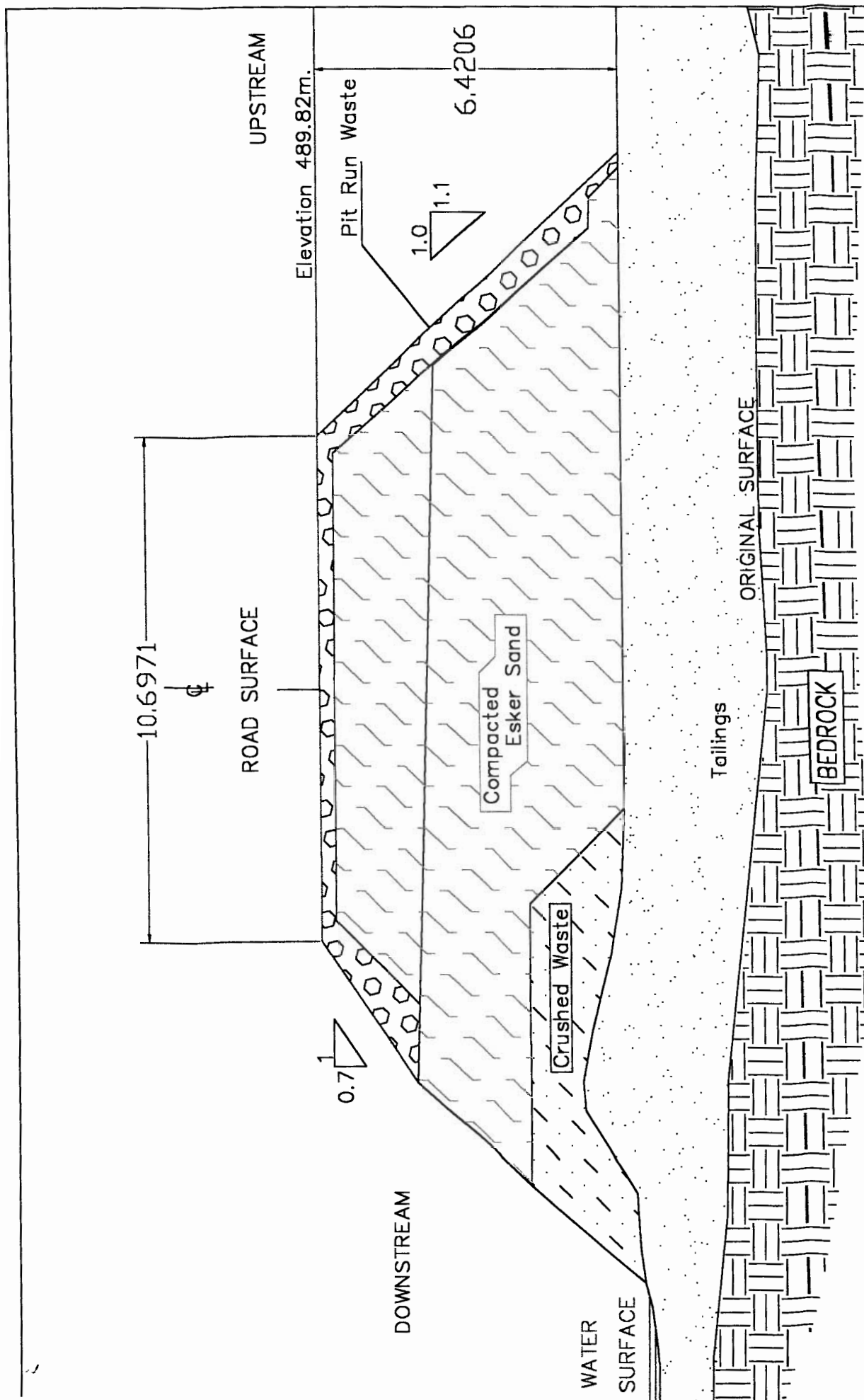
September 12, 2000

M-JAMSEC-B-DWG

Photo No.1 Lupin Tailings Containment Area - Mdam construction; August 2000



Photo No.2 Lupin Tailings Containment Area - Mdam construction; September 2000



"M" Dam Tailings Section Section C - C1 Section Facing Northward

ECHO BAY MINES LTD
 LUPIN GOLD MINE
 LUPIN, NUNAVUT

Not to Scale

September 13, 2000

M-JonSec-C.dwg

APPENDIX A

Pumping Report and SNP Data

2000 PUMPING REPORT (CUBIC METERS)*

TABLE NO.1

MONTH	FRESHWATER FROM CONTWOYT LAKE (METERED)			WASTE DISCHARGED TO TAILINGS POND (CALCULATED)			ORE Milled TONNES	BACKFILL SOLIDS	MINERWATER (METERED)
	TOTAL	PROCESS	POTABLE	TOTAL	SOLUTION	SOLIDS			
JANUARY	6,910	2,419	4,491 *	N/A	N/A	0	0	0	4,605
FEBRUARY	6,447	1,954	4,493	N/A	N/A	0	0	0	7,181
MARCH	12,323	6,822	5,501	6,511	4,962	1,550	3,409	0	4,434
APRIL	51,247	46,379	4,868	79,809	57,370	22,439	55,448	2,765	2,225
MAY	73,439	66,971	6,468	78,611	60,714	17,897	52,992	6,190	4,015
JUNE	69,902	63,216	6,686	79,306	60,620	18,686	51,198	4,586	3,996
JULY	74,253	66,712	7,541	78,790	61,855	16,934	52,125	6,759	4,131
AUGUST	74,640	67,279	7,361	80,109	61,024	19,085	53,082	5,043	3,777
SEPTEMBER	72,188	64,664	7,524	73,177	57,276	15,901	43,842	4,027	2,626
OCTOBER	73,641	66,093	7,548	78,621	60,202	18,419	52,382	5,392	3,622
NOVEMBER	71,452	63,522	7,930	74,458	56,837	17,622	50,742	5,443	3,095
DECEMBER	70,273	62,266	8,007	83,631	63,487	20,143	52,475	3,709	3,726
TOTAL (m³)	656,715	578,297	78,418	713,022	544,347	168,675	467,697 t	43,914	47,433
									158,633

*ore milled reported in tonnes

Monthly SNP Report
July, 2000

*D-Daily	*W-Weekly	*M-Monthly	Routine Analysis				Total	Total	Total Metals (mg/L)							
Log No.	Date	Station	Temp(C)	pH	Cond (us)	TSS (mg/L)	As (mg/L)	CN (mg/L)	Zn	Cu	Pb	Ni	Cd	Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20007	11-May-00	925-01	3.5	6.75	14.7	<1	0.0011		0.0047	0.001	<0.002	<0.001	<0.0006			
20020	08-Jul-00	W 925-22	No Temp	6.99	---	2.0	0.0011	0.001	0.0062	0.002	0.006	0.002	<0.0006	6	0.40	4.9
20023	08-Jul-00	W 925-24	No Temp	6.63	11.7	<1	0.0010	0.001	0.0022	0.002	<0.002	<0.001	<0.0006	<5	<0.05	4.0
20024	08-Jul-00	W 925-25	No Temp	6.56	11.5	<1	0.0010	0.001	0.0081	0.002	0.002	<0.001	<0.0006	<5	0.53	3.8
20027	15-Jul-00	W 925-22	12.9	7.18	10.9	0.4	0.0005	0.002	0.0040	0.002	<0.002	<0.001	<0.0006	<5	0.10	3.6
20028	15-Jul-00	W 925-24	9.6	6.85	9.4	0.4	0.0007	<0.002	0.0029	<0.001	<0.002	0.001	<0.0006	<5	0.35	3.5
20029	15-Jul-00	W 925-25	8.4	6.78	8.3	0.2	0.0006	<0.002	0.0029	<0.001	<0.002	0.001	<0.0006	<5	0.26	3.4
20030	15-Jul-00	D 925-10	No Temp	7.27	932	0.6	0.0061	0.016	0.239	0.003	<0.002	0.103	<0.0006	10	4.57	227
20031	16-Jul-00	D 925-10	14.4	7.29	938	0.7	0.0053	0.016	0.253	0.005	<0.002	0.110	<0.0006	11	4.00	---
20034	17-Jul-00	W 925-10	11.8	7.18	936	0.6	0.0062	0.024	0.241	0.006	<0.002	0.104	<0.0006	10	3.86	230
20035	17-Jul-00	M 925-14	14.8	6.33	2080	1.5	0.0106	0.016	0.138	0.005	<0.002	0.030	0.0058	<5	0.64	469
20036	18-Jul-00	D 925-10	14.8	7.27	936	0.2	0.0055	0.014	0.244	0.007	---	---	---	---	---	---
20037	19-Jul-00	D 925-10	14.9	6.92	984	0.7	0.0054	0.014	0.243	0.007	---	---	---	---	---	---
20042	20-Jul-00	D 925-10	15.3	7.08	979	0.4	0.0051	0.014	0.242	0.008	---	---	---	---	---	---
20043	21-Jul-00	D 925-10	15.9	7.06	974	0.6	0.0058	0.016	0.243	0.006	---	---	---	---	---	---
20045	22-Jul-00	D 925-10	16.3	7.14	987	0.5	0.0050	0.012	0.258	0.007	---	---	---	---	---	---
20046	22-Jul-00	W 925-20	18.8	6.11	910	0.7	0.0031	0.008	0.174	0.006	<0.002	0.105	<0.0006	6	3.33	230
20047	22-Jul-00	W 925-21	19.2	6.63	10	0.4	0.0004	<0.002	0.0011	0.002	0.002	0.001	<0.0006	<5	0.46	4.7
20048	22-Jul-00	W 925-22	18.2	6.55	216	0.7	0.0011	<0.002	0.0367	0.003	<0.002	0.022	<0.0006	<5	0.86	53
20049	22-Jul-00	W 925-24	14.1	6.64	23.2	0.1	0.0008	<0.002	0.0041	0.003	<0.002	0.002	<0.0006	<5	0.76	7.0
20050	22-Jul-00	W 925-25	9.9	6.68	11.5	0.6	0.0006	<0.002	0.0029	0.003	<0.002	0.002	<0.0006	<5	0.41	2.6
20052	23-Jul-00	D 925-10	16.7	7.20	972	0.3	0.0053	0.016	0.255	0.007	---	---	---	---	---	---
20053	24-Jul-00	W 925-10	17.2	7.00	924	0.4	0.0055	0.014	0.252	0.007	<0.002	0.109	<0.0006	10	3.84	234
20058	25-Jul-00	D 925-10	17.2	7.17	960	0.3	0.0052	0.032	0.290	0.008	---	---	---	---	---	---
20059	26-Jul-00	D 925-10	17.7	7.19	940	0.9	0.0050	0.028	0.253	0.009	---	---	---	---	---	---
20062	27-Jul-00	D 925-10	17.9	7.19	964	0.6	0.0045	0.028	0.247	0.007	---	---	---	---	---	---
20063	28-Jul-00	D 925-10	18.1	7.26	954	1.1	0.0045	0.012	0.256	0.007	---	---	---	---	---	---
20064	29-Jul-00	D 925-10	17.7	7.25	911	0.5	0.0032	0.012	0.255	0.005	---	---	---	---	---	---
20065	29-Jul-00	W 925-20	19.7	6.25	907	0.4	0.0027	0.008	0.224	0.003	<0.002	0.122	<0.0006	<5	2.68	236
20066	29-Jul-00	W 925-21	19.8	6.85	11	0.2	0.0008	0.002	0.0009	<0.001	<0.002	<0.001	<0.0006	<5	<0.05	4.1
20067	29-Jul-00	W 925-22	18.4	6.67	227	0.4	0.0012	0.006	0.0358	<0.001	<0.002	0.023	<0.0006	<5	0.66	53
20070	29-Jul-00	W 925-24	12.3	6.83	98	0.3	0.0006	0.002	0.0076	<0.001	<0.002	0.003	<0.0006	<5	0.07	7.5
20071	29-Jul-00	W 925-25	9.4	6.87	16.5	0.8	0.0006	0.002	0.0076	0.001	<0.002	0.002	<0.0006	7	<0.05	4.8
20073	30-Jul-00	D 925-10	18.3	7.20	968	0.5	0.0041	0.016	0.303	0.007	---	---	---	---	---	---
20074	31-Jul-00	W 925-10	17.8	7.22	945	1.2	0.0039	0.012	0.255	0.007	0.021	0.113	<0.0006	8	4.00	232

Log No.	Date	Station	Total Nitrate	Total N	Total Nitrite	Total OrthoP	Total Phos.	Faecal Coliform	G/O Sheen	BOD	Comment
20007	11-May-00	925-01						<1			Hg = <0.0001
20035	17-Jul-00	M 925-14	0.05	1.35	<0.006	0.07	0.05	2	No	<1	NO2 & NO3 were analyzed together.

Quality Control

Log No.	Date	Station	Temp(C)	pH	Cond (us)	TSS (mg/L)	As (mg/L)	CN (mg/L)	Total Metals (mg/L)					Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20020	08-Jul-00	W 925-22	No Temp	6.99	---	2.0	0.0011	0.001	0.0062	0.002	0.006	0.002	<0.0006	6	0.40	5.3
20021	08-Jul-00	W 925-22-2	No Temp	6.68	13.3	1.0	0.0009	0.001	0.0024	0.002	<0.002	0.001	<0.0006	<5	0.10	4.9
20022	08-Jul-00	W 925-22-3	No Temp	6.66	13.2	1.0	0.0011	0.001	0.0037	0.002	<0.002	<0.001	<0.0006	<5	0.15	4.8
---	15-Jul-00	W Fld. Blk.	---	---	---	---	<0.0002	<0.002	0.003	0.003	<0.002	<0.001	<0.0006	---	---	---
20031	16-Jul-00	W 925-10	14.4	7.29	938.0	0.7	0.0053	0.016	0.253	0.005	<0.002	0.110	<0.0006	11	4.00	227
20032	16-Jul-00	W 925-10-2	14.4	7.20	936.0	0.4	0.0060	0.018	0.266	0.006	<0.002	0.113	<0.0006	12	3.92	227
20033	16-Jul-00	W 925-10-3	14.4	7.23	936.0	0.5	0.0061	0.022	0.239	0.005	<0.002	0.104	<0.0006	12	3.04	229
20051	22-Jul-00	W Fld. Blk.	---	---	---	---	<0.0002	<0.002	0.0033	0.005	<0.002	<0.001	<0.0006	---	0.37	---
20053	24-Jul-00	W 925-10	17.2	7.00	924.0	0.4	0.0055	0.014	0.252	0.007	<0.002	0.109	<0.0006	10	3.84	234
20054	24-Jul-00	W 925-10-2	17.2	6.88	926.0	0.3	0.0052	0.016	0.250	0.007	<0.002	0.108	<0.0006	13	3.73	235
20055	24-Jul-00	W 925-10-3	17.2	6.89	929.0	0.6	0.0047	0.016	0.246	0.007	<0.002	0.105	<0.0006	10	3.89	243
20067	29-Jul-00	W 925-22	18.4	6.67	227.0	0.4	0.0012	0.006	0.0358	<0.001	<0.002	0.023	<0.0006	<5	0.66	53
20068	29-Jul-00	W 925-22-2	18.4	6.69	225.0	0.1	0.0009	0.006	0.0361	<0.001	<0.002	0.023	<0.0006	<5	0.63	53
20069	29-Jul-00	W 925-22-3	18.4	6.68	229.0	0.3	0.0007	0.008	0.0413	0.001	<0.002	0.023	<0.0006	<5	0.64	52
20072	29-Jul-00	W Fld. Blk.	---	---	---	---	<0.0002	0.002	0.0021	0.003	<0.002	<0.001	<0.0006	---	<0.05	---

**Monthly SNP Report
Sampling Results
August, 2000**

*D-Daily	*W-Weekly	*M-Monthly	Routine Analysis			Total	Total	Total Metals (mg/L)							
Log No.	Date	Station	Temp(C)	pH	TSS (mg/L)	As (mg/L)	CN (mg/L)	Zn	Cu	Pb	Ni	Cd	Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20075	01/08/00	D 925-10	17.3	7.04	1.1	0.0057	0.018	0.271	0.008	---	---	---	---	---	---
20076	02/08/00	D 925-10	18.0	6.98	1.2	0.0050	0.020	0.260	0.006	---	---	---	---	---	---
20077	03/08/00	D 925-10	18.6	7.04	0.8	0.0053	0.016	0.271	0.006	---	---	---	---	---	---
20078	04/08/00	D 925-10	18.2	7.03	0.7	0.0056	0.020	0.276	0.008	---	---	---	---	---	---
20079	05/08/00	D 925-10	18.4	7.80		0.0044	0.018	0.258	0.009	---	---	---	---	---	---
20080	05/08/00	W 925-20	20.5	6.01	0.8	0.0028	0.014	0.242	0.004	<0.002	0.122	<0.0006	<5	2.43	239
20081	05/08/00	W 925-21	21.2	6.37	0.4	0.0002	<0.002	0.003	<0.001	0.003	<0.001	<0.0006	<5	0.24	4
20082	05/08/00	W 925-22	19.7	6.37	0.4	0.0012	0.004	0.072	<0.001	<0.002	0.038	<0.0006	<5	1.00	92
20083	05/08/00	W 925-24	15.6	6.47	0.4	0.0006	<0.002	0.015	<0.001	<0.002	0.008	<0.0006	<5	0.38	25
20084	05/08/00	W 925-25	13.2	6.43	0.2	<0.0002	<0.002	0.015	<0.001	<0.002	0.001	<0.0006	<5	0.07	5
20087	06/08/00	D 925-10	18.8	7.12	0.4	0.0044	0.018	0.252	0.005	---	---	---	---	---	---
20088	07/08/00	W 925-10	17.6	7.07	0.7	0.0047	0.018	0.270	0.009	<0.002	0.117	<0.0006	8	3.96	258
20091	08/08/00	D 925-10	14.1	7.12	1.3	0.0066	0.018	0.248	0.007	---	---	---	---	---	---
20092	09/08/00	D 925-10	14.8	7.07	1.3	0.0100	0.018	0.247	0.006	---	---	---	---	---	---
20093	10/08/00	D 925-10	14.1	7.01	1.5	0.0121	0.016	0.244	0.006	---	---	---	---	---	---
20094	11/08/00	D 925-10	14.6	7.15	1.1	0.0119	0.016	0.240	0.005	---	---	---	---	---	---
20095	12/08/00	D 925-10	14.2	7.13	1.3	0.0099	0.018	0.245	0.009	---	---	---	---	---	---
20096	12/08/00	W 925-20	14.9	6.30	0.4	0.0030	0.010	0.231	0.003	<0.002	0.101	<0.0006	<5	3.39	234
20097	12/08/00	W 925-21	14.7	6.63	0.6	0.0009	0.002	0.001	<0.001	<0.002	<0.001	<0.0006	<5	0.49	4
20098	12/08/00	W 925-22	14.2	6.53	0.8	0.0015	0.002	0.085	0.001	<0.002	0.039	<0.0006	<5	1.39	93
20101	12/08/00	W 925-24	11.4	6.63	1.0	0.0014	0.002	0.017	<0.001	<0.002	0.008	<0.0006	6	0.66	28
20102	12/08/00	W 925-25	10.6	6.65	0.8	0.0060	<0.002	0.004	<0.001	<0.002	0.001	<0.0006	6	0.41	4
20103	13/08/00	D 925-10	13.7	7.09	1.0	0.0066	0.016	0.248	0.009	---	---	---	---	---	---
20104	14/08/00	W 925-10	13.7	7.20	1.2	0.0690	0.016	0.260	0.008	<0.002	0.102	<0.0006	7	4.11	236
20105	14/08/00	M 925-14	12.3	7.18	---	0.0117	---	0.108	0.008	<0.002	0.030	<0.0006	42	3.40	707
20107	15/08/00	D 925-10	12.6	7.13	0.9	0.0060	0.016	0.252	0.009	---	---	---	---	---	---
20108	16/08/00	D 925-10	12.1	7.16	1.4	0.0057	0.014	0.263	0.006	---	---	---	---	---	222
20109	17/08/00	D 925-10	12.2	7.15	1.2	0.0062	0.014	0.242	0.011	---	---	---	---	---	220
20110	18/08/00	D 925-10	12.2	7.07	1.0	0.0076	0.016	0.240	0.007	---	---	---	---	---	222
20111	19/08/00	D 925-10	12.2	7.00	0.9	0.0064	0.014	0.241	0.008	---	---	---	---	---	229
20112	19/08/00	W 925-20	13.9	6.14	0.4	0.0015	0.006	0.230	0.005	<0.002	0.111	<0.0006	<5	2.44	242
20113	19/08/00	W 925-21	14.2	6.48	4.0	0.0004	<0.002	0.009	0.002	<0.002	0.001	<0.0006	5	0.36	4
20114	19/08/00	W 925-22	12.6	6.43	0.3	0.0008	0.002	0.091	0.002	<0.002	0.045	<0.0006	<5	0.89	98
20115	19/08/00	W 925-24	11.8	6.55	0.1	0.0011	<0.002	0.044	<0.001	<0.002	0.021	<0.0006	<5	0.62	54
20116	19/08/00	W 925-25	10.6	6.63	0.3	0.0008	<0.002	0.011	0.001	<0.002	0.003	<0.0006	<5	0.28	11
20117	20/08/00	D 925-10	12.6	7.12	0.8	0.0077	0.014	0.245	0.005	---	---	---	---	---	---
20118	21/08/00	W 925-10	12.3	7.05	0.5	0.0057	0.014	0.245	0.007	<0.002	0.107	<0.0006	7	3.91	244
20124	22/08/00	D 925-10	12.8	7.04	0.7	0.0115	<0.002	0.260	0.008	---	---	---	---	---	221
20125	23/08/00	D 925-10	12.9	7.11	0.6	0.0091	<0.002	0.252	0.007	---	---	---	---	---	223
20126	24/08/00	D 925-10	11.4	6.90	1.3	0.0084	<0.002	0.261	0.009	---	---	---	---	---	224
20129	25/08/00	D 925-10	10.2	6.79	0.8	0.0111	<0.002	0.268	0.008	---	---	---	---	---	216
20130	26/08/00	D 925-10	10.2	6.69	0.8	0.0133	<0.002	0.276	0.009	---	---	---	---	---	222
20131	25/08/00	W 925-20	10.4	5.60	0.4	0.0018	<0.002	0.243	0.005	<0.002	0.121	<0.0006	<5	2.68	217
20132	25/08/00	W 925-21	10.9	6.04	0.6	<0.0002	<0.002	0.016	0.002	<0.002	0.049	<0.0006	<5	0.37	4
20133	25/08/00	W 925-22	9.9	5.85	0.4	0.0004	0.030	0.120	0.003	<0.002	0.061	<0.0006	<5	1.34	114
20136	25/08/00	W 925-24	10.2	6.07	0.3	<0.0002	0.032	0.067	0.002	<0.002	0.032	<0.0006	6	0.93	68
20137	25/08/00	W 925-25	9.6	6.17	0.2	<0.0002	0.002	0.008	<0.001	<0.002	0.003	<0.0006	<5	0.39	6
20138	27/08/00	D 925-10	8.7	6.51	1.5	0.0092	<0.002	0.255	0.008	---	---	---	---	---	222
20139	28/08/00	W 925-10	7.7	6.63	0.9	0.0100	<0.002	0.261	0.008	<0.002	0.118	<0.0006	---	2.72	217
20140	29/08/00	D 925-10	7.0	6.49	0.7	0.0053	0.016	0.253	0.006	---	---	---	---	---	231
20142	30/08/00	D 925-10	6.2	6.61	0.7	0.0049	0.014	0.257	0.012	---	---	---	---	---	---
20143	31/08/00	D 925-10	6.2	6.66	0.8	0.0049	0.016	0.261	0.01	---	---	---	---	---	---

Log No.	Date	Station	Total Nitrate	Total N	Total OrthoP	Total Phos.	Faecal Coliform	G/O Sheen	BOD
20105	14/08/00	M 925-14	8.38	12.19	<0.05	0.18	1	No	1



Lupin Operations, Nunavut

Monthly SNP Report
Sampling Results
August, 2000

Quality Control

*W-Weekly			Routine Analysis			Total		Total Metals (mg/L)							
Log No.	Date	Station	Temp(C)	pH	TSS (mg/L)	As (mg/L)	CN (mg/L)	Zn	Cu	Pb	Ni	Cd	Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20086	05/08/00	W Field Blk	---	---	---	<0.0002	<0.002	0.0074	0.009	<0.002	<0.001	<0.0006		0.14	
20088	07/08/00	W 925-10	17.6	7.07	0.7	0.0047	0.018	0.270	0.009	<0.002	0.117	<0.0006	8	3.96	258
20089	07/08/00	W 925-10-2	17.6	7.01	0.8	0.0048	0.020	0.275	0.006	<0.002	0.120	<0.0006	8	3.98	255
20090	07/08/00	W 925-10-3	17.6	7.02	0.9	0.0051	0.020	0.256	0.006	<0.002	0.111	<0.0006	8	3.95	257
20098	12/08/00	W 925-22	14.2	6.53	0.8	0.0015	0.002	0.085	0.001	<0.002	0.039	<0.0006	<5	1.39	93
20099	12/08/00	W 925-22-2	14.2	6.48	0.8	0.0010	0.004	0.087	0.001	<0.002	0.039	<0.0006	<5	1.44	91
20100	12/08/00	W 925-22-3	14.2	6.54	0.8	0.0010	0.006	0.097	0.001	<0.002	0.042	<0.0006	<5	1.49	94
20106	12/08/00	W Fld. Blk.	---	---	---	0.0007	<0.002	0.029	0.016	<0.002	<0.001	<0.0006		0.33	
20107	21/08/00	W 925-10	12.3	7.05	0.5	0.0057	0.014	0.245	0.007	<0.002	0.107	<0.0006	7	3.91	244
20108	21/08/00	W 925-10-2	12.3	7.04	1.1	0.0057	0.012	0.306	0.006	<0.002	0.111	<0.0006	6	3.80	242
20109	21/08/00	W 925-10-3	12.3	7.00	0.9	0.0045	0.012	0.250	0.009	<0.002	0.114	<0.0006	6	3.64	243
20121	19/08/00	W Fld. Blk.	---	---	---	0.0006	<0.002	0.0046	0.015	<0.002	<0.001	<0.0006		0.31	
20133	25/08/00	W 925-22	9.9	5.85	0.4	0.0004	0.030	0.120	0.003	<0.002	0.061	<0.0006	<5	1.34	114
20134	25/08/00	W 925-22-2	9.9	5.97	0.4	0.0004	0.010	0.123	0.002	<0.002	0.059	<0.0006	<5	1.47	114
20135	25/08/00	W 925-22-3	9.9	5.88	0.4	0.0005	0.006	0.148	0.002	<0.002	0.065	<0.0006	5	1.58	112
20141	25/08/00	W Fld. Blk.	---	---	---	<0.0002	<0.002	0.006	0.012	<0.002	0.002	<0.0006		0.21	

*Routine analyses completed by Echo Bay Mines Ltd. All other analyses completed by Norwest Labs. Ltd., Edmonton.

Monthly SNP Report

September, 2000

*D-Daily	*W-Weekly	*M-Monthly	Routine Analysis				Total	Total	Total Metals (mg/L)							
Log No.	Date	Station	Temp(C)	pH	Cond (us)	TSS (mg/L)	As (mg/L)	CN (mg/L)	Zn	Cu	Pb	Ni	Cd	Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20144	01/09/00	D 925-10	6.1	6.58	961	0.8	0.0051	0.016	0.254	0.006	---	---	---			---
20145	02/09/00	W 925-20	5.7	5.83	845	0.6	0.0022	0.002	0.251	0.007	<0.002	0.121	<0.0006	<5	2.11	222
20146	02/09/00	W 925-21	6.4	6.00	20	0.5	<0.0002	<0.002	0.026	0.001	<0.002	<0.001	<0.0006	5	0.27	5.7
20147	02/09/00	W 925-22	6.3	5.88	446	0.3	0.0009	0.002	0.117	0.003	<0.002	0.061	<0.0006	<5	1.31	113
20148	02/09/00	W 925-24	6.8	6.07	114	0.4	<0.0002	<0.002	0.023	0.004	<0.002	0.011	<0.0006	<5	0.56	29
20149	02/09/00	W 925-25	7.4	6.11	48	0.3	<0.0002	<0.002	0.012	0.002	<0.002	0.004	<0.0006	<5	0.37	13
20152	02/09/00	W 925-10	6.2	6.53	906	1.2	0.0061	0.016	0.258	0.011	<0.002	0.111	<0.0006	<5	3.07	239
20155	11/09/00	M 925-14	3.9	6.17	3470	2.0	0.0073		0.125	0.006	<0.002	0.040	<0.0006	<5	2.68	777
20156	12/09/00	W 925-22	3.9	6.10	286	0.4	0.0007	0.018	0.071	0.002	<0.002	0.036	<0.0006	<5	0.88	64
20159	12/09/00	W 925-24	6.8	6.47	160	0.5	0.0006	0.010	0.034	0.001	<0.002	0.016	<0.0006	<5	0.75	32
20160	12/09/00	W 925-25	6.3	6.76	28	0.6	0.0005	0.002	0.008	<0.001	<0.002	0.004	<0.0006	<5	0.25	8.2
20166	16/09/00	W 925-22	3.9	6.51	171	4.0	0.0005	0.004	0.089	0.006	<0.002	0.026	<0.0006	<5	0.50	45
20169	16/09/00	W 925-24	4.5	6.30	218	3.2	0.0005	0.008	0.054	0.002	<0.002	0.027	<0.0006	<5	0.63	54
20170	16/09/00	W 925-25	6.4	6.70	25	0.3	0.0002	<0.002	0.012	<0.001	<0.002	0.004	<0.0006	<5	0.38	7.7

Additional Analyses

Log No.	Date	Station	Total Nitrate	Total N	Total Nitrite	Total Ortho-P	Total Phos.	Faecal Coliform	G/O Sheen	BOD
20155	11/09/00	M 925-14	8.8	3.22	<0.01	<0.05	0.14	<1	No	<1

Quality Control

*W-Weekly			Routine Analysis			Total			Total Metals (mg/L)								
Log No.	Date		Station	Temp(C)	pH	Cond (us)	TSS (mg/L)	As (mg/L)	CN (mg/L)	Zn	Cu	Pb	Ni	Cd	Alk. (mg/L)	NH ₄ (mg/L)	Hard. (mg/L)
20151	02/09/00	W	Fld. Blk.					< 0.0002	<0.002	0.005	0.015	<0.002	<0.001	<0.0006		0.26	
20157	12/09/00	W	925-22-2	3.9	6.18	274	0.5	0.0006	0.016	0.080	0.002	<0.002	0.039	<0.0006	<5	0.88	63
20158	12/09/00	W	925-22-3	3.9	6.25	278	0.6	0.0008	0.028	0.070	0.002	<0.002	0.035	<0.0006	<5	1.01	64
20162	12/09/00	W	Fld. Blk.					<0.0002	<0.002	0.020	0.029	<0.002	0.003	<0.0006	<5	0.46	
20167	16/09/00	W	925-22-2	3.9	6.36	175	4.0	0.0006	0.006	0.043	0.002	<0.002	0.022	<0.0006	<5	0.41	42
20168	16/09/00	W	925-22-3	3.9	6.32	167	4.9	0.0005	0.004	0.050	0.002	<0.002	0.027	<0.0006	<5	0.57	44
20171	16/09/00	W	Fld. Blk.				<0.1	<0.0002	<0.002	0.024	<0.001	<0.002	0.002	<0.0006	<5	0.16	2.1



Lupin Operations, Nunavut

Water Transfer From Pond 2 To Environment, Summer 2000

POND NO.2 DISCHARGE

Syphon Reading (cu m³)

Date	Time	Syphon No.1(4)	Daily Flow m ³ /day	Syphon No.2(3)	Daily Flow m ³ /day	Total Daily Discharge (m ³)	Cumulative Discharge (m ³)	Meter stick Height (m)	Water Dmp (m)	Survey Rd. (m)
		Meter Reading		Meter Reading						
15/07/00		1800057		0						483.02
16/07/00	11:00	1804403	4346	27501	27,501	31,847	31,847	0.35		
17/07/00	7:00	1838113	33710	50678	23,177	56,887	88,734			
18/07/00	7:30	1879938	41825	78651	27,973	69,798	158,532	0.16	0.19	482.83
19/07/00	7:30	1917677	37739	104932	26,281	64,020	222,552	0.08/0.90	0.08	482.75
20/07/00	7:30	1956071	38394	131788	26,856	65,250	287,802	0.84	0.06	482.69
21/07/00	7:30	1993567	37496	160207	28,419	65,915	353,717	0.76	0.08	482.61
22/07/00	7:30	2032388	38821	189114	28,907	67,728	421,445	0.70	0.06	482.55
23/07/00	7:30	2071660	39272	219720	30,606	69,878	491,323	0.64	0.06	482.49
24/07/00	7:00	2105812	34152	246630	26,910	61,062	552,385	0.58	0.06	482.43
25/07/00	7:30	2143697	37885	278512	31,882	69,767	622,152	0.51	0.07	482.36
26/07/00	7:30	2180076	36379	308214	29,702	66,081	688,233	0.44	0.07	482.29
27/07/00	7:30	2216240	36164	337965	29,751	65,915	754,148	0.37	0.07	482.22
28/07/00	7:30	2252592	36352	367976	30,011	66,363	820,511	0.30	0.07	482.15
29/07/00	7:30	2288260	35668	399401	31,425	67,093	887,604	0.24	0.06	482.09
30/07/00	7:30	2323396	35136	430383	30,982	66,118	953,722	0.17	0.07	482.02
31/07/00	7:00	2357353	33957	459104	28,721	62,678	1,016,400	0.09	0.08	481.94
01/08/00	7:30	2392961	35608	487560	28,456	64,064	1,080,464	0.86	0.07	481.87
02/08/00	7:30	2426813	33852	519811	32,251	66,103	1,146,567	0.83	0.03	481.84
03/08/00	7:30	2462790	35977	553651	33,840	69,817	1,216,384	0.80	0.03	481.81
04/08/00	7:30	2494915	32125	585055	31,404	63,529	1,279,913	0.77	0.04	481.77
05/08/00	7:30	2528733	33818	619067	34,012	67,830	1,347,743	0.74	0.03	481.75
06/08/00	7:30	2561777	33044	652761	33,694	66,738	1,414,481	0.70	0.05	481.70
07/08/00	7:30	2594513	32736	686188	33,427	66,163	1,480,644	0.67	0.03	481.67
08/08/00	7:30	2625506	30993	720278	34,090	65,083	1,545,727	0.65	0.02	481.66
09/08/00	7:30	2662153	36647	754163	33,885	70,532	1,616,259	0.63	0.02	481.64
10/08/00	7:30	2696058	33905	787266	33,103	67,008	1,683,267	0.60	0.03	481.61
11/08/00	7:30	2727405	31347	820286	33,020	64,367	1,747,634	0.58	0.02	481.59
12/08/00	7:30	2757908	30503	853114	32,828	63,331	1,810,965	0.56	0.02	481.57
13/08/00	7:30	2790793	32885	853367	253	33,138	1,844,103	0.55	0.01	481.56
14/08/00	6:30	2823205	32412	853367	0	32,412	1,876,515	0.52	0.03	481.53
15/08/00	9:00	2859224	36019	853367	0	36,019	1,912,534	0.50	0.02	481.51
16/08/00	7:30	2889713	30489	853367	0	30,489	1,943,023	0.47	0.03	481.48
17/08/00	7:30	2922570	32857	853367	0	32,857	1,975,880	0.43	0.04	481.44
18/08/00	7:30	2954164	31594	875557	22,190	53,784	2,029,664	0.37	0.06	481.38
19/08/00	7:30	2985125	30981	906063	30,506	61,497	2,091,131	0.30	0.07	481.31
20/08/00	8:30	3017916	32791	938447	32,384	65,175	2,156,306	0.23	0.07	481.24
21/08/00	6:30	3044966	27050	965724	27,277	54,327	2,210,633	0.16	0.07	481.17
22/08/00	7:30	3076077	31111	996448	30,724	61,835	2,272,468	0.10	0.06	481.11
23/08/00	7:30	3104465	28388	1024636	28,188	56,576	2,329,044	0.38	0.04	481.07
24/08/00	7:30	3133432	28967	1052345	27,709	56,676	2,385,720	0.32	0.06	481.01
25/08/00	7:30	3161518	28086	1079557	27,212	55,298	2,441,018	0.25	0.07	480.94
26/08/00	7:30	3188610	27092	1105288	25,731	52,823	2,493,841	0.23	0.02	480.92
27/08/00	7:30	3215514	26904	1126132	20,844	47,748	2,541,589	0.19	0.04	480.88
28/08/00	6:30	3241524	26010	1126132	0	26,010	2,567,599	0.18	0.01	480.87
29/08/00	7:00	3269479	27955	1126132	0	27,955	2,595,554	0.17	0.01	480.86
30/08/00	7:30	3296600	27121	1126132	0	27,121	2,622,675	0.15	0.02	480.84
31/08/00	7:30	3323853	27253	1126132	0	27,253	2,649,928	0.10	0.05	480.79
01/09/00	7:30	3349785	25932	1126132	0	25,932	2,675,860	0.07	0.03	480.76
02/09/00	7:00	3375285	25500	1126132	0	25,500	2,701,360	0.04	0.03	480.73

APPENDIX B

Spill No. 92-105 Monitoring data

South Basin Sampling

Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

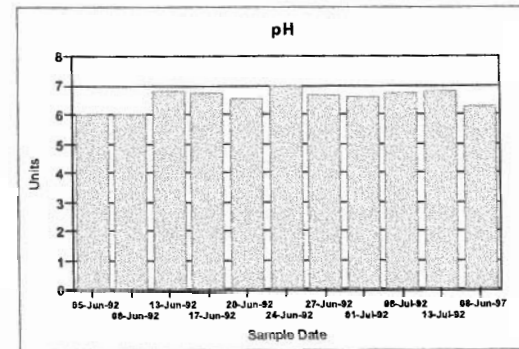
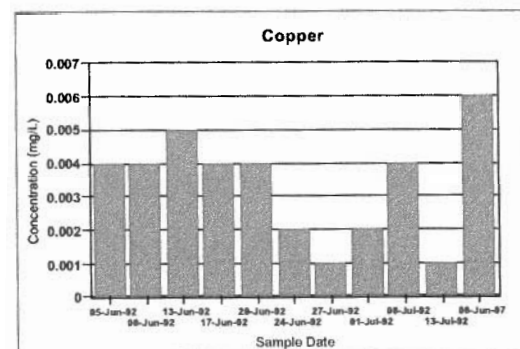
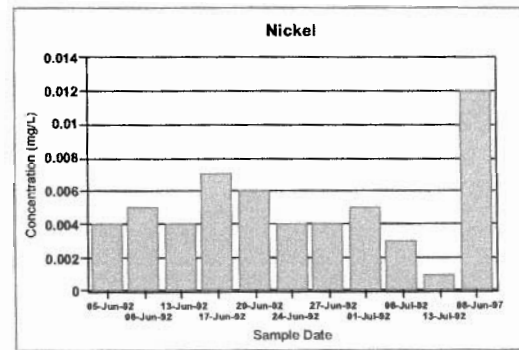
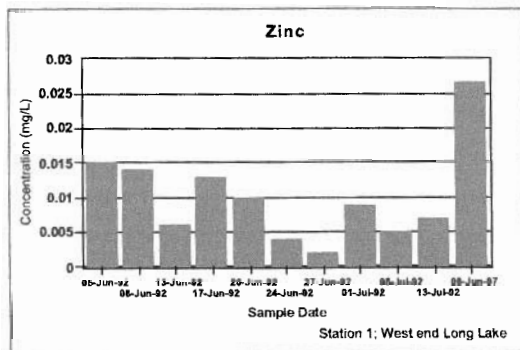
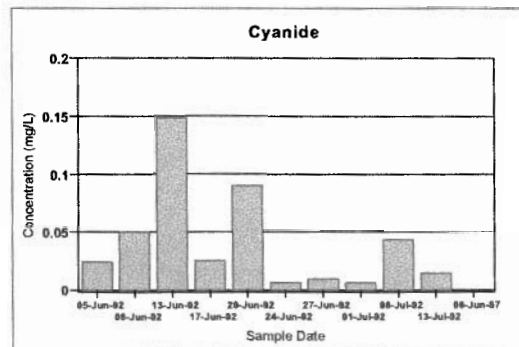
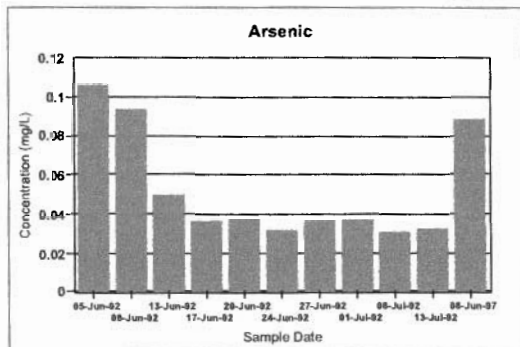
DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	Zn	TOTAL METALS			Cu	TEMP °C
							Pb	Ni			
05-Jun-92	SBASIN-1	6.00		0.03	0.106	0.015	<0.004	0.004	0.004		
08-Jun-92	SBASIN-1	6.00	3.6	0.05	0.093	0.014	<0.004	0.005	0.004		
13-Jun-92	SBASIN-1	6.79	4.4	0.15	0.050	0.006	<0.004	0.004	0.005	4.8	
17-Jun-92	SBASIN-1	6.77	3.0	0.03	0.037	0.013	<0.004	0.007	0.004		
20-Jun-92	SBASIN-1	6.54	1.6	0.09	0.037	0.010	<0.004	0.006	0.004	11	
24-Jun-92	SBASIN-1	7.00	1.2	0.01	0.031	0.004	<0.004	0.004	0.002	8.5	
27-Jun-92	SBASIN-1	6.70	1.2	0.01	0.036	0.002	<0.004	0.004	0.001	11	
01-Jul-92	SBASIN-1	6.60	1.6	0.007	0.037	0.009	<0.004	0.005	0.002	12.5	
08-Jul-92	SBASIN-1	6.73	1.4	0.044	0.031	0.005	<0.004	0.003	0.004	8	
13-Jul-92	SBASIN-1	6.80	0.6	0.016	0.032	0.007	<0.004	0.001	0.001		
08-Jun-97	SB1	6.32	2.8		0.0890	0.027	0.010	0.012	0.006		



ECHO BAY MINES LTD.
LUPIN GOLD MINE, Nunavut

South Basin Monitoring - 1992 through 2000

Station 1- N.W. end of Long Lake



See data sheets for actual analyses results/values.
Note: The x axis is not over time, but for sample occurrence.

South Basin Sampling

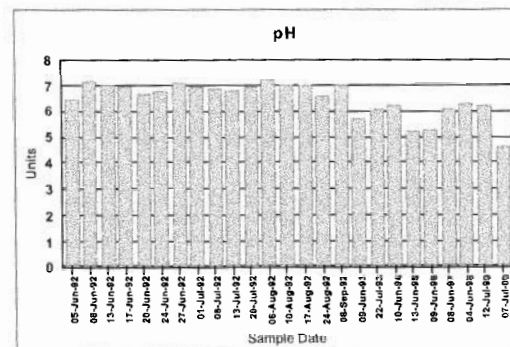
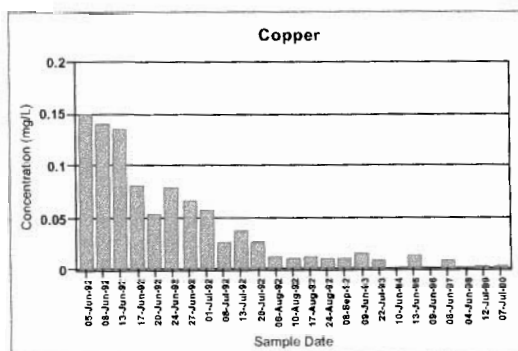
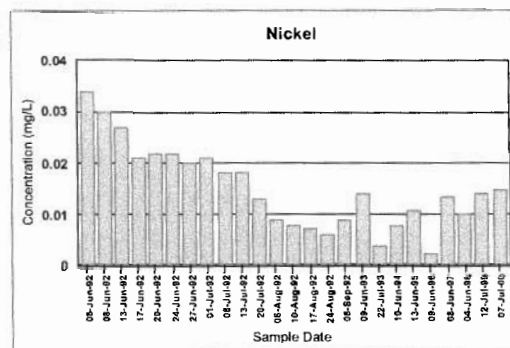
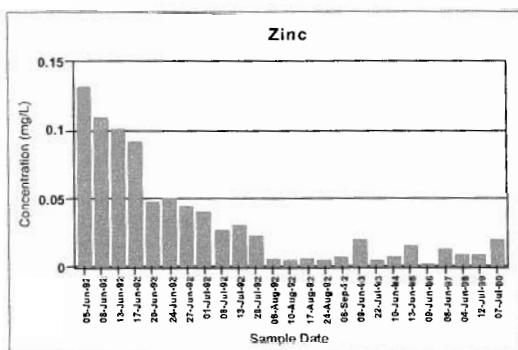
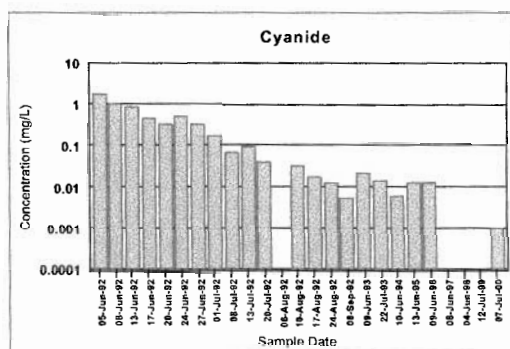
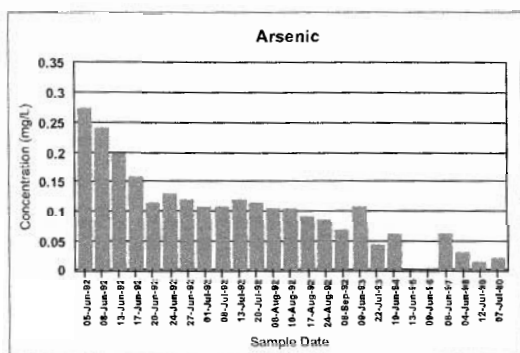
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	TOTAL METALS				TEMP °C
						Zn	Pb	Ni	Cu	
05-Jun-92	SBASIN-2	6.43		1.76	0.272	0.132	<0.004	0.034	0.150	
08-Jun-92	SBASIN-2	7.16	1.8	1.09	0.240	0.110	<0.004	0.030	0.141	
13-Jun-92	SBASIN-2	7.05	1.6	0.89	0.196	0.101	<0.004	0.027	0.136	2.4
17-Jun-92	SBASIN-2	6.91	0.7	0.46	0.156	0.092	<0.004	0.021	0.081	
20-Jun-92	SBASIN-2	6.69	1.2	0.35	0.114	0.047	<0.004	0.022	0.054	5
24-Jun-92	SBASIN-2	6.78	0.4	0.50	0.130	0.050	<0.004	0.022	0.079	4.5
27-Jun-92	SBASIN-2	7.08	1.4	0.35	0.120	0.045	<0.004	0.020	0.067	7
01-Jul-92	SBASIN-2	6.97	0.8	0.18	0.107	0.040	<0.004	0.021	0.057	8
08-Jul-92	SBASIN-2	6.89	0.2	0.07	0.108	0.027	<0.004	0.018	0.027	7
13-Jul-92	SBASIN-2	6.79	0.6	0.097	0.118	0.031	<0.004	0.018	0.038	
20-Jul-92	SBASIN-2	6.91	1.0	0.041	0.112	0.023	<0.004	0.013	0.027	15
06-Aug-92	SBASIN-2	7.26	1.0		0.103	0.006	<0.004	0.009	0.011	8
10-Aug-92	SBASIN-2	7.05	0.4	0.035	0.102	0.005	<0.004	0.008	0.010	11.5
17-Aug-92	SBASIN-2	7.03	0.5	0.018	0.092	0.006	<0.004	0.007	0.011	12
24-Aug-92	SBASIN-2	6.55		0.013	0.084	0.005	<0.004	0.006	0.010	8.5
08-Sep-92	SBASIN-2	7.00	0.2	0.006	0.069	0.007	<0.004	0.009	0.010	4.0
09-Jun-93	SB2	5.69	1.4	0.022	0.107	0.020	<0.004	0.014	0.015	3.4
22-Jul-93	SB2	6.09	0.3	0.015	0.044	0.005	<0.004	0.004	0.008	14
10-Jun-94	SB2	6.25	1.0	0.006	0.061	0.007	<0.004	0.008	<0.001	
13-Jun-95	SB 2	5.17	1.5	0.013	0.0025	0.016	<0.004	0.011	0.013	4
09-Jun-96	SB2	5.24	1.3	0.013		0.003	<0.004	0.003	0.002	
08-Jun-97	SB2	6.11	<0.2		0.0620	0.013	<0.004	0.014	0.008	
04-Jun-98	SB2	6.29	7		0.0296	0.0096	<0.002	0.010	<0.001	
12-Jul-99	SB2	6.20	<1		0.0136	0.0087	<0.002	0.014	0.002	
07-Jul-00	SB2	4.62	0.7	0.001	0.0214	0.02	0.03	0.015	0.003	

South Basin Monitoring - 1992 through 2000

Station 2- Outflow of Long Lake/Decant Creek



See data sheets for actual analyses results/values.
Note: The x axis is not over time, but for sample occurrence.
The cyanide graph Y axis is logarithmic.

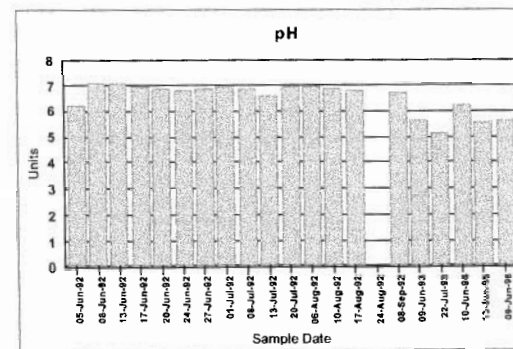
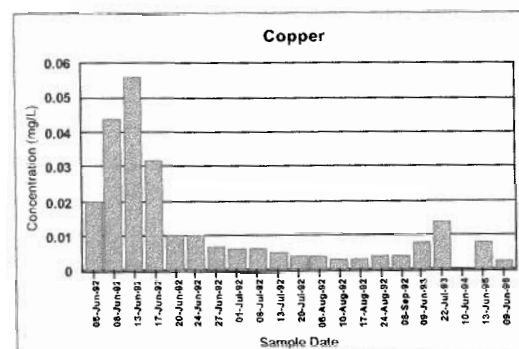
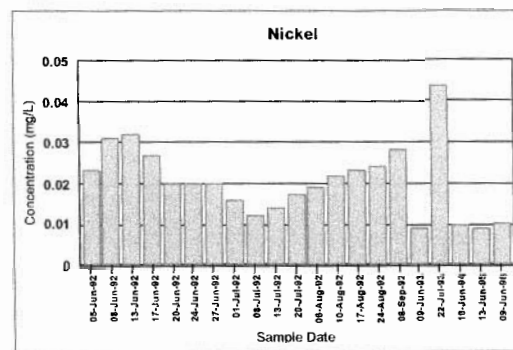
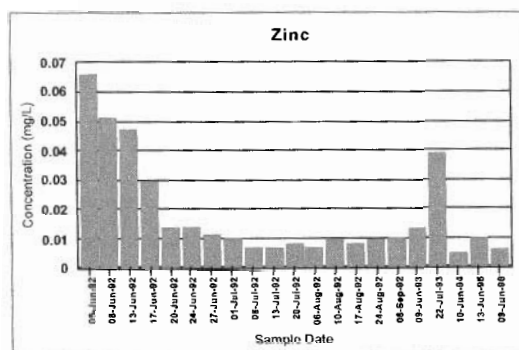
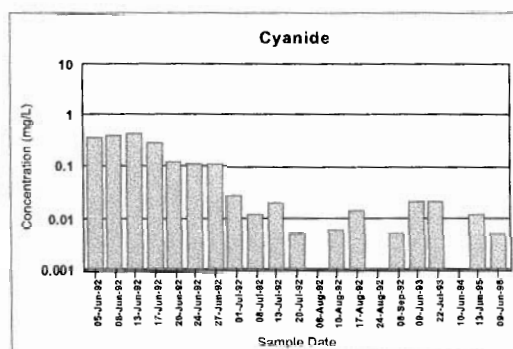
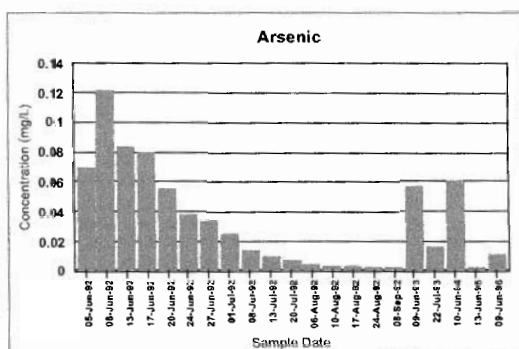
South Basin Sampling

Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	TOTAL METALS				Cu	TEMP °C
						Zn	Pb	Ni			
05-Jun-92	SBASIN-3	6.22		0.36	0.070	0.066	<0.004	0.023	0.020		
08-Jun-92	SBASIN-3	7.09	2.2	0.39	0.122	0.051	<0.004	0.031	0.044		
13-Jun-92	SBASIN-3	7.11	0.7	0.44	0.084	0.047	<0.004	0.032	0.056		4.4
17-Jun-92	SBASIN-3	6.95	2.0	0.29	0.079	0.029	<0.004	0.027	0.032		
20-Jun-92	SBASIN-3	6.84	1.2	0.12	0.055	0.014	<0.004	0.020	0.010		8
24-Jun-92	SBASIN-3	6.83	0.2	0.11	0.038	0.014	<0.004	0.020	0.010		7
27-Jun-92	SBASIN-3	6.90	0.6	0.12	0.034	0.011	<0.004	0.020	0.007		8
01-Jul-92	SBASIN-3	6.92	0.6	0.027	0.025	0.010	<0.004	0.016	0.006		10.5
08-Jul-92	SBASIN-3	6.88	0.6	0.012	0.0140	0.007	<0.004	0.012	0.006		6
13-Jul-92	SBASIN-3	6.60	0.6	0.020	0.0091	0.007	<0.004	0.014	0.005		
20-Jul-92	SBASIN-3	6.93	0.8	0.005	0.0067	0.008	<0.004	0.017	0.004		11
06-Aug-92	SBASIN-3	6.93	0.4		0.0041	0.007	<0.004	0.019	0.004		7
10-Aug-92	SBASIN-3	6.89	0.2	0.006	0.0033	0.009	<0.004	0.022	0.003		8.5
17-Aug-92	SBASIN-3	6.81	0.2	0.014	0.0031	0.008	<0.004	0.023	0.003		9
24-Aug-92	SBASIN-3-2				0.0024	0.009	<0.004	0.024	0.004		
08-Sep-92	SBASIN-3	6.71	0.2	0.005	0.0019	0.010	<0.004	0.028	0.004		4.0
09-Jun-93	SB3-2	5.62	1.0	0.022	0.057	0.013	<0.004	0.009	0.008		
22-Jul-93	SB3	5.14	1.5	0.022	0.016	0.039	0.005	0.044	0.014		15.5
10-Jun-94	SB3	6.20	1.4	<0.005	0.061	0.005	<0.004	0.010	<0.001		
13-Jun-95	SB 3	5.56	0.8	0.012	0.0016	0.010	<0.004	0.009	0.008		6
09-Jun-96	SB3	5.62	5.5	0.005	0.0114	0.006	<0.004	0.011	0.003		

South Basin Monitoring - 1992 through 2000 **Station 3 - Approximately mid-way Decant Creek to Test Lake**



See data sheets for actual analyses results/values.
Note: The x axis is not over time, but for sample occurrence.
The cyanide graph Y axis is logarithmic.

South Basin Sampling

Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	TOTAL METALS				Cu	TEMP °C
05-Jun-92	SBASIN-4	5.23			0.028	0.004	<0.004	0.008	0.001		
08-Jun-92	SBASIN-4	5.46	9.8	0.05	0.024	0.006	<0.004	0.002	0.004		
13-Jun-92	SBASIN-4	6.00	15.2	0.47	0.006	0.002	<0.004	0.004	0.006		2.3
17-Jun-92	SBASIN-4	6.22	23.8	0.03	0.010	0.005	<0.004	0.005	0.003		
20-Jun-92	SBASIN-4	6.00	1.0	0.10	0.006	0.004	<0.004	0.005	0.002		5
24-Jun-92	SBASIN-4	6.22	1.4	0.09	0.002	0.003	<0.004	0.003	0.002		4
27-Jun-92	SBASIN-4	6.70	1.4	0.01	0.003	0.003	<0.004	0.004	0.004		6
01-Jul-92	SBASIN-4	6.32	0.8	0.010	0.0019	0.006	<0.004	0.005	0.002		9.5
08-Jul-92	SBASIN-4	6.57	1.2	0.005	0.0028	0.004	<0.004	0.005	0.002		8.5
13-Jul-92	SBASIN-4	6.39	1.2	0.013	0.0015	0.004	<0.004	0.003	0.002		
20-Jul-92	SBASIN-4	6.72	1.2	0.005	0.0015	0.002	<0.004	0.004	0.002		16
06-Aug-92	SBASIN-4	6.67	3.2		0.0019	0.003	<0.004	0.006	0.002		9
10-Aug-92	SBASIN-4	6.81	0.2	0.005	0.0019	0.003	<0.004	0.006	0.002		11.5
17-Aug-92	SBASIN-4	6.67	0.4	0.012	0.0015	0.003	<0.004	0.007	0.001		12
24-Aug-92	SBASIN-4	6.62		0.008	0.0013	0.003	<0.004	0.007	0.003		8
08-Sep-92	SBASIN-4	6.75	3.4	0.006	0.0008	0.004	<0.004	0.011	0.004		4.0
09-Jun-93	SB4	5.41	4.8	0.016	0.026	0.005	<0.004	0.002	0.003		1.5
22-Jul-93	SB4	6.25	1.2	0.021	0.0044	0.004	<0.004	0.002	0.005		13
10-Jun-94	SB4-2	5.84	2.4	0.006	0.056	0.003	<0.004	0.004	<0.001		
13-Jun-95	SB 4	5.63	0.5	0.012	0.0026	0.009	<0.004	0.014	0.009		12
09-Jun-96	SB4-2	5.09	3.5	0.007		0.004	<0.004	0.004	0.003		
08-Jun-97	SB4-2	5.67	1.2		0.0022	0.004	<0.004	0.003	0.003		

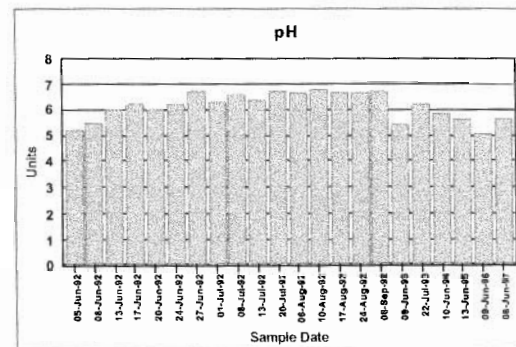
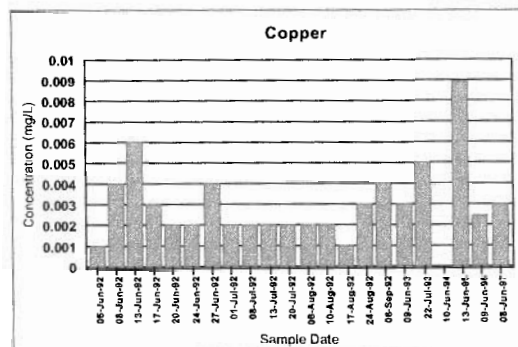
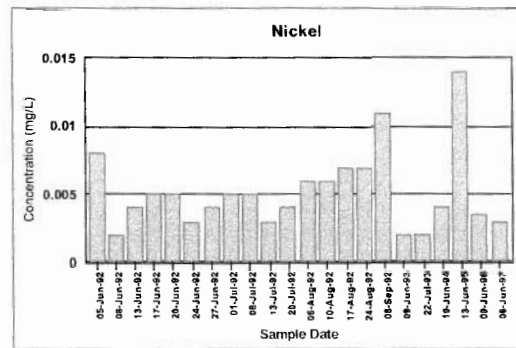
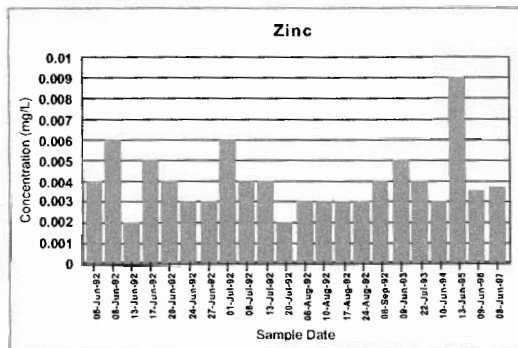
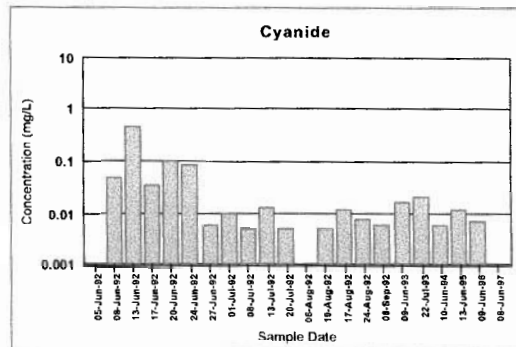
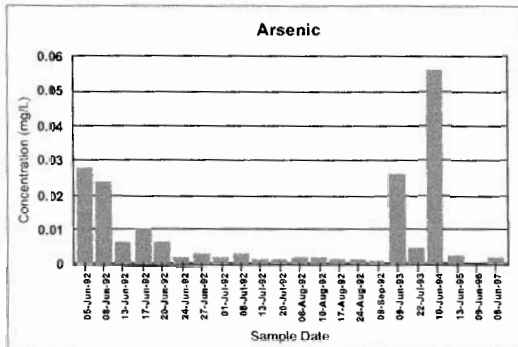


ECHO BAY MINES LTD.

LUPIN GOLD MINE, Nunavut

South Basin Monitoring - 1992 through 2000

Station 4 - Decant Creek/Inlet to Test Lake



See data sheets for actual analyses results/values
Note: The x axis is not over time, but for sample occurrence.
The cyanide graph Y axis is logarithmic.

South Basin Sampling

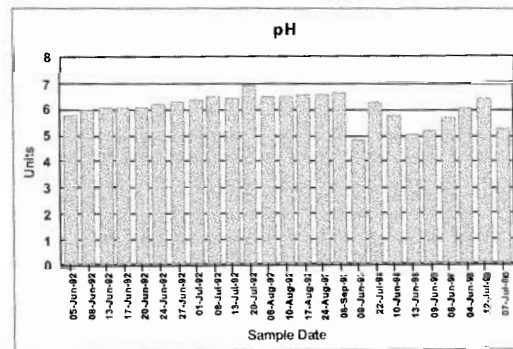
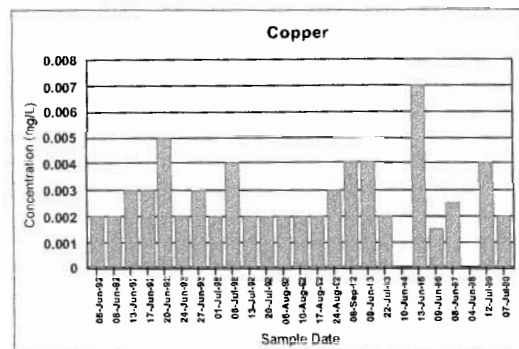
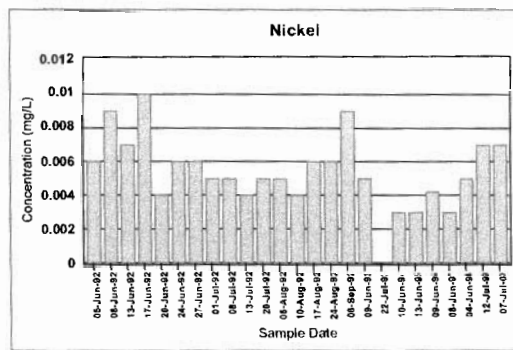
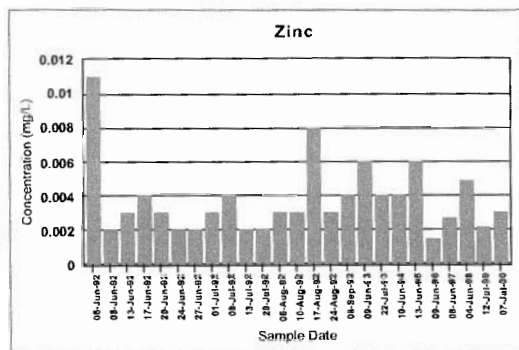
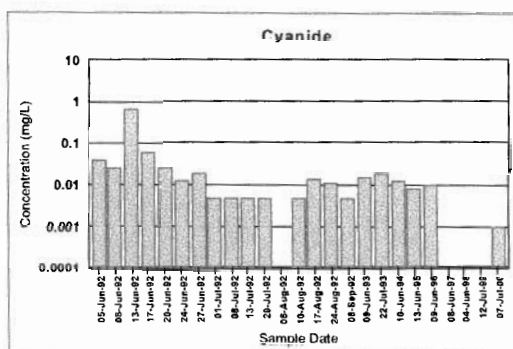
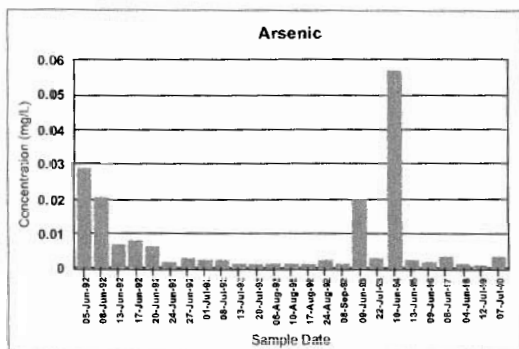
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	TOTAL METALS				TEMP °C
						Zn	Pb	Ni	Cu	
05-Jun-92	SBASIN-5	5.80		0.04	0.029	0.011	<0.004	0.006	0.002	
08-Jun-92	SBASIN-5	6.00	1.4	0.03	0.021	0.002	<0.004	0.009	0.002	
13-Jun-92	SBASIN-5	6.08	1.0	0.67	0.007	0.003	<0.004	0.007	0.003	3.2
17-Jun-92	SBASIN-5	6.06	N/A	0.07	0.008	0.004	<0.004	0.010	0.003	
20-Jun-92	SBASIN-5	6.04	0.4	0.03	0.006	0.003	<0.004	0.004	0.005	10
24-Jun-92	SBASIN-5	6.23	1.4	0.01	0.002	0.002	<0.004	0.006	0.002	8
27-Jun-92	SBASIN-5	6.30	1.0	0.02	0.003	0.002	<0.004	0.006	0.003	11
01-Jul-92	SBASIN-5	6.34	0.8	0.005	0.0023	0.003	<0.004	0.005	0.002	13
08-Jul-92	SBASIN-5	6.52	1.8	0.005	0.0026	0.004	<0.004	0.005	0.004	8
13-Jul-92	SBASIN-5	6.41	1.2	0.005	0.0015	0.002	<0.004	0.004	0.002	
20-Jul-92	SBASIN-5	6.94	1.2	0.005	0.0011	0.002	<0.004	0.005	0.002	15
06-Aug-92	SBASIN-5	6.54	1.2		0.0014	0.003	<0.004	0.005	0.002	7
10-Aug-92	SBASIN-5	6.52	1.4	0.005	0.0014	0.003	<0.004	0.004	0.002	12
17-Aug-92	SBASIN-5	6.60	0.6	0.015	0.0015	0.008	<0.004	0.006	0.002	12
24-Aug-92	SBASIN-5	6.59		0.012	0.0022	0.003	<0.004	0.006	0.003	9
08-Sep-92	SBASIN-5	6.69	1.2	0.005	0.0011	0.004	<0.004	0.009	0.004	4.0
09-Jun-93	SB5	4.85	4.8	0.016	0.020	0.006	<0.004	0.005	0.004	1.5
22-Jul-93	SB5	6.30	0.4	0.020	0.0028	0.004	<0.004	<0.001	0.002	13.5
10-Jun-94	SB5	5.77	1.4	0.013	0.057	0.004	<0.004	0.003	<0.001	
13-Jun-95	SB 5	5.07	3.3	0.009	0.0027	0.006	<0.004	0.003	0.007	4.5
09-Jun-96	SB5	5.23	0.4	0.010	0.0021	0.002	<0.004	0.004	0.002	
08-Jun-97	SB5	5.69	0.6		0.0035	0.003	<0.004	0.003	0.003	
04-Jun-98	SB5	6.07	5		0.0016	0.0049	<0.002	0.005	<0.001	
12-Jul-99	SB5	6.44	11		0.0007	0.0021	<0.002	0.007	0.004	
07-Jul-00	SB5	5.27	0.1	0.001	0.0035	0.003	<0.002	0.007	0.002	

South Basin Monitoring - 1992 through 2000

Station 5 - Test Lake outlet to Shallow Bay



See data sheets for actual analyses results/values.

Note: The x axis is not over time, but for sample occurrence.

Missing data on some graphs is due to "less than" values.

The cyanide graph Y axis is logarithmic.

South Basin Sampling

Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

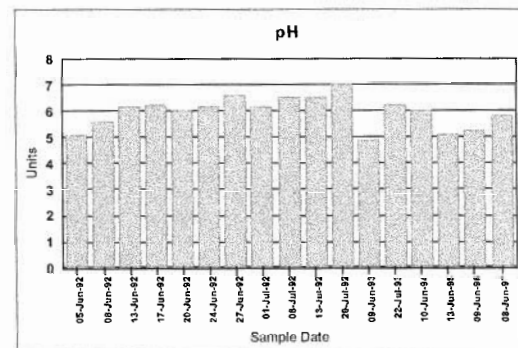
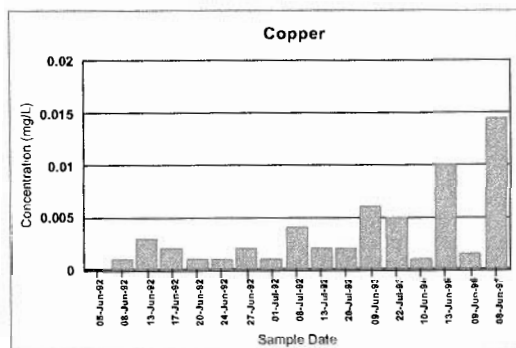
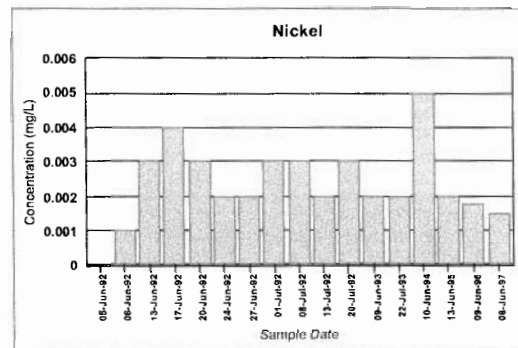
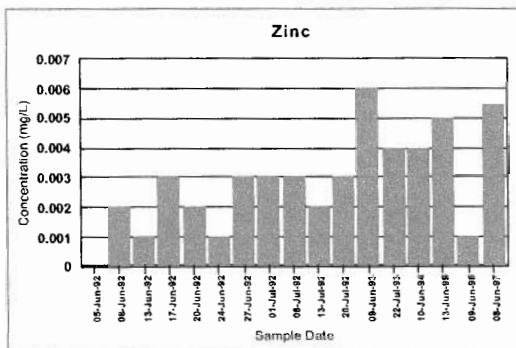
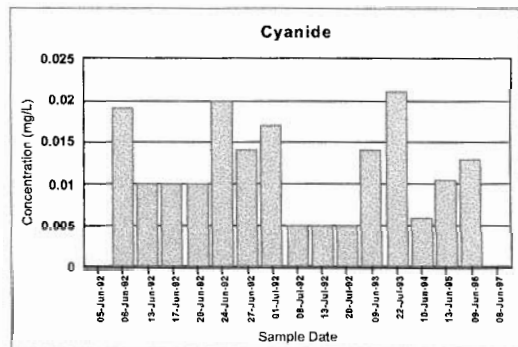
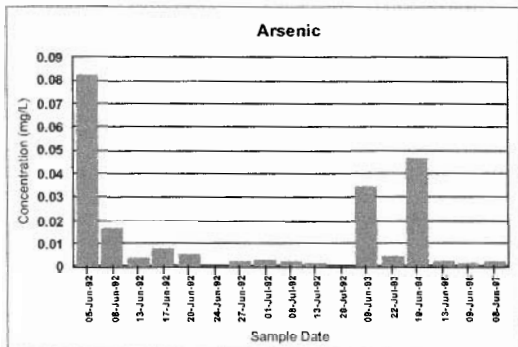
DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	Zn	TOTAL METALS Pb	Ni	Cu	TEMP °C
05-Jun-92	SBASIN-6A	5.06			0.083					
08-Jun-92	SBASIN-6	5.56	2.6	0.02	0.017	0.002	<0.004	0.001	0.001	
13-Jun-92	SBASIN-6	6.17	4.8	0.01	0.004	0.001	<0.004	0.003	0.003	1.9
17-Jun-92	SBASIN-6	6.20	N/A	0.01	0.008	0.003	<0.004	0.004	0.002	
20-Jun-92	SBASIN-6	6.02	1.0	0.01	0.005	0.002	<0.004	0.003	0.001	4.5
24-Jun-92	SBASIN-6	6.19	0.4	0.02	0.0008	0.001	<0.004	0.002	0.001	5
27-Jun-92	SBASIN-6	6.60	1.2	0.01	0.002	0.003	<0.004	0.002	0.002	6
01-Jul-92	SBASIN-6	6.14	0.6	0.017	0.003	0.003	<0.004	0.003	0.001	9.5
08-Jul-92	SBASIN-6	6.51	0.8	0.005	0.0017	0.003	<0.004	0.003	0.004	7.5
13-Jul-92	SBASIN-6	6.52	0.8	0.005	0.0010	0.002	<0.004	0.002	0.002	
20-Jul-92	SBASIN-6	7.00	1.0	0.005	0.0007	0.003	<0.004	0.003	0.002	14.5
09-Jun-93	SB6	4.87	2.2	0.014	0.035	0.006	<0.004	0.002	0.006	1.25
22-Jul-93	SB6	6.21	1.8	0.021	0.0044	0.004	<0.004	0.002	0.005	12.5
10-Jun-94	SB6	6.00	2.2	0.006	0.047	0.004	<0.004	0.005	0.001	
13-Jun-95	SB 6	5.11	9.1	0.011	0.0024	0.005	<0.004	0.002	0.010	4
09-Jun-96	SB6	5.19	3.8	0.013	0.0013	0.001	<0.004	0.002	0.002	
08-Jun-97	SB6	5.82	1.8		0.0023	0.005	<0.004	0.002	0.015	



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South Basin Monitoring - 1992 through 2000

Station 6 - Creek (from Tributary Lake - control) feeding Decant Creek prior to Test Lake



See data sheets for actual analyses results/values.

Note: The x axis is not over time, but for sample occurrence.

South Basin Sampling

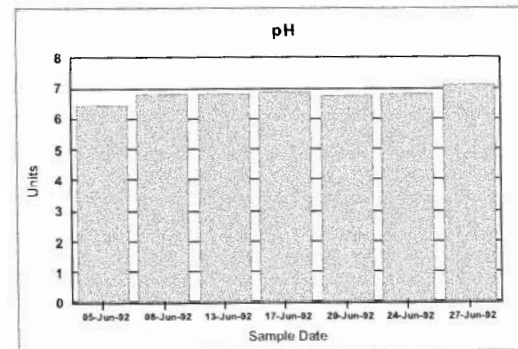
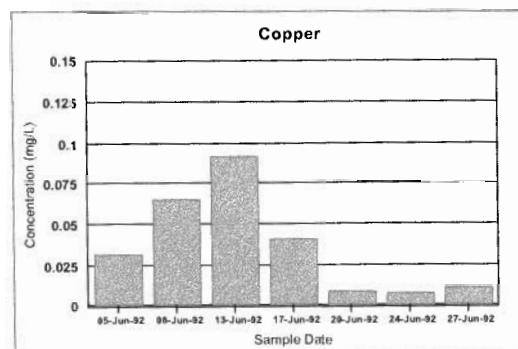
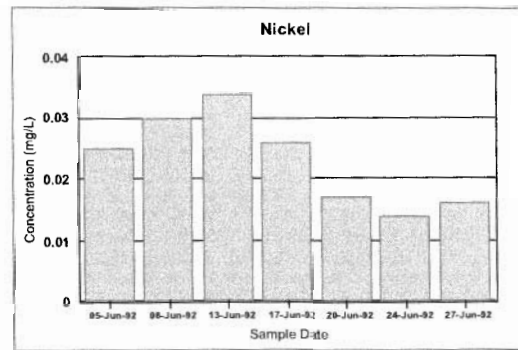
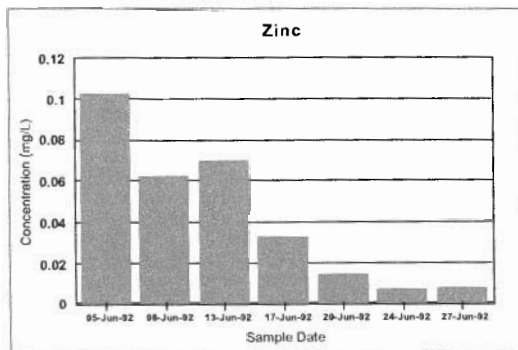
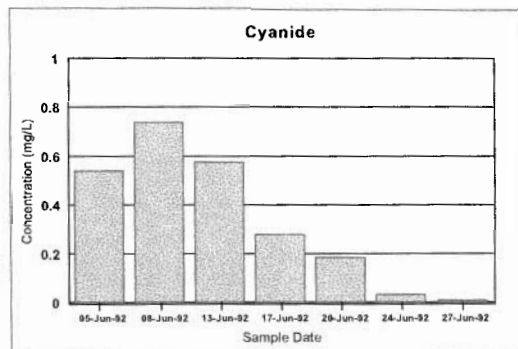
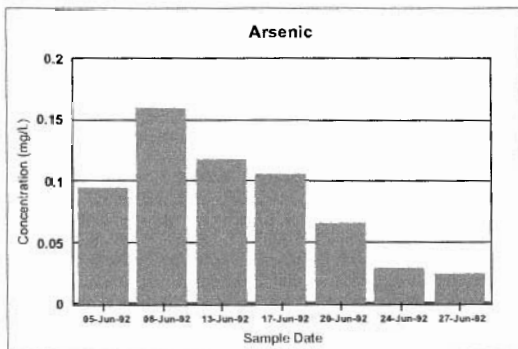
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	TOTAL METALS				TEMP °C
						Zn	Pb	Ni	Cu	
05-Jun-92	SBASIN-7	6.40		0.54	0.094	0.103	<0.004	0.025	0.032	
08-Jun-92	SBASIN-7	6.82	1.4	0.74	0.160	0.062	<0.004	0.030	0.065	
13-Jun-92	SBASIN-7	6.82	0.8	0.58	0.118	0.070	<0.004	0.034	0.092	0.4
17-Jun-92	SBASIN-7	6.88	0.4	0.28	0.106	0.033	<0.004	0.026	0.041	
20-Jun-92	SBASIN-7	6.73	0.6	0.19	0.066	0.014	<0.004	0.017	0.009	13
24-Jun-92	SBASIN-7	6.82	0.2	0.03	0.029	0.007	<0.004	0.014	0.007	10
27-Jun-92	SBASIN-7	7.10	0.8	0.01	0.024	0.008	<0.004	0.016	0.011	12

South Basin Monitoring - 1992 through 2000

Station 7 - Inlet to Post Lake



See data sheets for actual analyses results/values.

Note: The x axis is not over time, but for sample occurrence.

South Basin Sampling

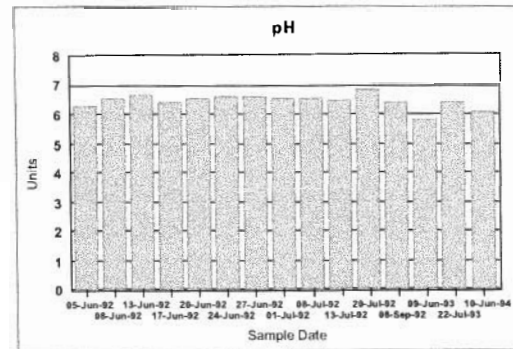
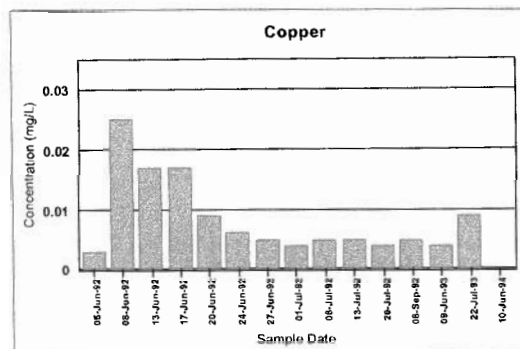
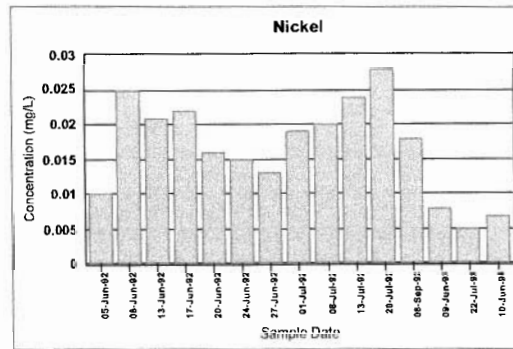
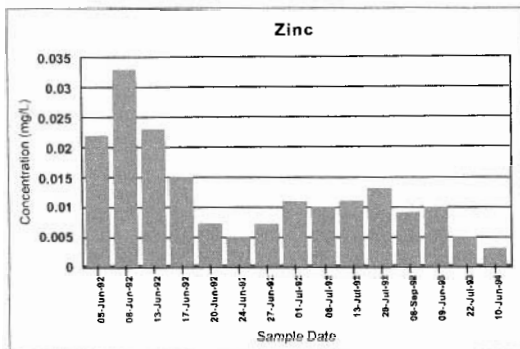
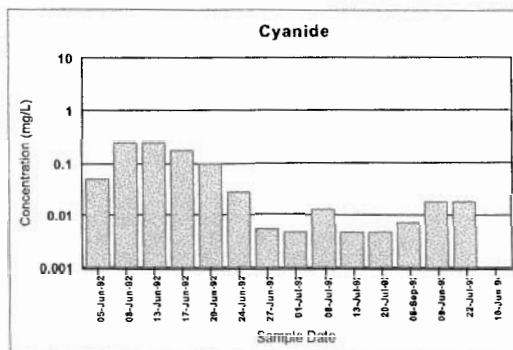
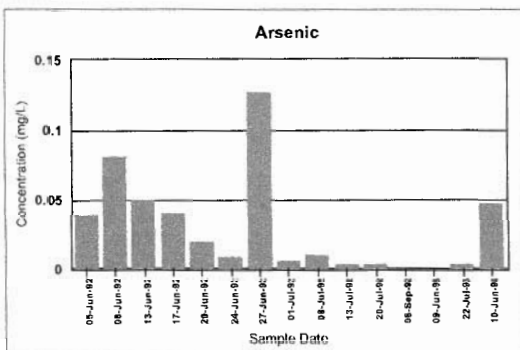
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	Zn	TOTAL METALS Pb	Ni	Cu	TEMP °C
05-Jun-92	SBASIN-8	6.28		0.05	0.039	0.022	<0.004	0.010	0.003	
08-Jun-92	SBASIN-8	6.56	1.6	0.25	0.081	0.033	<0.004	0.025	0.025	
13-Jun-92	SBASIN-8	6.69	0.6	0.25	0.050	0.023	<0.004	0.021	0.017	6.5
17-Jun-92	SBASIN-8	6.42	0.6	0.18	0.040	0.015	<0.004	0.022	0.017	
20-Jun-92	SBASIN-8	6.55	<0.2	0.10	0.020	0.007	<0.004	0.016	0.009	10
24-Jun-92	SBASIN-8	6.61	<0.2	0.03	0.009	0.005	<0.004	0.015	0.006	7
27-Jun-92	SBASIN-8	6.60	0.6	0.01	0.127	0.007	<0.004	0.013	0.005	8
01-Jul-92	SBASIN-8	6.53	<0.2	0.005	0.0062	0.011	<0.004	0.019	0.004	9
08-Jul-92	SBASIN-8	6.54	0.4	0.014	0.0098	0.010	<0.004	0.020	0.005	7.5
13-Jul-92	SBASIN-8	6.49	0.2	0.005	0.0039	0.011	<0.004	0.024	0.005	
20-Jul-92	SBASIN-8	6.84	0.2	0.005	0.0040	0.013	<0.004	0.028	0.004	
08-Sep-92	SBASIN-8	6.44	2.0	0.008	0.0008	0.009	<0.004	0.018	0.005	5.0
09-Jun-93	SB8	5.81	0.6	0.019		0.010	<0.004	0.008	0.004	1.5
22-Jul-93	SB8	6.40	0.7	0.019	0.0035	0.005	<0.004	0.005	0.009	14
10-Jun-94	SB8	6.12	1.0	<0.005	0.047	0.003	<0.004	0.007	<0.001	

South Basin Monitoring - 1992 through 2000

Station 8 - Intermediate stream from Post Lake to unnamed lake



See data sheets for actual analyses results/values.
Note: The x axis is not over time, but for sample occurrence.
The cyanide graph Y axis is logarithmic.

South Basin Sampling

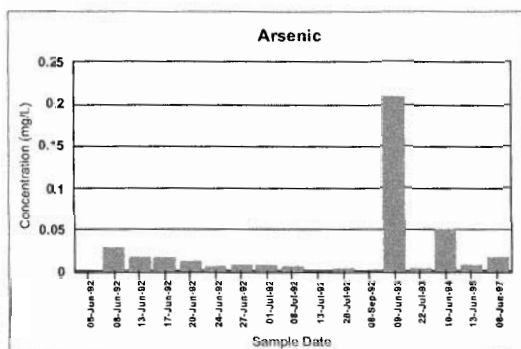
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	Zn	Ni	Fe	Cu	TEMP °C
05-Jun-92	SBASIN-9	6.04				0.034	0.007	0.14	0.002	
08-Jun-92	SBASIN-9	6.08	1.2	0.01	0.028	0.013	0.010	0.14	0.003	
13-Jun-92	SBASIN-9	6.69	0.6	0.06	0.016	0.007	0.010	0.13	0.004	2.4
17-Jun-92	SBASIN-9	6.24	0.8	0.02	0.016	0.017	0.011	0.12	0.003	
20-Jun-92	SBASIN-9	6.25	0.4	0.09	0.012	0.005	0.014	0.12	0.004	7
24-Jun-92	SBASIN-9	6.49	1.0	0.02	0.0048	0.002	0.014	0.10	0.004	8.5
27-Jun-92	SBASIN-9	6.40	N/A	0.01	0.009	0.003	0.021	0.12	0.004	11
01-Jul-92	SBASIN-9	6.77	0.6	0.007	0.0071	0.005	0.013	0.116	0.006	10.5
08-Jul-92	SBASIN-9	6.57	0.6	0.008	0.0048	0.003	0.009	0.148	0.003	8
13-Jul-92	SBASIN-9	6.60	0.6	<0.005	0.0022	0.003	0.011	0.153	0.004	
20-Jul-92	SBASIN-9	7.03	1.2	0.008	0.0032	0.003	0.012	0.327	0.004	16.5
08-Sep-92	SBASIN-9	6.58	1.4	0.008	0.0004	0.001	0.006	0.140	0.003	5.0
09-Jun-93	SB9	5.08	0.9	0.010	0.209	0.009	0.006	0.146	0.013	1.5
22-Jul-93	SB9	6.59	0.5	0.014	0.0026	0.006	0.010	0.157	0.008	14
10-Jun-94	SB9	6.18	1.2	0.005	0.050	0.007	0.009	0.148	<0.001	
13-Jun-95	SB 9	5.63	1.3	0.011	0.0074	0.006	0.011	0.120	0.008	4
08-Jun-97	SB9	6.24	0.8		0.0166	0.008	0.012	0.211	0.011	

South Basin Monitoring - 1992 through 2000

Station 9 - Stream from Post Lake/unnamed lake to inlet of Test Lake



South Basin Sampling

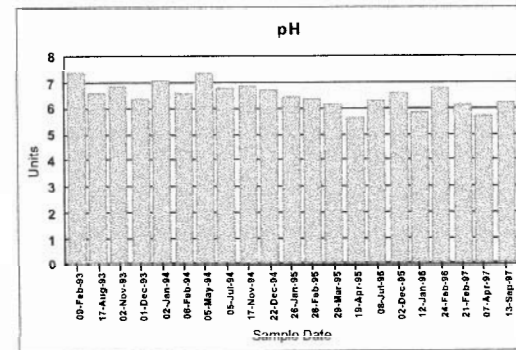
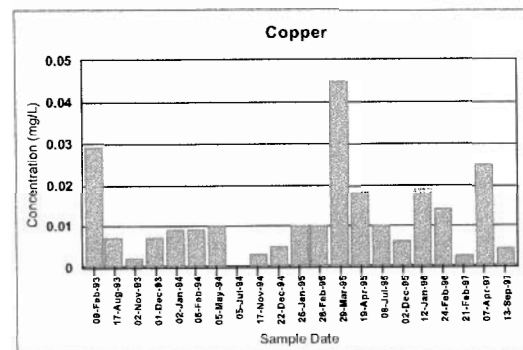
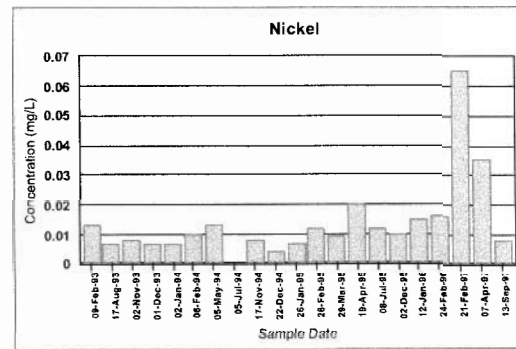
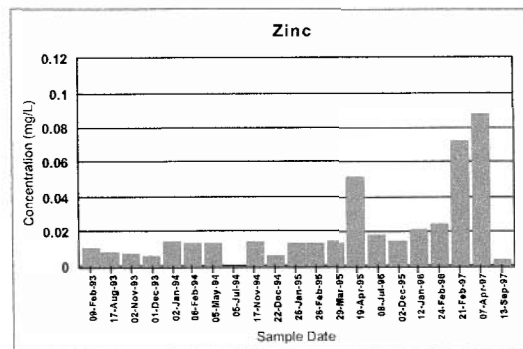
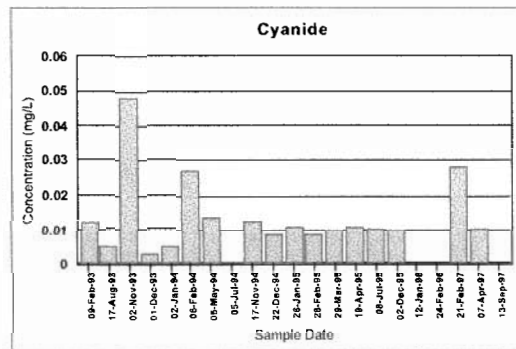
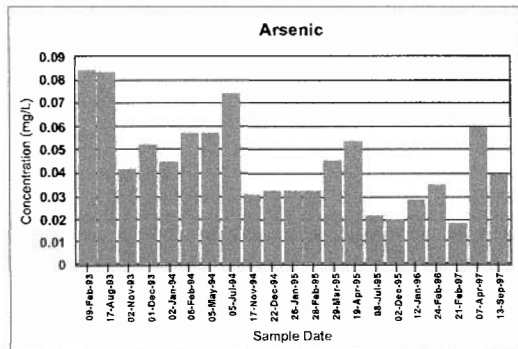
Followup to 1992 tailings spill - Spill No.92-105

Summary of Water Quality Data Collected; 1992-2000

DATE	SAMPLING STATION	pH	NFR	Total CN	Total As	Zn	TOTAL METALS			Cu	TEMP °C
							Pb	Ni			
09-Feb-93	LONG LK.#2	7.41	9.0	0.012	0.084	0.010	<0.004	0.013		0.029	
17-Aug-93	LONG LK#2	6.55	0.6	0.005	0.0830	0.008	<0.004	0.007		0.007	
02-Nov-93	LONG LK.	6.84	0.6	0.048	0.0410	0.007	<0.004	0.008		0.002	
01-Dec-93	LONG LK.	6.38	0.6	0.003	0.052	0.006	<0.004	0.007		0.007	
02-Jan-94	LONG LK.	7.06	1.8	0.005	0.045	0.014	<0.004	0.007		0.009	
06-Feb-94	LONG LK.	6.55	0.8	0.027	0.057	0.013	<0.004	0.010		0.009	
05-May-94	LONG LK.	7.41	2.5	0.014	0.057	0.013	<0.004	0.013		0.010	
05-Jul-94	LONG LK.	6.81			0.074	<0.001	<0.004	<0.001		<0.001	
17-Nov-94	LONG LK.	6.84	0.8	0.013	0.031	0.014	<0.004	0.008		0.003	
22-Dec-94	LONG LK.	6.70	0.5	0.009	0.033	0.006	<0.004	0.004		0.005	
26-Jan-95	LONG LK.	6.47	1.8	0.011	0.032	0.013	<0.004	0.007		0.010	
28-Feb-95	LONG LK.	6.39	0.2	0.009	0.033	0.012	<0.004	0.012		0.010	
29-Mar-95	LONG LK.	6.15	0.4	0.010	0.045	0.014	<0.004	0.009		0.045	
19-Apr-95	LONG LK.	5.61	33.2	0.011	0.054	0.052	0.006	0.020		0.018	
08-Jul-95	LONG LK.	6.32	1.3	0.011	0.022	0.018	0.004	0.012		0.010	
02-Dec-95	LONG LK.	6.61	0.3	0.010	0.0200	0.015	<0.004	0.010		0.006	
12-Jan-96	LONG LK.	5.83	0.5	<0.005	0.029	0.021	<0.004	0.015		0.019	
24-Feb-96	LONG LK.	6.78	0.8	<0.005	0.035	0.025	<0.004	0.016		0.014	
21-Feb-97	Long Lake	6.13		0.028	0.0186	0.073	<0.004	0.065		0.003	
07-Apr-97	Long Lake	5.68	11.4	0.011	0.0590	0.088	<0.004	0.035		0.025	
13-Sep-97	Long Lk #2	6.23	0.2	<0.005	0.0390	0.004	<0.004	0.008		0.005	

South Basin Monitoring - 1992 through 2000

Station - Long Lake - Sampling location approximately middle of lake taken mid-depth



See data sheets for actual analyses results/values.

Note: The x axis is not over time, but for sample occurrence.

Missing data on some graphs is due to "less than" values.

APPENDIX C

Copies of Bioassay Results - Env. Can. Ecotoxicology Lab.

ECOTOXICOLOGY LABORATORY
EP LABORATORIES
PRAIRIE & NORTHERN REGION
5320 - 122 STREET
EDMONTON, ALBERTA
T6H 3S5

REPORT OF TOXICITY TESTING
USING RAINBOW TROUT

RECEIVED
JUL 27 2008
YELLOW KNIFE
LABORATORY - CANADA

LAB SAMPLE NO. 00-01333

COMPANY/LOCATION: Lupin Mines, Nunavut

RESULTS TO:

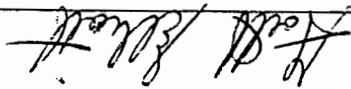
Anne Willson
EPB, NT Division
Suite 301, 3rd Floor
5204 - 50th (Franklin) Avenue
Yellowknife, NT
X1A 1E2

PURPOSE: To examine the test material to determine its toxicity to fish.

RESULT: Not Acutely Lethal; No Mortality at 100% Concentration

REPORT AUTHORIZATION: Head, Ecotoxicology Laboratory

SIGNATURE/DATE: Garth Elliott, July 21, 2000



cc. Gordon Manners, EPB, TSD

**REPORT OF TOXICITY USING
RAINBOW TROUT**

LAB SAMPLE NO. 00-01333

COMPANY/LOCATION: Lupin Mines, Nunavut

SAMPLE COLLECTED BY: D. Hohnstein

DATE/TIME SAMPLED: July 7, 2000 08:00 h
DATE/TIME RECEIVED: July 7, 2000 15:00 h
DATE/TIME TEST START: July 10, 2000 11:40 h

SAMPLE TYPE: Effluent
SAMPLE POINT: Tailings Pond No 2

SAMPLING METHOD: Grab

SAMPLE CONTAINER/VOLUME: 6 X 10 litre clear plastic containers
Total volume = 60 L

TRANSPORT INFORMATION: Sample delivered via courier, not frozen

STORAGE INFORMATION: Stored over weekend in B046, 4 degree celsius fridge

METHOD: EP Laboratories SOP# 810.0 Revision 2, for Trout Testing

in Compliance with May 1996 Amended Method:
Reference Method for Determining Acute Lethality of Effluents to
Rainbow Trout, July 1990, EPS 1/RM/13. Pass/Fail Procedure.

DEVIATION FROM "MUST" REQUIREMENTS: None

RESULT: Not Acutely Lethal, No Mortality at 100% Concentration

STATISTICS: N/A

LAB SAMPLE NO. 00-01333

TEST CONDITIONS:

SPECIES: *Oncorhynchus mykiss*

FISH PER TEST VESSEL: 10

TEST VESSEL: 50 litre aquariums

TEST VOLUME (L): 40 **SAMPLE DEPTH (cm):** 23

PHOTOPERIOD: 16h Light, 8h Dark **LUX:** 298

DILUTION WATER: Treated Edmonton City Water

Fish Not Fed 21 h Prior to Test

No pH Adjustment and All Tests Initiated Are Reported.

Aeration Continuous Throughout Test at : 6.5 ± 1.0 ml/min/L. Measured with a

Rotometer.

CHEMISTRIES:

SAMPLE APPEARANCE: Clear in color

INITIAL CHEMISTRIES: Just Prior to Setup

INITIAL	TEMPERATURE (°C)	DISSOLVED OXYGEN (%saturation)	CONDUCTIVITY (µmhos/cm)	pH
100% SAMPLE	14.9	99	910	7.3

PREAERATION: (Oil-Free Compressed) at a Rate of 6.5 ± 1.0 ml/min/L. for 30 Minutes.

LAB SAMPLE NO. 00-01333

TEST CHEMISTRIES:

TEST	TEMPERATURE (°C)				DISSOLVED OXYGEN (mg/L)		CONDUCTIVITY (µmhos/cm)		pH
	0 h	24 h	48 h	72 h	96 h	0 h	96 h	0 h	96 h

CONTROL	14.4	15.2	15.5	15.6	15.6	9.3	8.8	396	395	8.1	8.4
	100%	15.1	15.3	15.4	15.4	15.4	9.2	8.8	912	911	7.3
50%											
25%											
12.5%											
6.25%											

TEST DATA:

TEST START DATE/TIME: July 10, 2000 11:40 h

REPLICATES = None

CUMULATIVE MORTALITY/SUBLETHAL EFFECT

24 h	48 h	72 h	96 h	% MORTALITY
0	0	0	0	0
0	0	0	0	0

TEST CONCENTRATION	CONTROL	100%	50%	25%	12.5%	6.25%
--------------------	---------	------	-----	-----	-------	-------

TROUT LENGTHS AND WEIGHTS:

See attached table.

QUALITY ASSURANCE/QUALITY CONTROL:

TEST ORGANISM: (*Oncorhynchus mykiss*) Rainbow Trout Fingerlings

Source: Sun Valley Trout Farms

Lot# SVTF 0500 Tank# 3 Arrival Date: May, 2000

Mortality of Trout Stock 7 Days Prior to Test: 0.0%

Acclimation for > 2 Weeks at Temp: 15 ± 2°C

Approximate No. Of Trout Acclimated: 281

Flow of Water Through Tank (L/g of trout per day): 8.2

Litres in Tank per 10g of Trout: 6.8

Equipment List

Item	Manufacturer	Model	Serial#	Inv. #
DO Meter	YSI	57	15147	A32013
pH Meter	Orion	EA940	6268	
Conductivity Meter	WTW	LF 538	82016014	
Thermometer	ERTCO		1338	EPT13
Test Cooler #1				
Rotometer	Matheson	602		
Lighmeter	Sper		028112	

CONFORMANCE: Control Mortality within Acceptable Limits

Less Than 2% Fish Stock Mortality in the 7 Days Prior to Test
Method "Must" Requirements Followed

LAB SAMPLE NO. 00-01333

QUALITY CONTROL:

Reference Toxicant: Phenol

Reference Toxicant Test # 00-0005-T

Date of Test: June 12, 2000

Reference Toxicant Analyst: C.H., W.A., N.K.

LC₅₀-96 h = 9.74 ppm

95% Confidence Limits: 8.76 - 10.8 ppm

HISTORIC GEOMETRIC MEAN:

LC₅₀-96 h = 9.53 ppm

Warning Limits (2SD): 8.09 - 11.2 ppm

CONFORMANCE: Control Mortality within Acceptable Limits

Reference Toxicant within Warning Limits

Less Than 2% Fish Stock Mortality in the 7 Days Prior to Test

Method "Must" Requirements Followed

TEST ANALYSTS:

Christina Heise

Initial: CH

Lisa Pennell

Initial: LP

DATA VALIDATION:

Christina Heise

Initial: CH

LAB SAMPLE NO : 00-01333

Trout Lengths and Weights

Pass / Fail

	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
	LENGTH	LENGTH	LENGTH	LENGTH	WEIGHT	WEIGHT	WEIGHT
	(cm)	(cm)	(cm)	(cm)	(g)	(g)	(g)
1	3.9	0.49					
2	4.3	0.70					
3	4.7	0.97					
4	4.8	0.94					
5	4.5	0.77					
6	4.7	1.01					
7	4.9	1.08					
8	4.6	0.82					
9	4.0	0.62					
10	4.2	0.66					
AVERAGE	4.5	0.81					
STD DEV.	0.3	0.19					
RANGE	3.9 - 4.9	0.49 - 1.08					
VOL (L)		40					40
TOT WT (g)							7.38
LOADING DENSITY (g/L)							0.18

Glossary of Terms

°C - degree(s) Celsius
 cm - centimeter(s)
 d - day(s)
 DO - dissolved oxygen (concentration)
 EC₅₀ - median effective concentration
 g - gram(s)
 h - hour(s)
 H₂O - water
 IC₅₀ - 50% inhibiting concentration
 LC₅₀ - median lethal concentration
 L - litre(s)
 mg - milligram(s)
 min - minute(s)
 mL - millilitre(s)

mm - millimetre(s)
 mS - millisiemens
 NaCl - sodium chloride
 N/A - non applicable
 OAS - Osmotic Adjustment Solution
 ppm - parts per million
 µg - microgram
 µL - microlitre
 > - greater than
 < - less than
 ≥ - greater than or equal to
 ≤ - less than or equal to
 ± - plus or minus
 % - percentage or percent

ECOTOXICOLOGY LABORATORY
EP LABORATORIES
PRAIRIE & NORTHERN REGION
5320 - 122 STREET
EDMONTON, ALBERTA
T6H 3S5

REPORT OF TOXICITY TESTING
USING RAINBOW TROUT

LAB SAMPLE NO. 00-01575

COMPANY/LOCATION: *Lupin Mines, Nunavut*

RECEIVED

SEP 19 2000

ENVIRON - CANADA
YELLOWKNIFE

RESULTS TO: Anne Wilson
EPB, NT Division
Suite 301, 3rd Floor
5204 - 50th (Franklin) Avenue
Yellowknife, NT
X1A 1E2

PURPOSE: *To examine the test material to determine its toxicity to fish.*

RESULT: *Not Acutely Lethal; No Mortality at 100% Concentration*

REPORT AUTHORIZATION: Head, Ecotoxicology Laboratory

SIGNATURE/DATE: Garth Elliott, September 14, 2000



cc. Gordon Manners, EPB, TSD

**REPORT OF TOXICITY USING
RAINBOW TROUT**

LAB SAMPLE NO. 00-01575

COMPANY/LOCATION: Lupin Mines

SAMPLE COLLECTED BY: MacKenzie Sawyer

DATE/TIME SAMPLED: August 28, 2000 0900 h

DATE/TIME RECEIVED: August 29, 2000 0830 h

DATE/TIME TEST START: August 29, 2000 1510 h

SAMPLE TYPE: Effluent

SAMPLE POINT: Station #95-10

SAMPLING METHOD: Grab

SAMPLE CONTAINER/VOLUME: 4 X 20 L white pails
Total volume ~ 75 L

TRANSPORT INFORMATION: Sample delivered via courier, not frozen

STORAGE INFORMATION: No storage required

METHOD: EP Laboratories SOP# 810.0 Revision 2, for Trout Testing
in Compliance with May 1996 Amended Method:
Reference Method for Determining Acute Lethality of Effluents to
Rainbow Trout, July 1990, EPS 1/RM/13. Pass/Fail Procedure.

DEVIATION FROM "MUST" REQUIREMENTS: None

RESULT: Not Acutely Lethal; No mortality at 100% Concentration

STATISTICS: N/A

TEST CONDITIONS:

SPECIES: *Oncorhynchus mykiss*

FISH PER TEST VESSEL: 10

TEST VESSEL: 50 L aquariums

TEST VOLUME (L): 40 **SAMPLE DEPTH (cm):** 23

PHOTOPERIOD: 16h Light, 8h Dark

Lux: Control - 301 100% - 294

DILUTION WATER: Treated Edmonton City Water

Fish Not Fed 24 h Prior to Test

No pH Adjustment and All Tests Initiated Are Reported.

Aeration Continuous Throughout Test at : 6.5 ± 1.0 ml/min/L. Measured with a Rotometer.

CHEMISTRIES:

SAMPLE APPEARANCE: Clear

INITIAL CHEMISTRIES: Just Prior to Setup

INITIAL	TEMPERATURE (°C)	DISSOLVED OXYGEN (%saturation)	CONDUCTIVITY (µmhos/cm)	pH
100% SAMPLE	16.2	104	960	7.0

PREAERATION: (Oil-Free Compressed) at a Rate of 6.5 ± 1.0 ml/min/L for 110 Minutes

LAB SAMPLE NO. 00-01575

TEST CHEMISTRIES:

TEST	TEMPERATURE (°C)					DISSOLVED OXYGEN (mg/L)		CONDUCTIVITY (µmhos/cm)		pH	
	0 h	24 h	48 h	72 h	96 h	0 h	96 h	0 h	96 h	0 h	96 h
CONTROL	14.0	14.7	14.9	14.8	14.8	9.2	9.1	356	362	8.3	8.3
100 %	15.1	15.4	15.5	15.5	15.4	9.2	8.9	956	963	6.8	7.1

TEST DATA:

TEST START DATE/TIME: August 29, 2000 1510 h

REPLICATES = None

CUMULATIVE MORTALITY/SUBLETHAL EFFECT					
TEST CONCENTRATION	24 h	48 h	72 h	96 h	% MORTALITY
CONTROL	0	0	0	0	0
100 %	0	0	0	0	0

LAB SAMPLE NO. 00-01575

TROUT LENGTHS AND WEIGHTS:

See attached table.

QUALITY ASSURANCE/QUALITY CONTROL:

TEST ORGANISM: (*Oncorhynchus mykiss*) Rainbow Trout Fingerlings

Source: Sun Valley Trout Farm

Lot# SVTF 0700 **Tank#** 3 **Arrival Date:** July 18, 2000

Mortality of Trout Stock 7 Days Prior to Test: 0.0 %

Acclimation for > 2 Weeks at Temp: 15°C ± 2.0°C

Approximate No. Of Trout Acclimated: 99

Flow of Water Through Tank (L/g of trout per day): 17.0

Litres in Tank per 10g of Trout: 12.3

Equipment List

Item	Manufacturer	Model	Serial#	Inv.#
DO Meter	YSI	57	15147	A32013
pH Meter	Orion	EA940	6268	
Conductivity Meter	WTW	LF 538	82016014	
Thermometer	ERTCO		1338	EPT13
Test Cooler #1				
Rotometer	Matheson	602		
Lightmeter	Sper		028112	

CONFORMANCE: Control Mortality within Acceptable Limits
Less Than 2% Fish Stock Mortality in the 7 Days Prior to Test
Method "Must" Requirements Followed

LAB SAMPLE NO. 00-01575

QUALITY CONTROL:

Reference Toxicant: Phenol

Reference Toxicant Test # 00-0008-T

Date of Test: August 21, 2000

Reference Toxicant Analyst: L.P., C.H.

LC₅₀- 96 h = 8.72 ppm

95% Confidence Limits: 8.40 – 11.3 ppm

HISTORIC GEOMETRIC MEAN:

LC₅₀- 96 h = 9.53 ppm

Warning Limits (2SD): 8.09 – 11.2 ppm

CONFORMANCE: Control Mortality within Acceptable Limits
Reference Toxicant within Warning Limits
Less Than 2% Fish Stock Mortality in the 7 Days Prior to Test
Method "Must" Requirements Followed

TEST ANALYSTS:	Wendy Antonioli	Initial: <u>WA</u>
	Lisa Pennell	Initial: <u>LP</u>
	Christina Heise	Initial: <u>LP for CH</u>

DATA VALIDATION:	Nancy Kruper	Initial: <u>NK</u>
------------------	--------------	--------------------

LAB SAMPLE NO: 00-01575

Trout Lengths and Weights Pass / Fail

	CONTROL	CONTROL	CONTROL	CONTROL	100%	100%	100%	100%
	LENGTH (cm)	LENGTH (cm)	WEIGHT (g)	WEIGHT (g)	LENGTH (cm)	LENGTH (cm)	WEIGHT (g)	WEIGHT (g)
1	5.0		1.12					
2	3.9		1.18					
3	4.7		0.95					
4	5.1		1.15					
5	5.0		1.28					
6	5.4		1.60					
7	5.4		1.46					
8	4.3		1.06					
9	4.7		1.01					
10	5.8		2.00					
AVERAGE	4.9		1.28					
STD DEV.	0.6		0.32					
RANGE	3.9 - 5.8		0.95 - 2.00					
VOL (L)			40				40	
TOT WT (g)			12.81				14.05	
LOADING DENSITY (g/L)			0.32				0.35	

Glossary of Terms

°C - degree(s) Celsius

cm - centimeter(s)

d - day(s)

DO - dissolved oxygen (concentration)

EC₅₀ - median effective concentration

g - gram(s)

h - hour(s)

H₂O - water

IC₅₀ - 50% inhibiting concentration

LC₅₀ - median lethal concentration

L - litre(s)

mg - milligram(s)

min - minute(s)

mL - millilitre(s)

mm - millimetre(s)

mS - millisiemens

NaCl - sodium chloride

N/A - non applicable

OAS - Osmotic Adjustment Solution

ppm - parts per million

µg - microgram

µL - microlitre

> - greater than

< - less than

≥ - greater than or equal to

≤ - less than or equal to

± - plus or minus

% percentage or percent

**ECOTOXICOLOGY LABORATORY
EP LABORATORIES
PRAIRIE & NORTHERN REGION
5320 - 122 STREET
EDMONTON, ALBERTA
T6H 3S5**

**REPORT OF TOXICITY TESTING
USING DAPHNIA MAGNA**

LAB SAMPLE NO. 00-01574

COMPANY/LOCATION: *Lupin Mines, Nunavut*

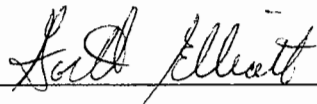
RESULTS TO: **Anne Wilson**
EPB, NT Division
Suite 301, 3rd Floor
5204 – 50th (Franklin) Avenue
Yellowknife, NT
X1A 1E2

PURPOSE: *To examine the test material to determine its toxicity to daphnia.*

RESULT: *Not Acutely Lethal; 3.3% Mortality at 100% Concentration*

REPORT AUTHORIZATION: **Head, Ecotoxicology Laboratory**

SIGNATURE/DATE: *Garth Elliott, September 14, 2000*



cc. **Gordon Manners, EPB, TSD**

**REPORT OF TOXICITY USING
DAPHNIA MAGNA**

LAB SAMPLE NO. 00-01574

COMPANY/LOCATION: Lupin Mines

SAMPLE COLLECTED BY: MacKenzie Sawyer

DATE/TIME SAMPLED: August 28, 2000 0900 h

DATE/TIME RECEIVED: August 29, 2000 0830 h

DATE/TIME TEST START: August 29, 2000 1300 h

SAMPLE TYPE: Effluent

SAMPLE POINT: Station # 95-10

SAMPLING METHOD: Grab

SAMPLE CONTAINER/VOLUME: 4 X 20 L white pails
Total volume ~ 75 L

TRANSPORT INFORMATION: Sample delivered via courier, not frozen

STORAGE INFORMATION: No storage required

METHOD: EP Laboratories SOP# 820.0 Revision 1, for Daphnia Magna Testing
in Compliance with May 1996 Amended Method:
Reference Method for Determining Acute Lethality of Effluents to
Daphnia magna, July 1990, EPS 1/RM/14. Pass/Fail Procedure.

DEVIATION FROM "MUST" REQUIREMENTS: None

RESULT: Not Acutely Lethal; 3.3% Mortality at 100% Concentration

STATISTICS: N/A

TEST CONDITIONS:

SPECIES: *Daphnia magna* <= 24 h old

DAPHNIA PER TEST VESSEL: 10

TEST VESSEL: 300 ml beaker

TEST VOLUME (ml): 150

PHOTOPERIOD: 16h Light, 8h Dark

LUX: 759

DILUTION WATER: Treated Edmonton City Water

No pH Adjustment and All Tests Initiated Are Reported.

CHEMISTRIES:

SAMPLE APPEARANCE: Clear Liquid

INITIAL CHEMISTRIES: Just Prior to Setup

INITIAL	TEMPERATURE (°C)	DISSOLVED OXYGEN (%saturation)	CONDUCTIVITY (µmhos/cm)	pH
100% SAMPLE	17.2	111	850	6.7

Hardness (control): 182 mg CaCO₃/L

Hardness (100%): 231 mg CaCO₃/L

PREAERATION: (Oil-Free Compressed) at a Rate of 25-50 ml/min/L
for 30 Minutes.

LAB SAMPLE NO. 00-01574

TEST CHEMISTRIES:

TEST	TEMPERATURE (°C)	DISSOLVED OXYGEN (mg/L)	CONDUCTIVITY (µmhos/cm)	pH
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CONCENTRATIONS	0 h	48 h	0 h	48 h	0 h	48 h	0 h	48 h
----------------	-----	------	-----	------	-----	------	-----	------

CONTROL A	20.3	19.4	8.2	8.5	316	322	8.3	8.3
CONTROL B	20.0	19.3	8.2	8.5	318	323	8.4	8.3
CONTROL C	20.0	19.1	8.2	8.5	317	327	8.4	8.3
100% A	19.5	19.0	8.7	8.5	838	860	7.1	7.2
100% B	19.4	19.1	8.7	8.5	845	872	7.0	7.1
100% C	19.4	19.1	8.7	8.5	846	881	7.0	7.1

TEST DATA:

TEST START DATE/TIME: August 29, 2000 1300 h

REPLICATES = None

CUMULATIVE MORTALITY / IMMOBILIZATION

TEST CONCENTRATION	24 h #immobile	48 h #dead/immobile	% MORTALITY	% IMMOBILE
CONTROL A	0	0/0	0	0
CONTROL B	0	0/0	0	0
CONTROL C	0	0/0	0	0
100% A	0	0/0	0	0
100% B	0	1/1	10	10
100% C	0	0/0	0	0

Mean % Mortality = $1/30 = 3.3\%$ Mean % Immobilized = $1/30 = 3.3\%$

LAB SAMPLE NO. 00-01574

QUALITY ASSURANCE/QUALITY CONTROL:

TEST ORGANISM: (*Daphnia magna*)

Stock neonates used for Testing: G – July 18, 2000

Most Recent Estimate of Time to First Brood: 7.7 days

Average Neonates per Brood: 17.2

Frequency of ephippia from Adults of Neonates: 0

Any special handling during test: *Daphnia* checked under scope to confirm lethality.

CONFORMANCE: Control Mortality within Acceptable Limits

Ephippia must not be Present in the Culture

**Less Than 25% of Brood Stock Mortality in the 7 days prior to a Test
Method "Must" Requirements Followed**

Equipment List

Item	Manufacturer	Model	Serial#	Inv.#
DO Meter	YSI	54	4825	079941
pH Meter	Orion	EA 940	6262	
Conductivity Meter	WTW	LF538	82016073	
Light Meter	Sper		020216	
Thermometer(s)	ERTCO	76 mm	K97-132	EPT08

LAB SAMPLE NO. 00-01574

QUALITY CONTROL:

Reference Toxicant: Sodium Chloride

Reference Toxicant Test # 00-0007-D

Date of Test: August 16, 2000

Reference Toxicant Analyst: L.P., C.H.

LC₅₀- 48 h = 5800 ppm

95% Confidence Limits: 5550 - 6060 ppm

HISTORIC GEOMETRIC MEAN:

LC₅₀- 48 h = 5750 ppm

Warning Limits (2SD): 4940 - 6700 ppm

**CONFORMANCE: Control Mortality within Acceptable Limits
Reference Toxicant within Warning Limits
Less than 25% Brood Stock mortality in the 7 days prior to a Test
Method "Must" Requirements Followed**

TEST ANALYSTS:

Nancy Kruper

Initial: NK

Wendy Antonioli

Initial: WA

DATA VALIDATION:

Nancy Kruper

Initial: NK

Glossary of Terms

°C - degree(s) Celsius

cm - centimeter(s)

d - day(s)

DO - dissolved oxygen (concentration)

EC₅₀ - median effective concentration

g - gram(s)

h - hour(s)

H₂O - water

IC₅₀ - 50% inhibiting concentration

LC₅₀ - median lethal concentration

L - litre(s)

mg - milligram(s)

min - minute(s)

mL - millilitre(s)

mm - millimetre(s)

mS - millisiemens

NaCl - sodium chloride

N/A - non applicable

OAS - Osmotic Adjustment Solution

ppm - parts per million

µg - microgram

µL - microlitre

> - greater than

< - less than

≥ - greater than or equal to

≤ - less than or equal to

± - plus or minus

% percentage or percent

APPENDIX D

Copy of QC data from Norwest Labs Ltd.

(Under Separate Cover)

APPENDIX E

2000 Thermistor Installation Report - BGC Engineering Inc.

(Under Separate Cover)