

ECHO BAY MINES LTD.

9818 International Airport
Edmonton, Alberta
T5J 2T2

October 14, 2002

Our File: NWB1LUP0008 Annual02
Your File: Water Register
NWB1LUP0008

Executive Director
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0B 1J0

Dear Sir:

**RE: Echo Bay Mines Ltd., Lupin Gold Mine, Contwoyto Lake, NT.; Water Licence
NWB1LUP0008; 2002 Annual Geotechnical Inspection**

As partial fulfillment of Part D, Item 6(g) of Water Licence NWB1LUP0008, please find enclosed three copies of the final Report entitled "**2002 Geotechnical Inspection of Perimeter Tailings Dams; Lupin Mine, Nunavut**". Further to the emailed PDF version that was sent on October 10, 2002, this final report contains all the figures that were excluded from the electronic copy due to file size.

If you have any questions as to the above or attached reports, please feel free to contact me at (780) 890-8794, Lupin.

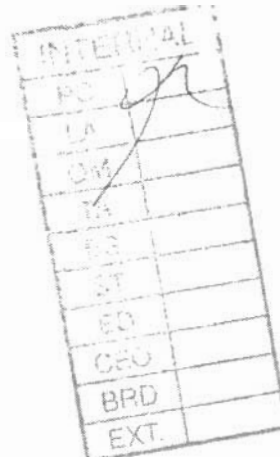
Yours truly,



D. Hohnstein
Environmental Coordinator, Lupin

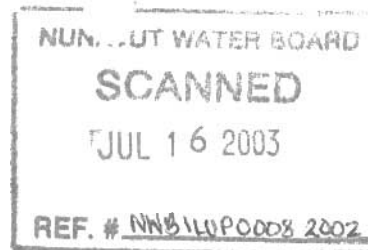
Incl.
3 Copies of Final Report

cc H. Ducasse
B. Danyluk
Mill Operations



ECHO BAY MINES LTD.

9818 International Airport
Edmonton, Alberta
T5J 2T2



October 10, 2002

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Executive Director
Nunavut Water Board
P.O. Box 119
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Dear Sir:

RE: Echo Bay Mines Ltd., Lupin Gold Mine, Contwoyto Lake, NT.; Water Licence NWB1LUP0008; 2002 Annual Geotechnical Inspection

As partial fulfillment of Part D, Item 6(g) of Water Licence NWB1LUP0008, please find attached a PDF file version of the Report entitled "**2002 Geotechnical Inspection of Perimeter Tailings Dams; Lupin Mine, Nunavut**" and the site Project Memorandum outlining the maintenance requirements of the inspection. Please note that this is an unsigned (scanned versions currently not accepted) and text only version due to the complete file size. Three hard copies of the report will be forwarded upon receipt from BGC Engineering.

The Geotechnical Inspection was carried out by Mr. James W. Cassie, M.Sc., P. Eng. with BGC Engineering Inc. of Calgary, Alberta on August 12th to 13th, 2002. An on-site "Project Memorandum" was issued to Echo Bay on August 14th, 2001. This memorandum summarized the initial findings of the inspection and was used as a basis for carrying out any required repairs noted prior to receiving the final report.

All required actions identified in the report have been addressed and are summarized in the following table. As all repairs have been completed, the implementation plan as requested within Item 6(g) of the Licence is considered to have been completed within this report as there are no further items to be addressed.

Additional work was completed on Dam3 with regard to contouring and grading of the Cell 1a surface to try and prevent the erosion problems that recur on an annual basis at spring thaw along the perimeter. Please refer to the photos showing work completed in this area.

.../2

In addition to the physical inspection of the TCA, BGC Engineering Inc. reviewed annual weather data (temperature, precipitation) and thermistor data which included the recently installed strings (2000) within Dams 1a and 2. Please note instrumentation in each section.

Should you have any questions or comments regarding the above and included report, please feel free to contact the undersigned at (780) 890-8794, Lupin.

Yours truly,



D. Hohnstein
Environmental Coordinator, Lupin

Incl.

New Photos

PDF file version of 2002 Geotechnical Inspection of Perimeter Dams; Lupin Mine, Nunavut

PDF file version of on-site Project Memorandum for maintenance requirements

cc H. Ducasse
B. Danyluk
Mill Operations

COPY

ECHO BAY MINES LTD.

2002 GEOTECHNICAL INSPECTION OF PERIMETER TAILINGS DAMS

LUPIN MINE NUNAVUT

FINAL

PROJECT NO.: 0256-004-02
DATE: OCOBER 9, 2002

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Project No. 0256-004-02

October 9, 2002

Mr. Dave Hohnstein
Echo Bay Mines Ltd.
Lupin Operation
9818 International Airport
Edmonton, Alberta
T5J 2T2

Re: 2002 Report on Annual Geotechnical Inspection
Perimeter Tailings Dams, Lupin Mine, Nunavut

Dear Dave:

Please find attached our final report on the annual geotechnical inspection of the perimeter tailings dams at Lupin Mine, which was carried out on August 12 and 13, 2002. As is the custom, a site inspection memo was left with you outlining items requiring maintenance.

Thank you to you and your staff for the hospitality shown during my site visit. If there are any questions regarding this report, please contact the undersigned at your convenience.

Yours truly,

BGC ENGINEERING INC.

per:

James W. Cassie, M.Sc., P.Eng.
Specialist Geotechnical Engineer
(direct line 403/250-5185 ext. 103)

encl.: Final Report

JWC/sf

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LIMITATIONS OF REPORT

This report was prepared by BGC Engineering Inc. (BGC) for Echo Bay Mines Ltd. The material in it reflects the judgment of BGC staff in light of the information available to BGC at the time of report preparation. Any use which a Third Party makes of this report, or any reliance on decisions to be based on it are the responsibility of such Third Parties. BGC Engineering Inc. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

As a mutual protection to our client, the public, and ourselves, all reports and drawings are submitted for the confidential information of our client for a specific project and authorization for use and / or publication of data, statements, conclusions or abstracts from or regarding our reports and drawings is reserved pending our written approval.

1.0 INTRODUCTION

Lupin Mine, owned and operated by Echo Bay Mines Ltd., is located 285 km south-east of Kugluktuk and 400 km north-east of Yellowknife on Contwoyto Lake, as illustrated on Figure 1, at approximately 65°46'N and 111°14'W. Echo Bay's Nunavut Water Board's License (NWB1LUP0008) requires that the tailings containment area (TCA) be inspected annually by a qualified Geotechnical Engineer. As such, Mr. D. Hohnstein, Environmental Co-ordinator for Lupin Mine, requested that BGC Engineering Inc. (BGC) conduct an inspection of the tailings facility perimeter embankments. A proposal to conduct this inspection, dated February 12, 2002, was submitted and Requisition No. L59942 was issued to BGC on June 20, 2002.

This inspection and the preparation of a report are required in partial satisfaction of the Lupin Mine Water License obligations. Other conditions in the Water License that apply to the annual inspection are as follows:

- a freeboard limit of 1.0 m should be maintained at all times;
- seepage from the TCA be minimised;
- any seepage that occurs should be collected and returned immediately;
- any erosion of the facilities should be addressed immediately; and
- the inspection report should be forwarded to the Water Board within 60 days of the inspection date.

The objectives of the inspection are to visually assess the performance of the structures from a geotechnical perspective and to bring deficiencies and points of concern to Echo Bay's attention.

Previous annual inspection reports by Golder Associates Ltd. and BGC Engineering Inc. should be reviewed for observations and recommendations prior to 2002.

2.0 TAILINGS CONTAINMENT AREA OPERATION DESCRIPTION

As illustrated on Figure 2, tailings storage at Lupin Mine utilises a number of low embankments which are arranged to provide five cells for solids accumulation, some supernatant water storage within these cells, supernatant runoff storage accumulation (Pond 1) and an adjacent area (Pond 2) for transport water conditioning and staged release. In that none of the tailings water is recycled to the mill, aged water is typically transferred from Pond 2 to the environment once a year (usually beginning mid-July). Following this discharge, tailings water is transferred from Pond 1 to Pond 2 for subsequent ageing. During the transfer, water treatment chemicals are added, if required.

Golder Associates (1992)¹ provides dam design information for Dams 4, 5 and 6 and the End Lake Dam. For these dams, a geosynthetic liner is installed within the upstream portion of the embankment and then anchored into the frozen foundation, except for Dam 4. On Dam 4, the liner extends 15 m upstream from the upstream side. For each of these dams, the top of the liner was to be situated 0.5m below the physical crest of the dams. Dam 4 has a Run-of-Mine toe drain as well.

Lupin Mine went into care and maintenance mode in January 1998 and remained at that status until December 1999 when a decision was made to resume operations. Mill production resumed in April 2000 with Cell 3 used for tailings placement. Since then, Cell 3 is generally used for summer deposition of tailings and Cell 5 is used for winter deposition. The following points detail the water management operations for the TCA for this year:

- Transfer of aged water from Pond 2 to the environment, via the siphons over Dam 1A, began on July 15, 2002. This transfer operation was completed on September 7, 2002 with approximately 3,093,464 m³ of water conveyed.
- Transfer of tailings water from Pond 1 to Pond 2, via the siphons over J-Dam, began June, continued from August 2 to the 23rd and then again from August 29 until September 4, 2002. Approximately 831,166 m³ of water was conveyed.

Table 1 summarises the water level elevations within the TCA, as provided by Echo Bay:

Table 1 Summary of Summer Water Levels Within TCA
(Data Supplied by Echo Bay Mines)

Location	Jul. 8, 2002 Water Elevation (m)	Aug. 5, 2002 Water Elevation (m)	Aug. 15, 2002 Water Elevation (m)
Pond 1	484.667	484.199	-
Pond 2	484.721	481.423	481.07
Cell 4	486.413	486.179	-
Cell 5	-	485.505	-

The pond heights noted on July 8th were the highest values for the year, based on the data supplied to BGC.

¹ Golder Associates Ltd. 1992. 1992 Perimeter Dam Construction Drawings. Issued for tender to Echo Bay Mines Ltd., February 1992, 4 sheets.

Figures 3 and 4 provide a graphical representation of the 2001 and 2002 (to-date) monthly temperature and precipitation values versus the long-term mean values (which have been recorded since 1982). Figure 3 indicates that the 2001 temperature values were slightly warmer than typical in the initial portion of the year. The 2002 readings were colder than average except for the months of June and July when typical values were recorded. Figure 4 illustrates that precipitation in 2001 was significantly wetter in the months of March to May followed by a drier than typical June. Overall, the total precipitation in 2001 amounted to 286 mm, approximately 7% lower than the mean value of 309 mm. Precipitation values for 2002 were variable versus the monthly mean values but both June and July were wetter than typical.

3.0 INSPECTION CONDITIONS AND APPROACH

3.1 General

Mr. Jim Cassie, P. Eng., conducted the inspection on August 12, 2002, commencing at about 12:30 a.m. and concluding the next day. The temperature during the inspection was approximately 5°C under cloudy, but generally clear, visual conditions. Some rain fell on the morning of August 13th. In the week preceding the inspection (since Aug. 6th), approximately 38 mm of rain had fallen, including 29 mm on a single day.

At the time of the inspection, tailings were being deposited on the southern side of Cell 3, uphill from Dam 6. Both of the sets of decant siphon pipes at J-dam (Pond 1 water into Pond 2) and Dam 1A (Pond 2 water discharge to the environment) were in use during the inspection.

Each of the embankments was inspected on foot. A camera and Dictaphone were used to record pertinent observations concerning both the physical conditions and seepage. In general, the crest and upstream slope of a given embankment were inspected first, followed by inspection of the downstream slope by walking along the toe of the slope. The transcribed Dictaphone notes and photographs constitute the field record (the Field Memo which remains in the office of BGC) and provide the basis for this formal report. Before leaving the site, a summary memo regarding tailings area maintenance items was prepared and reviewed with Mr. Dave Hohnstein from Echo Bay; this memo is attached in Appendix 1. Messrs Cassie and Hohnstein also toured the TCA on the morning August 15th to discuss the inspection findings.

3.2 Instrumentation

Seacor Environmental Engineering Inc. previously installed four thermistor strings in Dam #4 in October 1995, along with several other cables in the reclaimed tailings area. In addition, BGC (2000)² outlines the installation details of an additional four thermistor cables in Dams 1A and 2. Long term plots of the instrumentation data still being monitored by site staff are provided in Appendix 2. An interpretation of this data is provided on the individual dam sheets.

² BGC Engineering Inc. 2000. Thermistor Installation Program, Dam 1A, Dam 2, M Dam, Cell 1 and Esker, Lupin Mine, Nunavut. Report submitted to Echo Bay Mines Ltd., Project No. 0256-002-01, December 11, 2000, 7 pages plus figures and appendices.

4.0 FINDINGS AND CONCLUSIONS

The results of the inspection of each of the structures are presented on the following pages in standardised format, complemented by a selection of site photographs. Refer to Figure 2 for the location of each structure. Specific maintenance requirements are documented on each of the individual sheets and again in the summary memo provided in Appendix 1.

In general, the inspection confirms that the perimeter embankments are in good condition. Minor longitudinal cracking and some minor erosional gullies are visible at the toe of some of the dams, but no significant concerns are expressed at the current time.

Currently, four thermistors are installed in Dams 1A and 2 and some recommended cables are still to be installed. Four cables are also monitored in Dam 4. Over the last year, the subsurface thermal regime has remained subzero with no signs of warming at depth. Continued vigilance with regards to thermistor monitoring should be undertaken, especially when summer pond levels are high. It should be noted and stressed that subsurface thermal data should be input and plotted immediately after its collection. The objective of collecting this data is to provide proactive assessment of potentially deteriorating performance of the dams, and hence, the data should be interpreted immediately after its collection.

In addition to monitoring of instrumentation, visual inspection of the downstream toe area of all Pond 2 dams should be carried out to determine if any seepage is being initiated as pond levels increase. Should the Pond 2 level rise such that water is impounded by Dams #1B and #1C, then visual inspection of the toe of these dams should also be initiated.

DAM 1A

LOCATION:	West side of Pond 2.
FUNCTION:	Major perimeter closure for water retention; carries siphon pipes for water decant system.
LENGTH:	+/- 250 m
MAX HEIGHT:	+/- 8 m above d/s tundra.
AS-BUILT ELEVATION:	486.268 m
CREST WIDTH AND CONDITION:	7 to 8 m; surfaced with esker material, but not travelled because of the siphons. One minor sinkhole noted on crest proximal to thermistor installation. No significant cracking evident; condition is good.
RIPRAP:	Run of Mine rockfill; broadly graded; good condition.
BACKSLOPE:	Approx. 1.5H:1V; variably armoured with cobbles and boulders; some runoff erosion rills present; no evidence of cracking.
TOE BERM:	Minor longitudinal cracking and slumping still occurring at oversteepended toe, adjacent to decant pipes.
SEEPAGE:	No evidence of seepage.
INSTRUMENTATION:	<p>Thermistor D1A-00-1, just south of the mid-point of the dam, displayed an active layer of just less than 3 m in October 2001 and approximately 2 m depth by mid-September 2002. All nodes below active layer depth are subzero. Nodes below depth of 9 m (situated approximately below the embankment fill) are colder than -3°C with no signs of significant warming.</p> <p>Thermistor D1A-00-02 is located towards the north end of the dam. Active layers depths in excess of 3.3 m were recorded in October 2001 and mid-September 2002. No indications of warming at depth. Nodes below depth of 10 m appear to be colder than -3.5°C.</p>

DAM 1A CONTINUED

MAINTENANCE

RECOMMENDATIONS: Minor crest sinkhole to be backfilled. Downstream toe berm sideslope needs to be flattened to prevent recurrence of cracking.

CONCLUSIONS: The dam is in good condition with no evidence of seepage passing through or beneath the dam. Need to monitor instrumentation regularly and visually inspect downstream toe as Pond 2 level increases.

DAM 1B

LOCATION:	West side of Pond 2.
FUNCTION:	Minor perimeter closure for water retention; pond level is below dam base elevation thus currently functioning only as a road embankment.
LENGTH:	+/- 200 m
MAX HEIGHT:	+/- 2.5 m above d/s tundra.
AS-BUILT ELEVATION:	485.826 m
CREST WIDTH AND CONDITION:	5 to 6 m wide; surfaced with esker material so that this dam may also function as a roadway for access around the perimeter of the area. Crest condition is good.
RIPRAP:	Run of Mine rockfill; variable sizes; undulating; disturbed in areas but in good condition overall.
BACKSLOPE:	Approx. 1.5H:1V with minor runoff erosion rills and a toe-of-slope roadway berm. No cracking observed.
SEEPAGE:	No comment possible; no water head being retained by the structure.
MAINTENANCE RECOMMENDATIONS:	None currently required.
CONCLUSIONS:	The structure is in good condition; it should be monitored for seepage if Pond 2 rises sufficiently to place a water head against the dam.

DAM 1C

LOCATION:	West side of Pond 2.
FUNCTION:	Minor perimeter closure for water retention: currently retaining no water other than small puddles. Currently functioning only as a road embankment.
LENGTH:	+/- 230 m
MAX HEIGHT:	+/- 2.0 m above d/s tundra.
AS-BUILT ELEVATION:	485.88 m
CREST WIDTH AND CONDITION:	+/- 9 m wide; surfaced with esker material, so that this dam may also function as a roadway, although the downstream toe roadway appears more commonly used. Crest condition is good.
RIPRAP:	Run of Mine rockfill; some minor disturbances noted; overall condition satisfactory.
BACKSLOPE:	Approx. 3H:1V, smooth slope. Some erosional gullies formed. Access road berm appears in good condition.
SEEPAGE:	No comment possible; no water currently being retained by the structure.
MAINTENANCE RECOMMENDATIONS:	No maintenance required currently.
CONCLUSIONS:	The structure is in good condition; it should be monitored for seepage if Pond 2 rises sufficiently to place a water head against the dam.

DAM 2

LOCATION:	North end of Pond 2.
FUNCTION:	Major perimeter closure for water retention; natural pond downstream of the dam.
LENGTH:	+/- 350 m
MAX HEIGHT:	+/- 5.5 m above d/s tundra.
AS-BUILT ELEVATION:	486.305 m
CREST WIDTH AND CONDITION:	Approx. 6 m; surfaced with esker material and used as the primary traffic route. There is a toe-of-slope berm roadway along the northeast portion of the dam. Crest condition is good; no cracking is evident.
RIPRAP:	Run of Mine rock forms convex-upward, gently sloped upstream face; slight erosional scarp formed at higher water level; good condition.
BACKSLOPE:	Approx. 1.5H:1V with one significant erosion gulley near the north abutment. Minor longitudinal cracking at the toe of the access road berm.
SEEPAGE:	One small seepage discharge point again noted at the toe of the northeast abutment. In 1998, a survey shot of same seepage discharge point indicated that the point was higher in elevation than the upstream pond level. This seepage discharge appeared recently (according to site staff) in response to rainfall.
INSTRUMENTATION:	Thermistor D2-00-02 is located at the north end of the crest. Active layer depth was greater than 2.2 m in October 2001 and mid-September 2002. Temperatures at depth are subzero. Below 5 m depth (approximate bottom of embankment fill), temperatures are colder than -1.5°C . At depth, foundation zone appears to be cooling over the longer term.

DAM 2 CONTINUED

INSTRUMENTATION:	Thermistor D2-00-03 is situated near the mid-point of the dam. Active layer depths of greater than 2 m in October 2001 and 3 m in August 2002. One warm temperature reading recorded on August 26, 2002 at a depth of 5 m. Following reading after that warm reading was subzero again. Unsure if reading was an error or if some seepage at this depth may have occurred.
MAINTENANCE RECOMMENDATIONS:	Backfill one erosional gulley on the backslope, situated towards the north abutment. Monitor Thermistor D2-00-03 to ensure subzero conditions over the short term.
CONCLUSIONS:	The dam is in satisfactory condition. Continue with vigilant monitoring of instrumentation and visual condition assessment.

DAM 3

LOCATION:	East end of now-covered tailings storage area, east of Cells 1 and 2.
FUNCTION:	Minor perimeter closure for tailings retention; Boomerang Lake downstream of the dam. The dam retains tailings covered with an esker material cap, thickened in 1995 by one meter using esker material.
LENGTH:	+/- 600 m
MAX HEIGHT:	+/- 2.5 m above d/s tundra.
AS-BUILT ELEVATION:	488.4 m
CREST WIDTH AND CONDITION:	Approx. 8 m; surfaced with esker material. Crest condition is good and no cracking is evident. Poorly constructed swale located at the southeast corner of the dam. Several remnant and new erosional gullies located on the east arm of the dam.
RIPRAP:	Inside slope buried with tailings and then covered over.
BACKSLOPE:	Variable in inclination; locally meets the shoreline of Boomerang Lake. Old cracks are now active where the dam intersects the lake shoreline, along the northwest arm. Some new, discontinuous cracks also noted on the east arm at the toe.
SEEPAGE:	None observed near the toe of the east arm of the dam.
MAINTENANCE RECOMMENDATIONS:	Replace poorly constructed swale with a properly graded swale, appropriately armoured to drain surface runoff. Backfill and grade over the erosional gullies situated along the east arm of the dam. Flatten the backslope along Boomerang Lake for the northwest part of the dam to prevent cracks from opening any further. Also grade and flatten the toe where cracks are present along the east arm.
CONCLUSIONS:	The dam is in good condition.

DAM 4

LOCATION:	South end of Cell 4 for K Dam sub-pond.
FUNCTION:	Perimeter closure for water retention at present; natural pond downstream of the dam at its west end.
LENGTH:	+/- 900 m
MAX HEIGHT:	+/- 6 m above u/s native ground elevation.
AS-BUILT ELEVATION:	489.586 m
CREST WIDTH AND CONDITION:	Approximately 12 m wide crest width in good condition, no cracks found. Crest must have been regraded since last year given boulders on the edge of the upstream side.
RIPRAP:	Run of Mine rockfill in generally good condition on upstream slope. Some construction machinery/dozer activity on the upstream side has disturbed the overall slope of the riprap.
BACKSLOPE:	Esker sand; slope steeper in upper portion and flattens in the lower portion, approximately 2H:1V. Geogrid exposed in places. Some minor cracks parallel the contours in the lower portion of the slope (seen previously and not of concern), adjacent to the steep toe.
SEEPAGE:	No apparent seepage but the head of water across the dam is relatively low. Temporary cofferdams, which were on the downstream side of dam, have been graded along the toe; the west end cofferdam remains. After pumping of the toe berm pond was undertaken, seepage into pond was coming from downstream lake side, not from the upstream side of the dam. This case has been previously observed.
INSTRUMENTATION:	<p>Four thermistors are currently monitored in Dam 4. From east to west across the crest, the four cables are numbered TD4-1 to -4.</p> <p>Thermistor TD4-1 displayed just over 2 m of active layer thaw in October 2001 and about the same thaw depth in mid-September 2002. Below a depth of 6 m (approximately embankment fill thickness), the subsurface temperatures have all been colder than -2.2°C with no signs of significant warming.</p>

DAM 4 CONTINUED

INSTRUMENTATION:

Thermistor TD4-2 displayed just over 3 m of active layer thaw in October 2001 and just less than 3 m in mid-September 2002. Below a depth of 8 m, the subsurface temperatures have all been colder than -2°C and the subsurface points appear to be cooling over the longer term.

Thermistor TD4-3 displayed over 2 m of active layer thaw in October 2001 and slight more thaw depth in mid-September 2002. Below a depth of 6 m (approximately embankment fill thickness), the subsurface temperatures have all been colder than -1.7°C with no signs of significant warming.

Thermistor TD4-4 displayed just over 2 m of active layer thaw in October 2001 and slightly more thaw depth in mid-September 2002. Below a depth of 6 m (approximately embankment fill thickness), the subsurface temperatures have all been colder than -2.2°C with no signs of significant warming.

MAINTENANCE

RECOMMENDATIONS:

Repair disturbed rip rap on the upstream side and investigate if underlying liner has been disturbed as well.

CONCLUSIONS:

The dam is in good condition and is functioning without apparent seepage. Any plan for significantly increasing the pond water level should include considerations for beach placement in view of its contribution to potential seepage mitigation.

DAM 5

LOCATION:	Southeast corner of Cell 3, just northwest of Dam 4.
FUNCTION:	Minor perimeter closure intended for future tails and water retention; currently functioning as a road embankment.
LENGTH:	+/- 250 m
MAX HEIGHT:	+/- 1.5 m above d/s tundra.
AS-BUILT ELEVATION:	491.537 m
CREST WIDTH AND CONDITION:	Approximately 8 m wide and esker surfaced so that the dam may also function as roadway. Crest is in good condition with no evidence of cracking.
RIPRAP:	Angular rockfill, maximum particle size from 20 to 30 cm, has been placed on the upstream face. Approximate slope of 3H:1V and in good condition.
BACKSLOPE:	About 1.5 to 2H:1V with till and esker sand. Slope appears in satisfactory condition.
SEEPAGE:	No comment possible; no water head being retained by the structure.
MAINTENANCE RECOMMENDATIONS:	No maintenance required.
CONCLUSIONS:	The dam is in good condition and should be inspected for seepage when pond levels place a water head against it.

DAM 6

LOCATION:	West side of Cell 3 retaining tailings placed behind K-dam.
FUNCTION:	Minor perimeter closure. Retaining some tailings beach and ponded water on the northern portion of the dam.
LENGTH:	+/- 300 m
MAX HEIGHT:	+/- 2.5 m above d/s tundra.
AS-BUILT ELEVATION:	490.246 m
CREST WIDTH AND CONDITION:	Approximately 10 m wide and esker surfaced so that dam may also function as a roadway. Crest in good condition, no cracking evident. One minor sinkhole noted in the crest, approximately 50 m north of south abutment.
RIPRAP:	Run of mine rockfill in good condition on upstream slope; slightly steeper in southern portion. Some rutting noted due to vehicle traffic.
BACKSLOPE:	About 2H:1V with till and esker sand; no evidence of previously indicated cracking. One significant erosional gully located 40 m south of north abutment.
SEEPAGE:	No seepage observed.
MAINTENANCE RECOMMENDATIONS:	Backfill and grade over the sinkhole on the crest and the erosional gully at the toe.
CONCLUSIONS:	The dam is in good condition. Monitor for seepage if retained pond level continues to rise.

5.0 CLOSURE

We trust the above meets your present requirements and we thank Echo Bay Mines Ltd., for the opportunity to be of service at Lupin Mine. If you have any questions or require additional information, please contact the undersigned.

Respectfully submitted,
BGC ENGINEERING INC.

per:

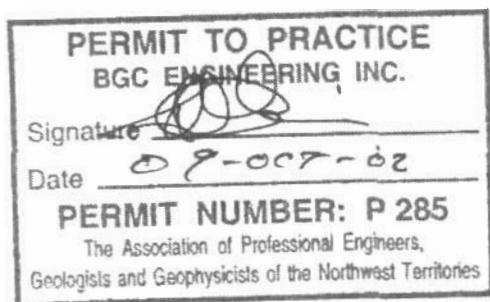
Reviewed by:



James W. Cassie, M.Sc., P.Eng.
Specialist Geotechnical Engineer

A handwritten signature in cursive script, likely belonging to Holger H. Hartmaier.

Holger H. Hartmaier, M.Eng., P.Eng.
Senior Geotechnical Engineer



FIGURES

64d 45m N

111d 30m E

CONTWOYT LAKE

LUPIN

111d 00m E

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

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CLIENT



ECHO BAY MINES LTD.

BGC

BGC Engineering Inc.

AN APPLIED EARTH SCIENCES COMPANY

Calgary, Alberta.

Phone: (403) 250-5185

PROJECT

Annual Inspection of Perimeter Tailings Dams

TITLE

Lupin Mine Location Map

PROJECT No.

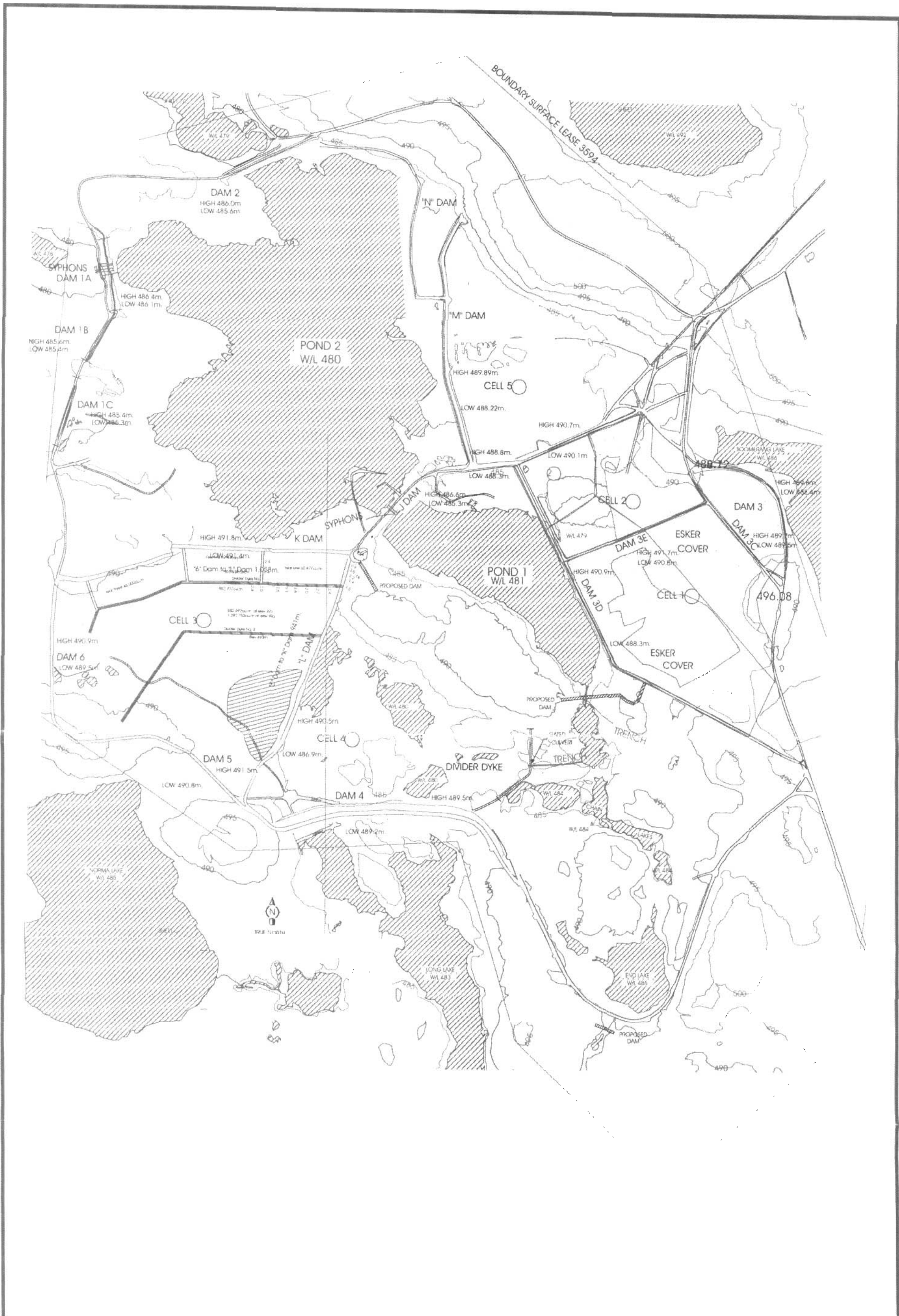
0256-004-02



DWG. No.

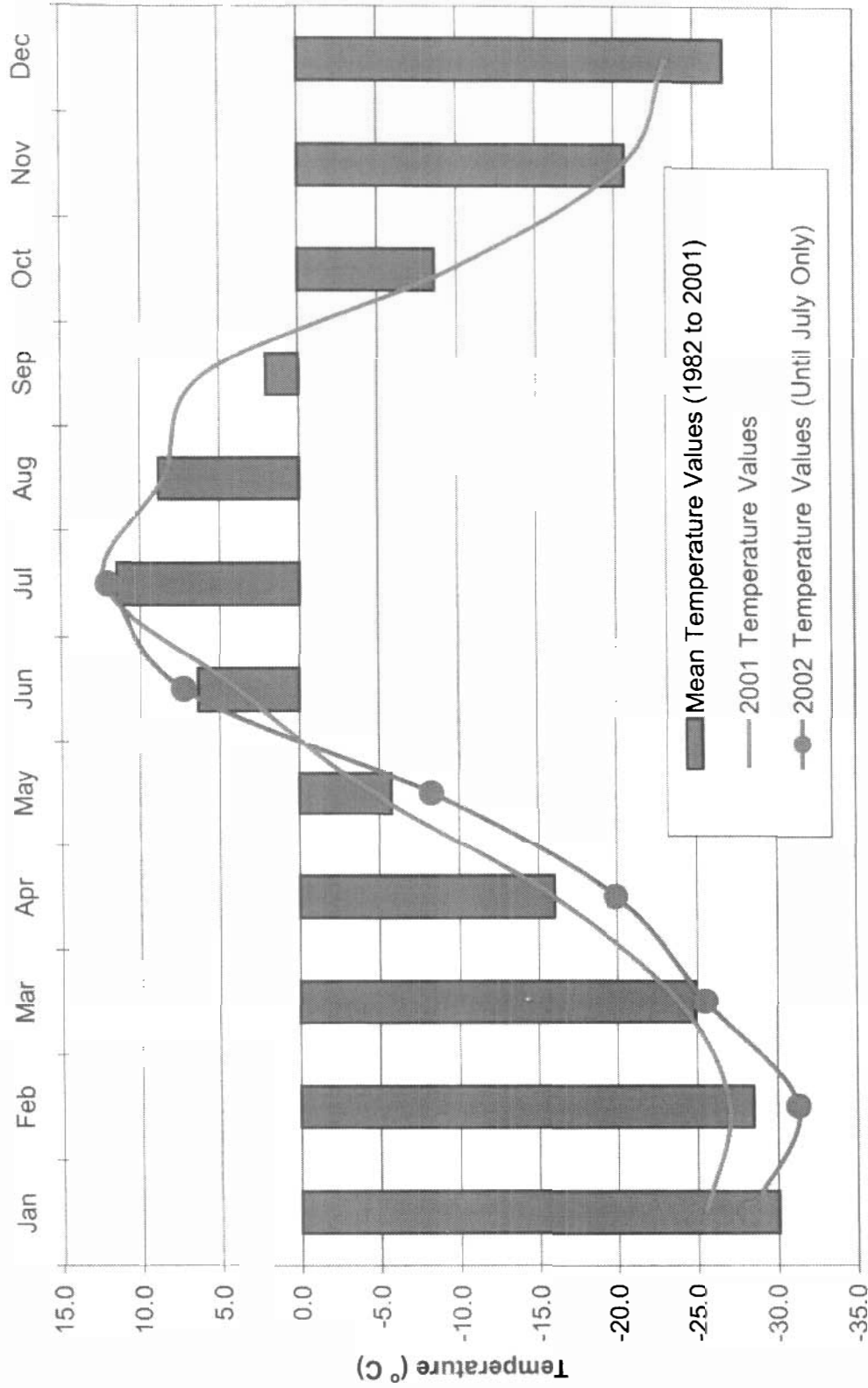
Figure 1

REV


0

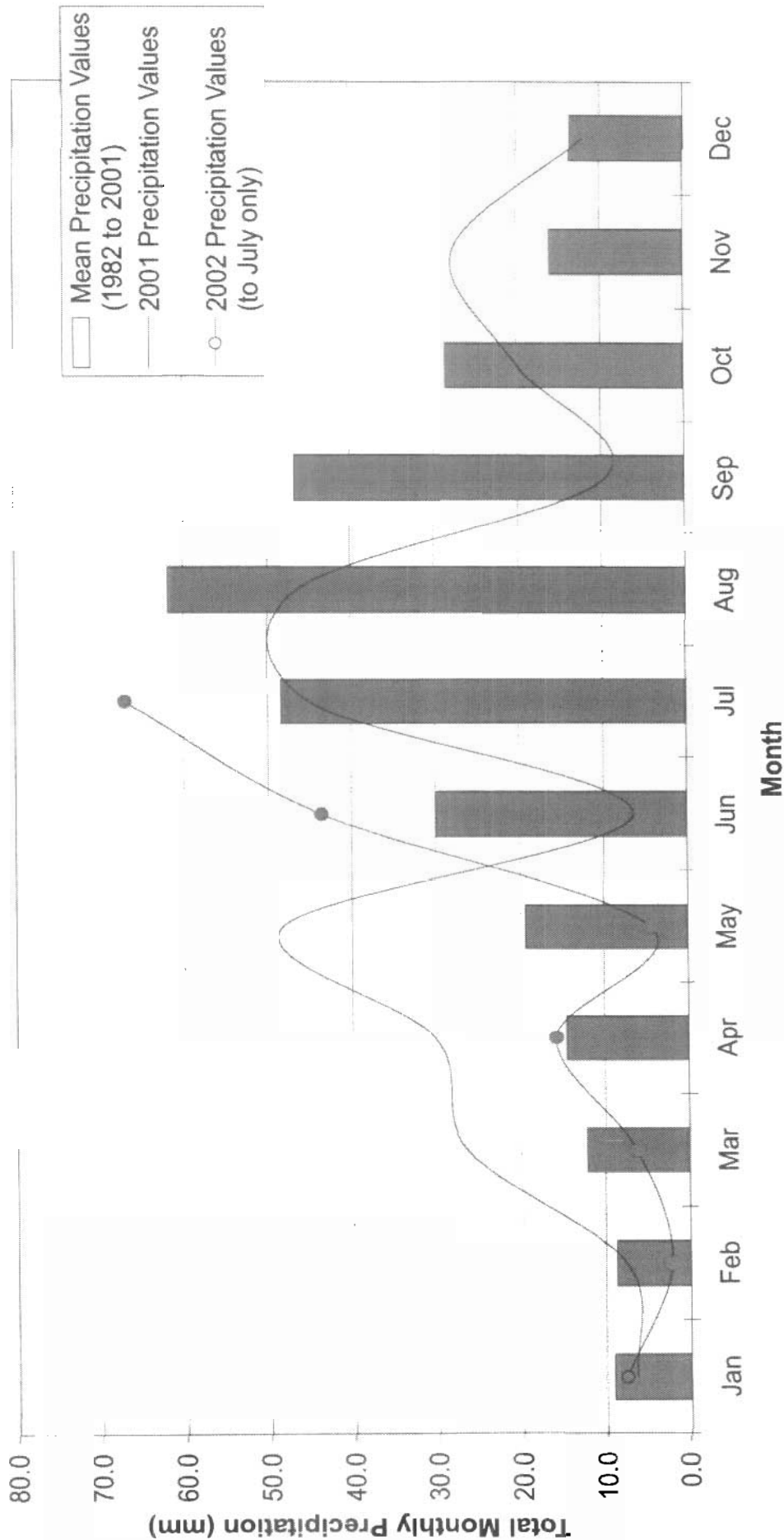



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						DATE: SEPT. 2002				TITLE Tailings Containment Area Plan	
						DRAWN: SLF					
						DESIGNED: JWC		CLIENT <div>ECHO BAY MINES LTD.</div>		PROJECT No 0256-004-02	
						CHECKED: JWC				FIGURE No Figure 2	
						APPROVED: JWC				REV 0.	
REV	DATE	REVISION				DRAWN	CHECKED	APPROVED			



Month

DATE: Sept. 2002	DRAWN SLF	<p>REFERENCED DRAWING DESCRIPTION</p> <p>AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL</p>	<p>BGC ENGINEERING INC.</p> <p>AN APPLIED EARTH SCIENCES COMPANY</p> <p>Calgary, Alberta Phone: (403) 250-5185</p> <p>BGC</p> <p>CLIENT  ECHO BAY MINES LTD.</p>		<p>PROJECT Annual Inspection of Perimeter Tailings Dams</p>	
			<p>TITLE</p> <p>Comparison of Monthly Temperature Means to 2001 & 2002</p>		REV. 0	
			<p>PROJECT No. 0256-004-02</p>		<p>DWG. No. Figure 3</p>	



DATE: Sept. 2002		DRAWN	SLF
REFERENCED DRAWING DESCRIPTION			
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		CLIENT	
			
AN APPLIED EARTH SCIENCES COMPANY		ECHO BAY MINES LTD.	
Calgary, Alberta			
Phone: (403) 250-5185			
PROJECT		PROJECT No.	
Annual Inspection of Perimeter Tailings Dams		0256-004-02	
TITLE		DWG. No.	
Comparison of Monthly Precipitation Means to 2001 & 2002		Figure 4	
		REV.	
		0	