BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COMPANY

ZINIFEX CANADA INC.
LUPIN OPERATION

2007 GEOTECHNICAL INSPECTION
PERIMETER TAILINGS DAMS

LUPIN MINE
NUNAVUT

FINAL

PROJECT NO.: 0385-006-03
DATE: OCTOBER 31, 2007

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Project No. 0385-006-03
October 31, 2007

Mr. Andrew Mitchell
Zinifex Canada Inc.
Lupin Operation
#401-1113 Jade Court
Thunder Bay, ON P7B 6M7

RE: 2007 REPORT ON ANNUAL GEOTECHNICAL INSPECTION
PERIMETER TAILINGS DAMS, LUPIN MINE, NUNAVUT

Dear Andrew:

Please find attached our report on the Annual Geotechnical Inspection of the Perimeter Tailings Dams, which was carried out on September 6 and 7, 2007. A site inspection memo was emailed to yourself outlining items requiring maintenance following the inspection visit.

Thank you for the hospitality shown during the 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 Zinifex Canada Inc. 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.

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1.0 INTRODUCTION

Lupin Mine, acquired by Wolfden Resources Inc. (Wolfden) in February 2007, is located 285 km south-east of Kugluktuk and 400 km north-east of Yellowknife on Contwoyto Lake, as illustrated on Figure 1. In April 2007, the Nunavut Water Board License (2AM-LUP0008) was transferred from the previous owner to Lupin Mines Inc. a subsidiary of Wolfden. Following from that transfer, Zinifex Canada Inc. then acquired Wolfden in May 2007.

The Water Licence for the site requires that the tailings containment area (TCA) be inspected annually by a qualified Geotechnical Engineer. As such, Mr. Andrew Mitchell from Zinifex requested that BGC Engineering Inc. (BGC) conduct such an inspection of the tailings facility perimeter embankments. This inspection and the preparation of a report provided herein are required in partial satisfaction of the Lupin Mine Water License obligations. 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;
- weekly inspection of the dams and related infrastructure shall be carried out weekly; and
- the annual inspection report should be forwarded to the Water Board within 60 days of the inspection date.

Based on the visual inspection and a review of monitoring data, the geotechnical performance of the perimeter dams is assessed. Any deficiencies and points of concern are brought to the attention of Zinifex.

Previous design, as-built and annual inspection reports by Geocon Inc., Golder Associates Ltd. and BGC Engineering Inc. should be reviewed for information, observations and recommendations prior to 2007.

Geocon (1982) provides as-built information for Dams 1A, 1B, 1C, 2 and 4A (later a portion of the much larger Dam 4) that were all built up to elevation 485 m during the 1981 construction period. The dam embankments were constructed of silty sand till with a liner on the upstream side. The liner is keyed into the underlying permafrost.

Golder Associates (1992) provides dam design information for Dams 4, 5 and 6 and the End Lake Dam (which was never constructed). 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 toe. For each of these dams, the top of the liner was situated 0.5 m below the physical crest of the dams. Dam 4 has a rockfill toe drain to collect embankment seepage, should it occur.

Golder Associates (2004) provides a Dam Safety Review of the perimeter tailings dams. Within that work, a failure consequence classification for each perimeter dam was provided, as follows:

- Low consequence – Dams 1A, 2 and 4.
- Very low consequence – Dams 1B, 1C, 3, 5 and 6.

Slope stability analyses were also undertaken for Dams 1A, 2 and 4. Factors of safety for static conditions were greater than 1.6 and greater than 1.3 for conservative seismic loadings. As a result, Golder concluded that all three noted dams satisfy dam safety stability requirements. A brief Operations, Maintenance and Surveillance (OMS) Manual was also prepared as an appendix to their report.

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 every second 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. In a typical year, compliant water within Pond 2 is discharged to the environment via the siphons over Dam 1A. When storage capacity is created in Pond 2, Pond 1 water is transferred in using the siphons over J-Dam.

Processing and tailings deposition was completed in February 2005 as Lupin Mine went into closure. Staff from the previous site operator, Kinross, left the site in October 2006. Since that time, no water management events have occurred within the tailings area. Dams 1A and 2 retain Pond 2 and these dams were built to approximately elevation 486.3 m. The water level during the time of the inspection was approximately 3 m below the dam crest indicating a water level of approximately 483.3 m at that time.

3.0 CLIMATIC CONDITIONS

Climatic conditions were recorded at the Lupin manned weather station until October 2006. Since that time, some climatic information has been collected at an automated station at the Lupin site. Figure 3 indicates that the 2006 temperature values were significantly warmer than typical for the year (MAAT of –7.6^{o}C versus –11.0^{o}C long term), while values for 2007 (to June) were typical values. Figure 3 also provides a plot of mean annual air temperature (MAAT) values recorded at Lupin Mine since 1982. The plot provides some context with regards to potential climate change that may be occurring. It indicates that 2006 was the warmest MAAT value on record for the site since 1982.

Figure 4, complied with an incomplete data set, illustrates that precipitation values for 2005 and 2006. June 2005 and 2006 were wetter than normal while July 2005 and 2006 were drier.

4.0 INSPECTION CONDITIONS AND APPROACH

Mr. Jim Cassie, P. Eng., conducted the inspection on September 6 and 7, 2007 while based at Zinifex's other camp at Izok lake. The temperature during the inspection was approximately 10° to 15°C under sunny conditions

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 provides the basis for this formal report. Before leaving the site, a summary memo regarding tailings area maintenance items was prepared and emailed to Messrs Andrew Mitchell and Dave Stevenson.

During his site inspection trip, Mr. Cassie took thermistor readings on five thermistor cables located in three different dams at site. This was the only set of thermistor readings taken since Kinross left the site in 2006. Selected plots of the instrumentation data read by Mr. Cassie are provided in Appendix I. An interpretation of this data is provided on the individual dam inspection sheets.

5.0 FINDINGS AND CONCLUSIONS

The inspection results for 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 provided in Appendix I.

In general, the inspection confirms that the perimeter embankments are in satisfactory condition. Some minor erosional gullies were noted and these should be repaired.

Instrumentation installed in selected dams show subzero temperatures at depth. No signs of permafrost warming are indicated and some temperatures at depth are cooling due to on-going permafrost aggradation and due to recent cooling versus 2006 temperatures.

Clause D.6.f of the Water Licence notes that weekly inspections of tailings dams (and associated infrastructure) are to be undertaken by site staff and records kept on these inspections. This will be practically difficult to do given the closed nature of the site. As the water levels rise behind the various dams, inspections must be undertaken to assess potential seepage and dam performance.

Continued vigilance with regards to thermistor monitoring should be undertaken, especially when summer pond levels are high. Hence, all thermistors within tailings dams should be read according to the following frequency:

- November to April – monthly would be helpful but not critical.
- May to June – weekly.
- July to October – every two weeks.

The objective of collecting this data is to provide proactive assessment of potentially deteriorating performance of the dams. Instrumentation data from the various dams should be forwarded to BGC immediately after collection for review and interpretation.

In addition to thermistor readings, all pond levels should be recorded at least monthly and perhaps bi-weekly as water transfer events occur. Staff gauges or pore pressure transducers should be considered to record water levels.

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: 486.27 m

CREST WIDTH AND CONDITION: 7 to 8 m; surfaced with esker material, but not travelled because of the siphons. No significant cracking evident; condition is good.

RIPRAP: Run of Mine rockfill; broadly graded; good condition. Previously noted disturbed area (due to construction traffic possibly) in rip rap at the crest edge.

BACKSLOPE: Approx. 1.5H:1V; variably armoured with cobbles and boulders; no evidence of cracking.

TOE BERM: Minor longitudinal cracking noted along edge of toe berm, just beside siphon valves.

SEEPAGE: No evidence of seepage.

INSTRUMENTATION: Thermistor D1A-00-1 is located in the crest, just south of the mid-point of the dam. Approximately 2.0 m of active layer depth recorded by September 2007. Significant cooling has occurred below 9 m depth since 2006. Thermistor nodes below depth of 9 m (situated approximately below the embankment fill) are equal to, or colder than -4^{o}C with no signs of any permafrost warming.

MAINTENANCE RECOMMENDATIONS: Monitor downstream edge of the toe for additional cracking and grade with rockfill if more deformation occurs.

CONCLUSIONS: The dam is in good condition with no evidence of seepage passing through or beneath the dam. 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:	485.83 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 seepage observed but 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; some minor longitudinal cracking noted, overall condition satisfactory.
BACKSLOPE:	Approx. 3H:1V, smooth slope. Access road berm appears in good condition.
SEEPAGE:	No seepage observed but no water currently 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 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: 486.30 m

CREST WIDTH AND CONDITION: Approx. 6 m; surfaced with esker material and used as the primary traffic route. Crest condition is good; no cracking is evident.

RIPRAP: Run of Mine rock forms convex-upward, gently sloped upstream face; minor erosional scarps formed at previous higher water levels continues to retrogress; generally good condition.

BACKSLOPE: Variable materials but comprised mostly of esker granular material with minor rills; good condition.

SEEPAGE: No seepage observed this year: toe area quite dry.

INSTRUMENTATION: Thermistor D2-00-02 is located at the north end of the crest. Approximately 2.8 m active layer depth measured by September 2007. Temperatures at depth are subzero. Below 5 m depth (approximate bottom of embankment fill), temperatures are colder than -3^{o}C. Temperatures below that depth are colder with no signs of permafrost warming.

MAINTENANCE RECOMMENDATIONS: None required.

CONCLUSIONS: The dam is in satisfactory condition. Continue with vigilant monitoring of instrumentation and visual condition assessment, especially at higher pond levels.

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 metre 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. Discharge swale on the east arm appears in satisfactory condition.
RIPRAP:	Inside slope buried with tailings cover sand and gravel.
BACKSLOPE:	Variable in inclination; locally meets the shoreline of Boomerang Lake. Minor toe cracking continues to be observed.
SEEPAGE:	None observed near the toe of the east arm of the dam.
MAINTENANCE RECOMMENDATIONS:	None required.
CONCLUSIONS:	The dam is in satisfactory condition. Continue to conduct visual monitoring of small cracks at downstream toe.

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: 489.59 m

CREST WIDTH AND CONDITION: Approximately 12 m wide crest width in generally good condition. Minor crest grading required at west abutment to prevent channelization of run-off.

RIPRAP: Run of Mine rockfill in generally good condition on upstream slope. Small scarp formed at lower water levels.

BACKSLOPE: Esker sand; slope steeper in upper portion and flattens in the lower portion, approximately 2H:1V. Several small erosional gullies near the east abutment should be backfilled. Several animal burrows also noted.

SEEPAGE: No signs of seepage.

INSTRUMENTATION: Three of the original four thermistors are currently monitored in Dam 4. From east to west across the crest, the four cables are numbered TD4-1 to –4.

Thermistor TD4-1 recorded an active layer depth of 2 m on September 6, 2007. The cable has only subzero temperatures below 2 m depth. Below a depth of 6 m (approximately embankment fill thickness), the subsurface temperatures are colder than -5^{o}C.

DAM 4 CONTINUED

INSTRUMENTATION:

Thermistor TD4-2 was destroyed in summer 2003.

Thermistor TD4-3 also recorded an active layer depth of 2.2 m on September 6, 2007. The cable displayed only subzero temperatures below 2.2 m depth. Below a depth of 6 m, the temperatures are colder than –4°C.

Thermistor TD4-4 recorded 2 m of active layer thaw on September 6, 2007 and 2.5 m on Aug. 15, 2006. Only subzero temperatures were measured below 2 m depth. Below a depth of 6 m (approximately embankment fill thickness), the subsurface temperatures are colder than –5°C.

Significant cooling observed at depth from the 2006 readings.

MAINTENANCE RECOMMENDATIONS:

The erosional gullies on the downstream slope should be backfilled to prevent any additional erosion.

CONCLUSIONS:

The dam is in good condition and is functioning without apparent seepage.

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: 491.54 m

CREST WIDTH AND CONDITION: Approximately 8 m wide and esker surfaced so that the dam may also function as roadway. Crest is in generally good condition.

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. No cracking observed.

SEEPAGE: No seepage observed. No water head being retained by the structure.

MAINTENANCE RECOMMENDATIONS: None required.

CONCLUSIONS: The dam is in good condition and should be inspected for seepage when pond levels place a water head against it (unlikely occurrence).

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:	490.25 m previously but some minor fill placement may have occurred.
CREST WIDTH AND CONDITION:	Approximately 10 m wide and esker surfaced so that dam also function as a roadway. Crest in good condition.
RIPRAP:	Upstream side tailings been covered with sand and gravel so not possible to observe the upstream side of this dam. No pond located behind the dam now.
BACKSLOPE:	About 2H:1V with till and esker sand; some minor longitudinal cracks were noted at the toe; no erosional gullies observed on the downstream toe.
SEEPAGE:	No seepage observed.
INSTRUMENTATION:	None.
MAINTENANCE RECOMMENDATIONS:	None currently required.
CONCLUSIONS:	The dam is in good condition.

6.0 CLOSURE

We trust the enclosed meets your present requirements and we thank Zinifex Canada Inc., 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.	Holger Hartmaier, M.Eng., P.Eng.
Specialist Geotechnical Engineer	Senior Geotechnical Engineer.

REFERENCES

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.

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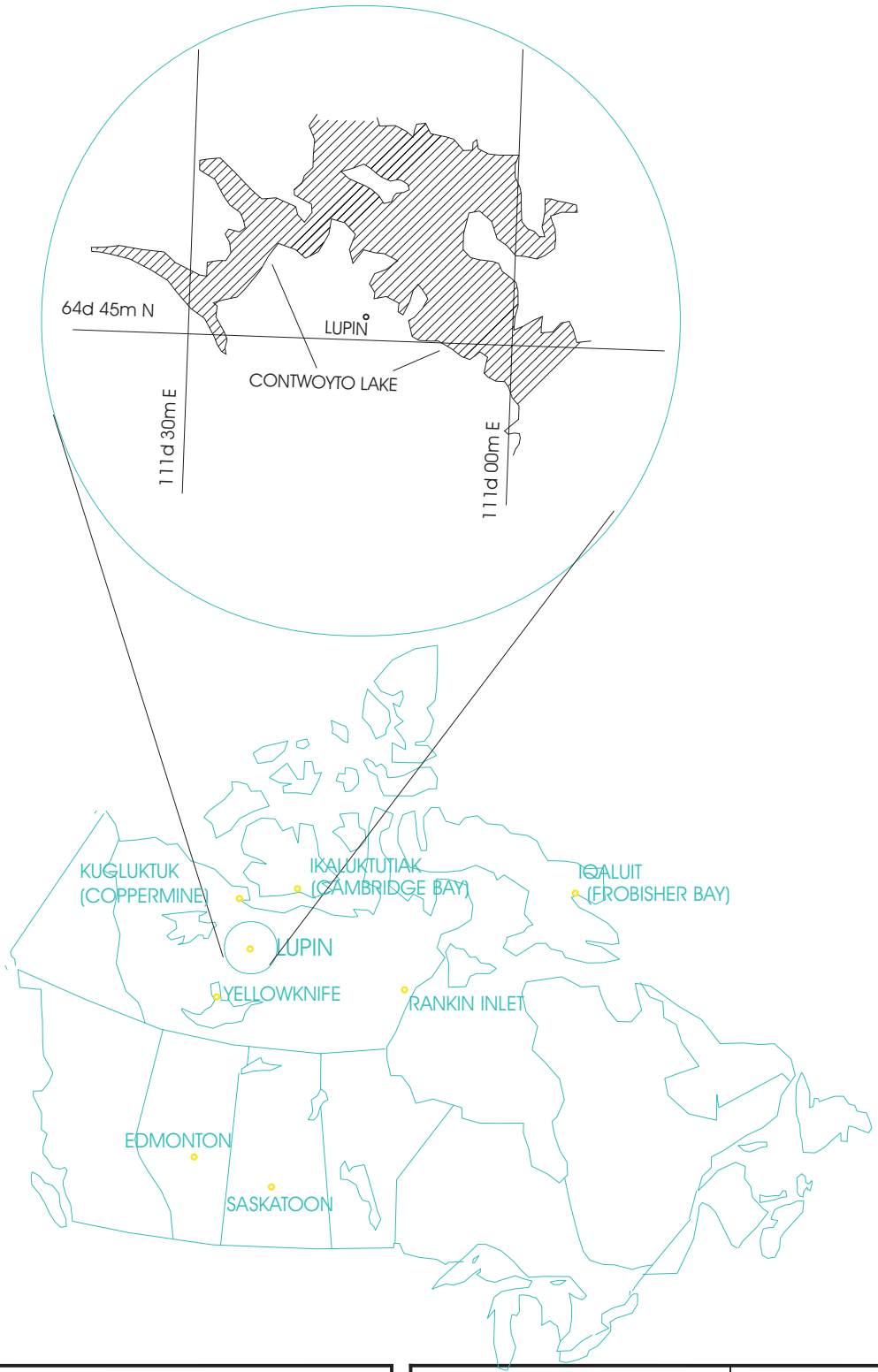
Geocon Inc. 1982. As-Built Tailings Containment Area, Lupin Project. Report submitted to Echo Bay Mines Ltd., Project No. A1207/01186-3, December 15, 1982, 26 pages plus figures and appendices.

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

Golder Associates Ltd. 2004. 2004 Dam Safety Review, Perimeter Tailings Dams, Lupin Mine, Nunavut. Report submitted to Kinross Gold Corporation, Project No. 04-1321-022, December 2004, 36 pages plus figures and appendix.

FIGURES



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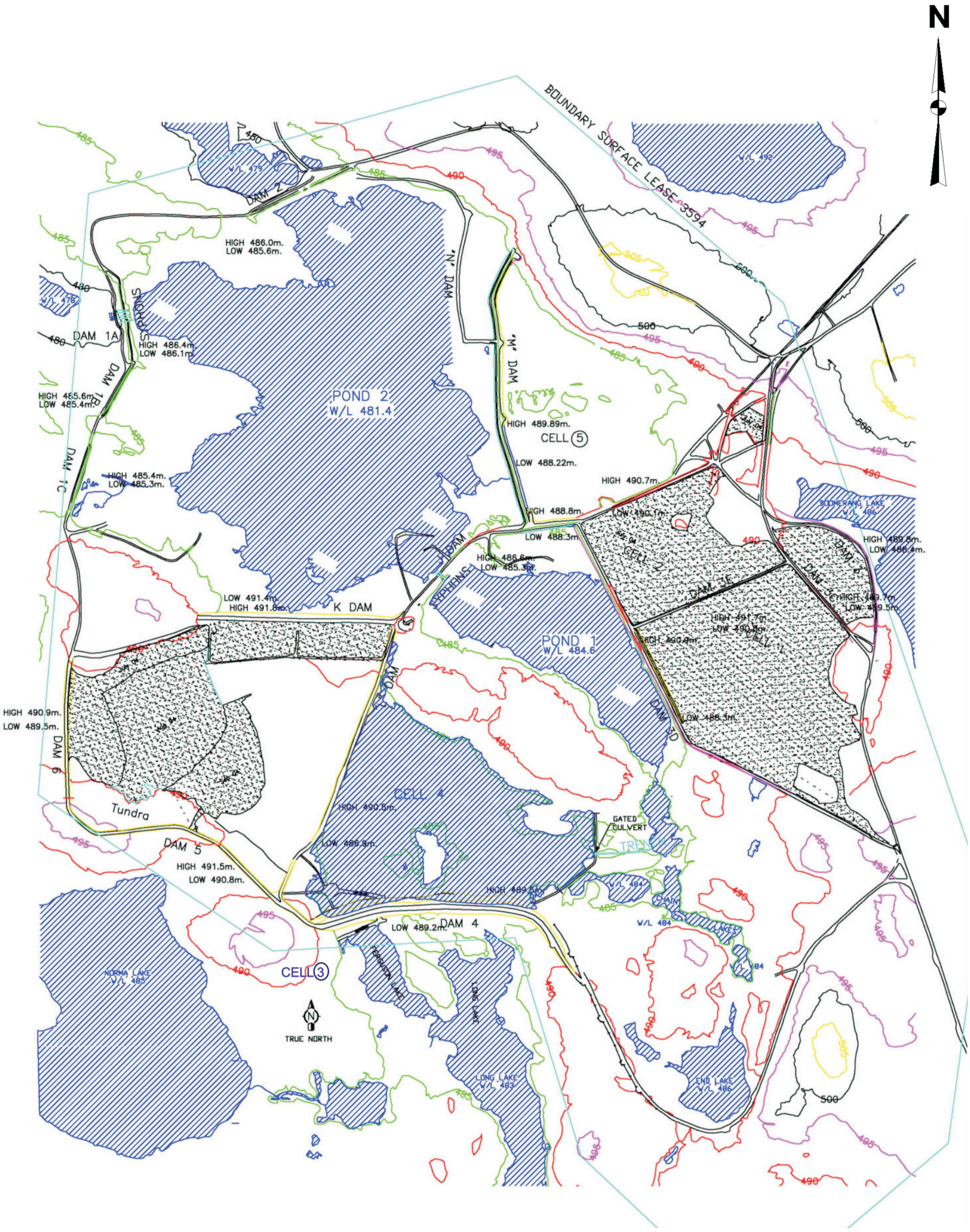
PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: LUPIN MINE LOCATION MAP

PROJECT No.	FIGURE No.	REV.
0385-006-03	1	



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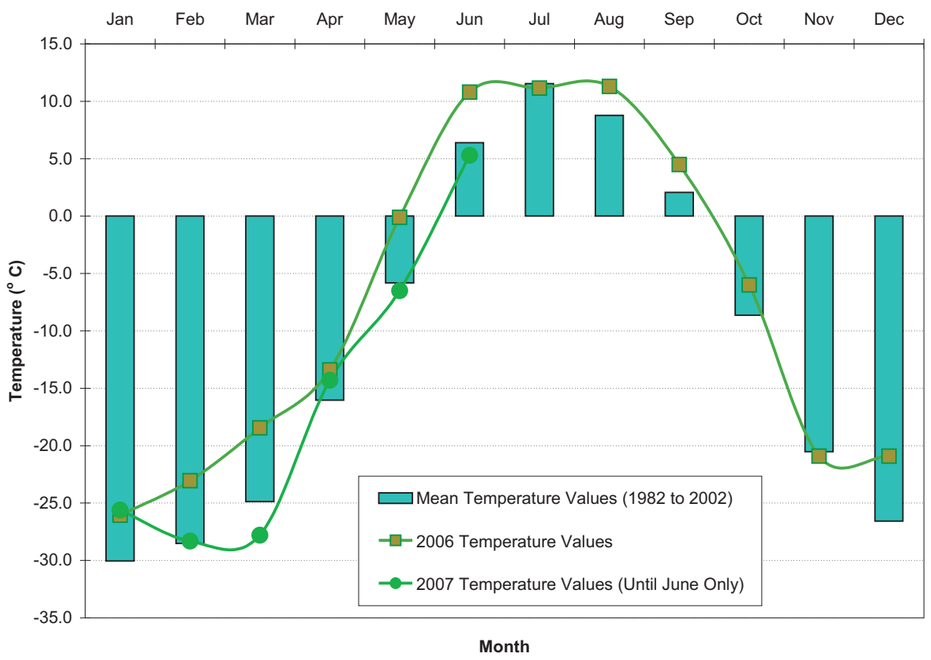
PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

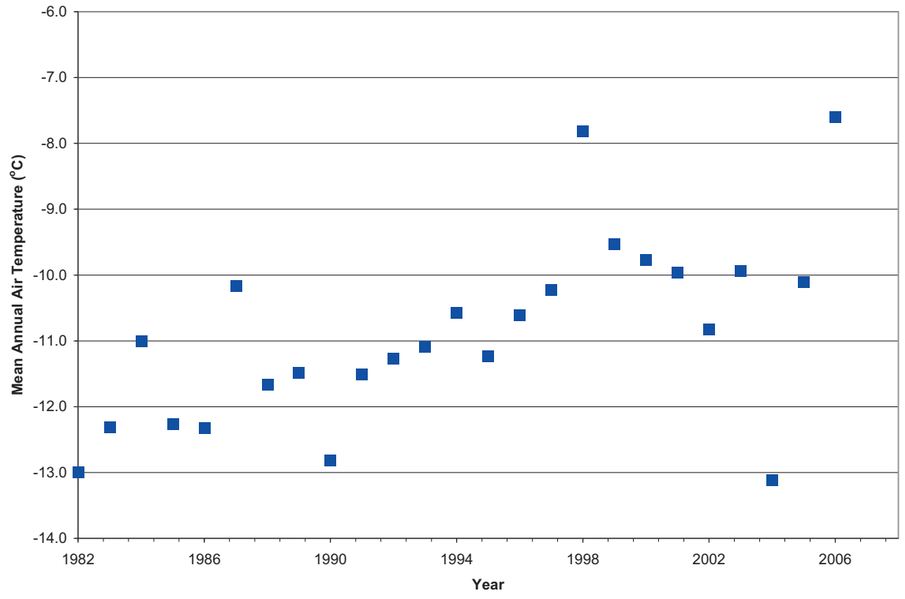
TITLE: TAILINGS CONTAINMENT AREA

PROJECT No.	FIGURE. No.	REV.
0385-006-03	2	0.



(Based on Lupin Station Data from 1982 to 2002)

Lupin MAAT Values Since 1982



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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: MEAN MONTHLY AIR TEMPERATURE VALUES

PROJECT No.	FIGURE No.	REV.
0385-006-03	3	0

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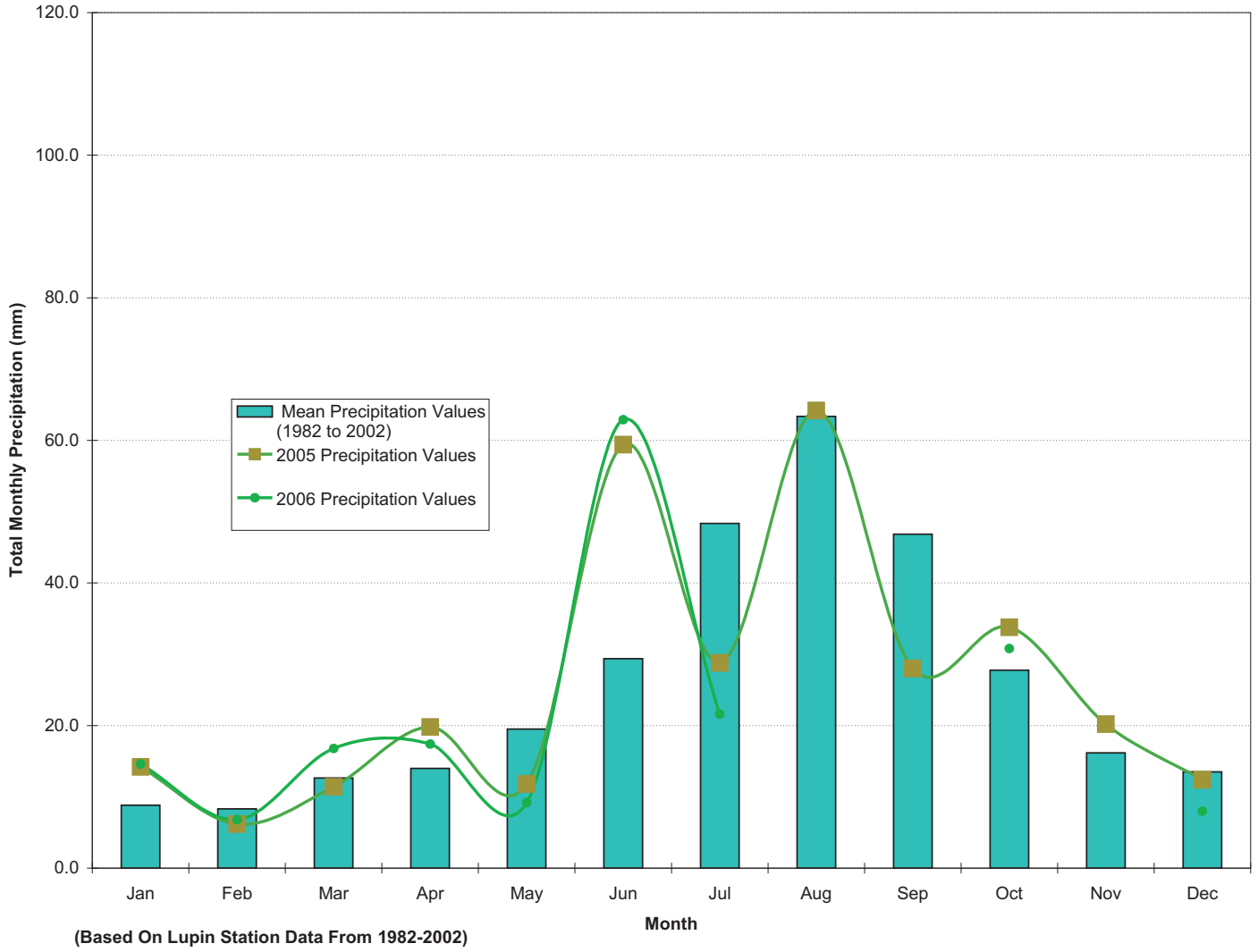

DATE: OCT 2007	DRAWN SLF	BGC ENGINEERING INC. AN APPLIED EARTH SCIENCES COMPANY Calgary, Alberta Phone: (403) 250-5185	PROJECT ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS	
REFERENCED DRAWING DESCRIPTION			TITLE MONTHLY PRECIPITATION VALUES	
CLIENT ZINIFEX			PROJECT No. 0385-006-03	FIGURE No. 4 / REV. 0

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Aerial view of Dam 1A.

View of the crest and upstream side looking towards the north abutment. No real signs of deformation or settlement noted.

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View of the downstream side of 1A with no concerns noted.

Shows some longitudinal cracking and a small scarp located along this berm edge along the toe.

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TITLE: DAM 1A INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	5	0

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Shows the crest and upstream side of Dam 1B with no signs of deformation or settlement.

View of the downstream slope showing the little bushes that are catching on.

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DATE:	OCTOBER 2007	CHECKED:	JWC
DRAWN:	SLF	APPROVED:	JWC

CLIENT: ZINIFEX

BGC Engineering Inc.
AN APPLIED EARTH SCIENCES COMPANY
Calgary, Alberta. Phone: (403) 250-5185

PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 1B INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	6	

Shows the upstream side and crest of Dam 1C looking towards its south abutment.

View of the downstream side and the access road and no concerns are noted.

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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 1C INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	7	

Aerial view of Dam 2.

View of the crest and upstream slope looking towards the north abutment. There are no signs of deformation or erosion.

Shows the two colours that appear on the riprap on the upstream side and the small scarp which has formed at the water line.

Shows the small pond area which is located over towards the north abutment at the toe. Usually this area is slightly wet with surficial drainage being collected here. But currently, this entire area is dry.

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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 2 INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	8	0

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View of the Dam 3 crest with Boomerang Lake in the background.

Shows the armoured channel which conveys ditch water across the crest, which appears in satisfactory condition

Shows a view along the toe looking towards the northwest.

Shows the section of the toe of Dam 3 looking at its confluence with the main haul road. No signs of seepage, significant deformation or erosion were noted.

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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 3 INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	9	0

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Shows the upstream side of the western side of Dam 4. The pond on the upstream side appears to be quite low this year showing a large area of the dam.

Shows the upstream side of Dam 4 with relatively low head pond level. I estimate that this head pond is some 3.2 to maybe 3. 4 m below the crest. In addition, we see a small scarp which has formed some 0.75 to 1 m.

Shows a number of minor erosional gullies located on the downstream slope of the west abutment.

View taken along the toe towards the west abutment. There are no signs of deformation or seepage to this distance along the toe.

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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 4 INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	10	0

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Shows the crest and downstream side of Dam 5.

Shows some angular riprap that was previously placed in erosional gullies located at the toe.

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PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 5 INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	11	

Shows a view of Dam 6 looking towards its south abutment. This area is completely reclaimed and there is no pond retained.

View of the crest looking towards the north abutment. We can see the reclaimed cover sand on the upstream side being .75 m higher than the dam crest.

View of the downstream toe where we see some accumulation of wind blown sand in the grasses beyond the toe. No signs of seepage or significant erosion are noted at the toe.

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SCALE:	N/A
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APPROVED:	JWC

PROJECT: ANNUAL INSPECTION OF PERIMETER TAILINGS DAMS

TITLE: DAM 6 INSPECTION PHOTOS

PROJECT No.	FIGURE No.	REV.
0385-006-03	12	0

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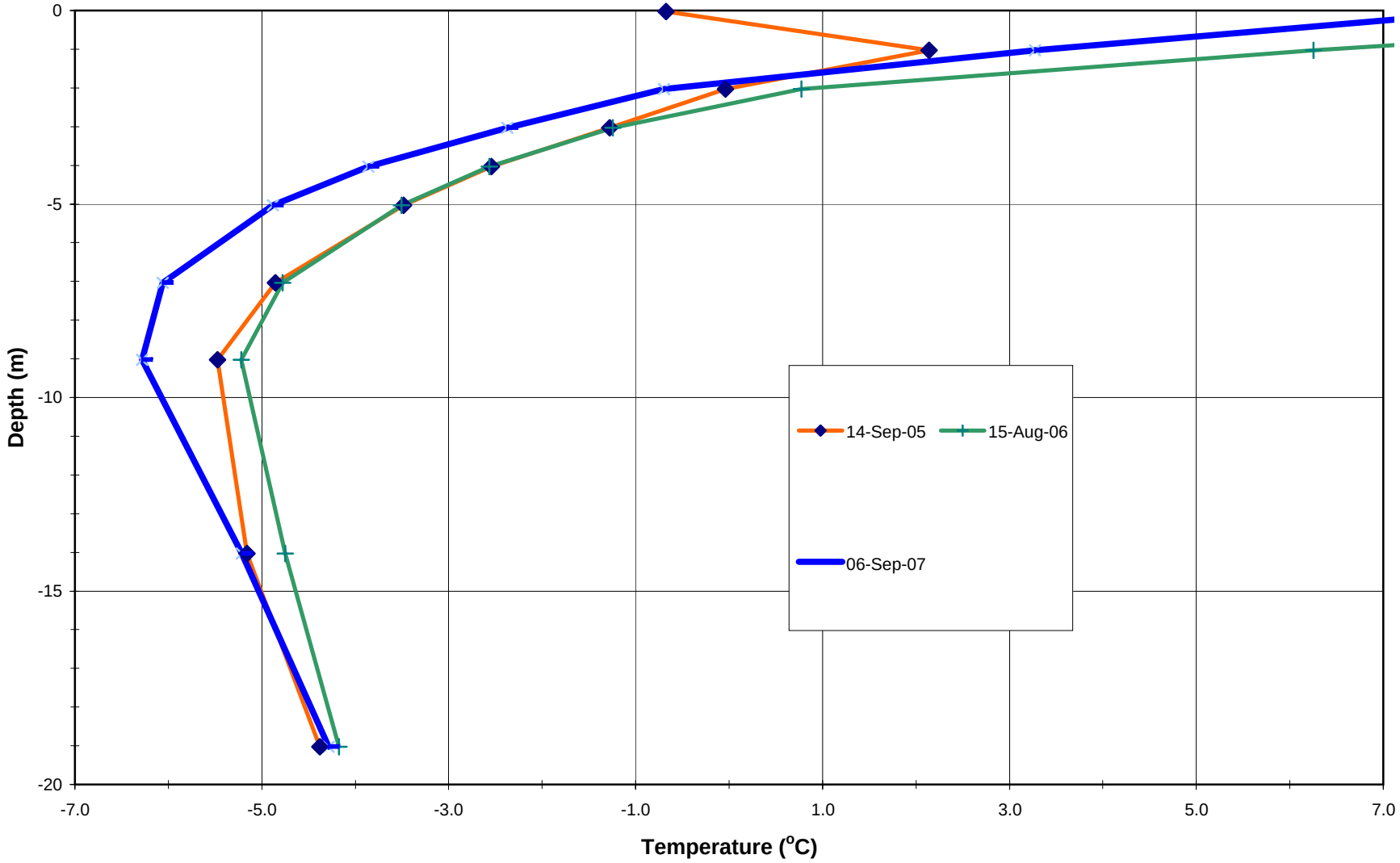
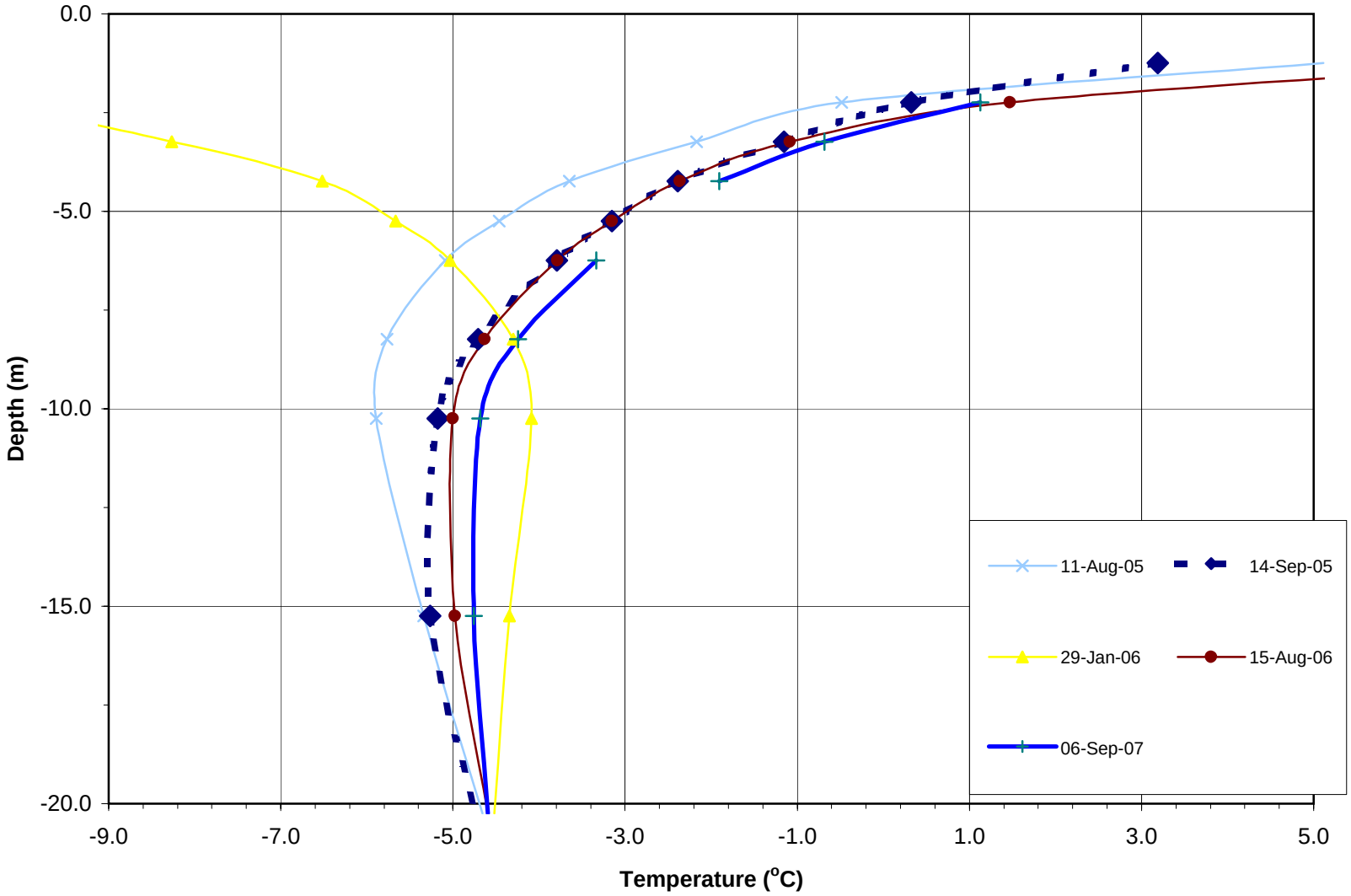
APPENDIX I - THERMISTOR PLOTS FOR VARIOUS DAMS

Thermistor D1A-00-01 - Installed November 9, 2000
(Vertical Thermistor installed on the crest of Dam 1A, south of Syphons)

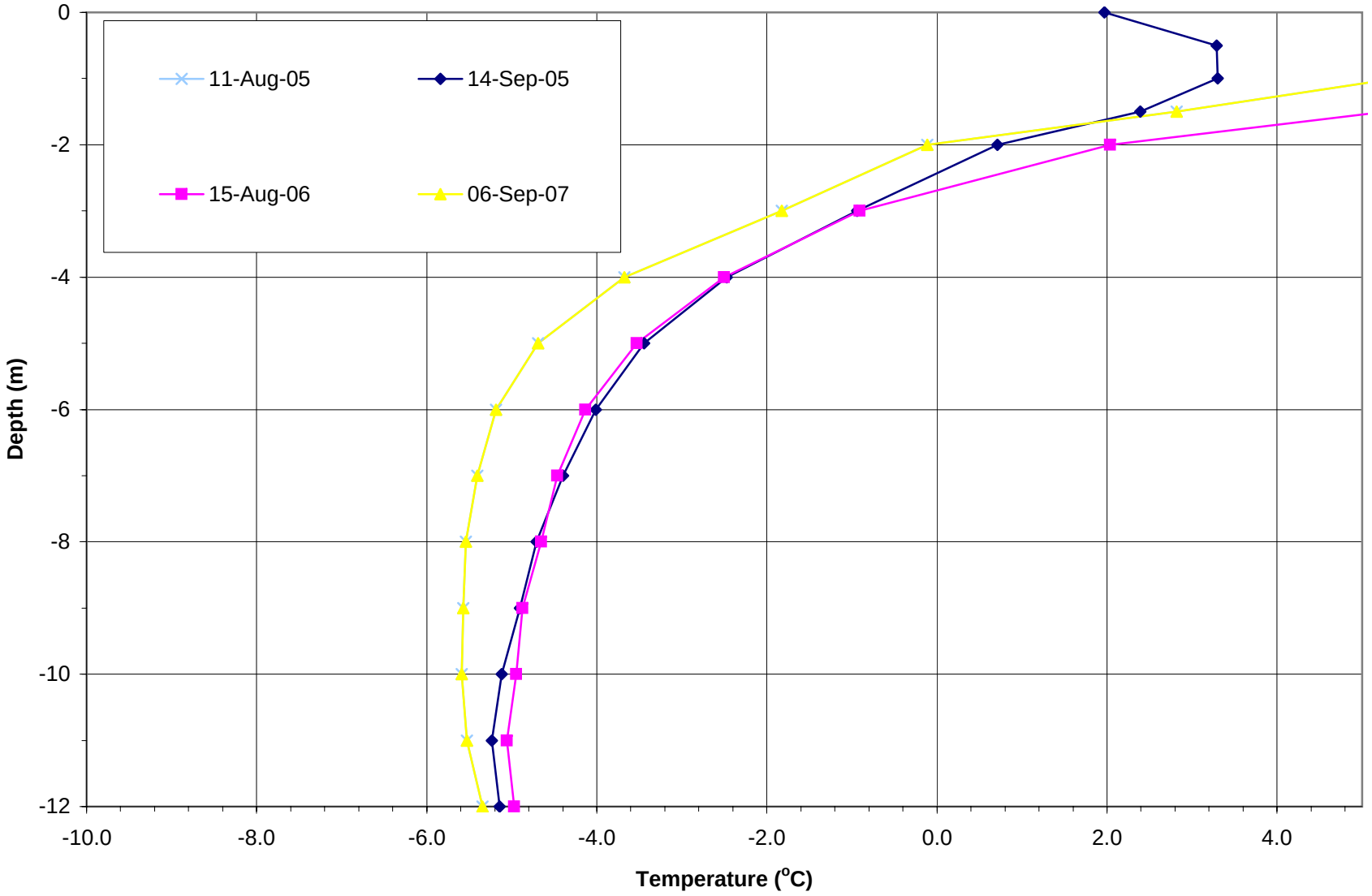


K:\Projects\0385 Zinifex Canada\006 Ulu Lupin Inspection\03 Lupin Report\4 Site Visit\
Lupin Thermistors_Updated Sept 2007.xls
D1A-00-01s graph

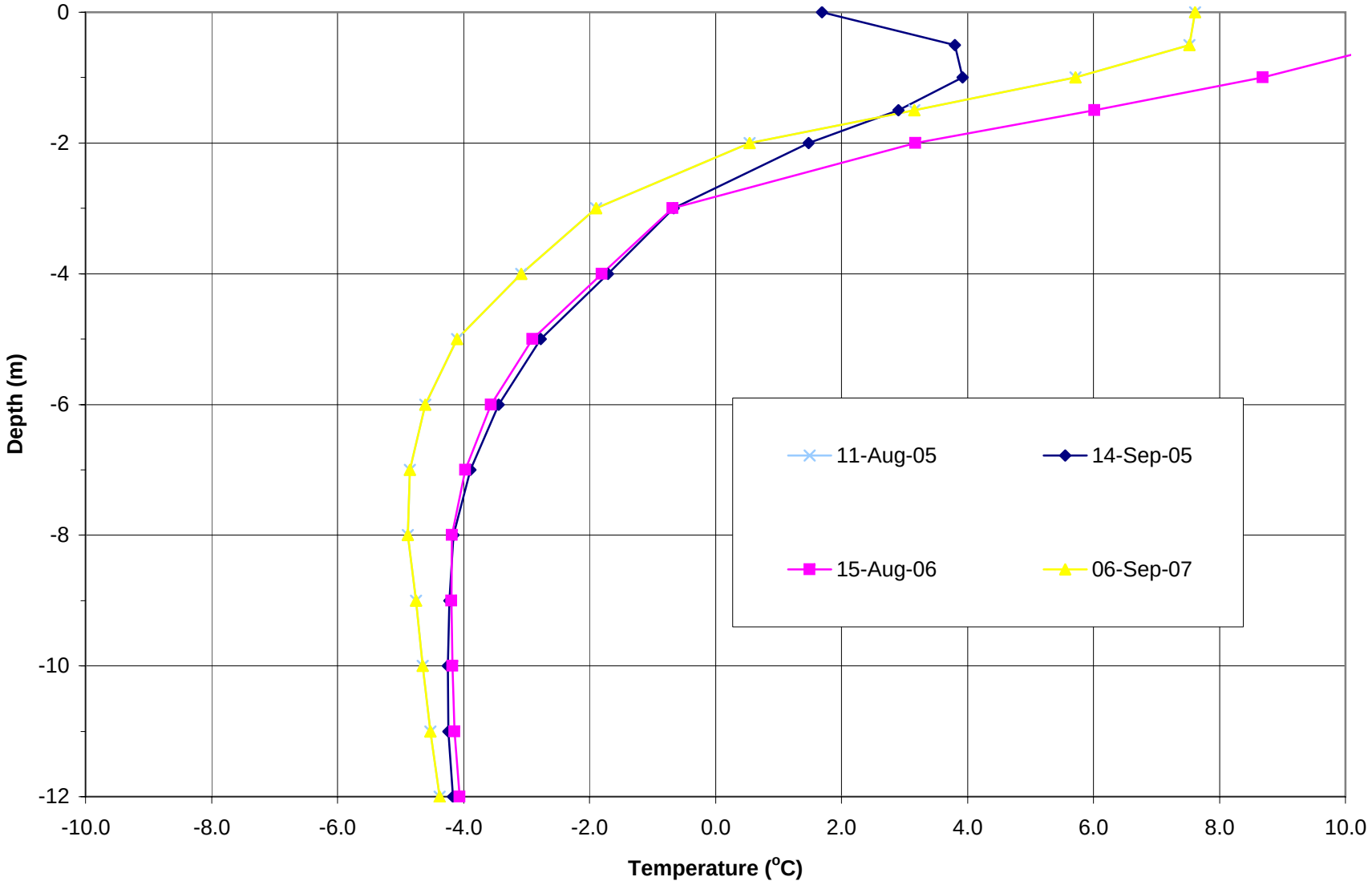
Thermistor D2-00-2 - Installed November 8, 2000
(Vertical Termistor Installed on the crest of Dam 2, at the north end)



LUPIN MINE - DAM 4: D4-1



LUPIN MINE - DAM 4: D4-3



LUPIN MINE DAM 4: D4-4