



2009 Annual Geotechnical Inspection Various Earth Structures Ulu, Nunavut

Prepared For:
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**Re: 2009 Annual Geotechnical Inspection
Various Earth Structures
ULU Mine, Nunavut**

Introduction

, In order to fulfill terms of the Water License for the Ulu site, MMG Resources Inc. has requested geotechnical inspections be conducted for the 2009 season. The inspections were undertaken by TBT Engineering Limited on August 25, 2009. This report provides a summary of these inspections and documents the findings.

The Ulu Gold Project is an advanced exploration project, owned by MMG Resources Inc.. The Water Board License for the mine was transferred to MMG when MMG acquired OZ Minerals and ownership of the mine in 2009. The project is located in Nunavut, approximately 530 km north east of Yellowknife at 66°55'N and 110°58'W, as shown in Figure 1. Mine locations and layout have been illustrated on Enclosures 1-3.

The purpose of the annual geotechnical inspection is to visually evaluate the performance of water and waste retaining structures from a geotechnical perspective. Following the inspection, the owner (MMG) is to be notified of any deficiencies.



The following facilities and structures have been identified previously for the annual geotechnical inspection program:

- Ulu Main tank farm containment berm.
- Day tank containment berm.
- Camp 3 tank farm containment berm.
- Mine sump
- Ore storage pad.
- Portal laydown pad.

Background

The following description of the mine history was provided in earlier inspection reports (BGC Engineering Inc. 2007)

“The Ulu Property was originally discovered by BHP Minerals in 1988, then there followed several years of additional exploration work. Mining consultant H.A. Simons Ltd. completed a pre-feasibility study of the project in September 1995, followed by the sale of the property to Echo Bay Mines Ltd. (Echo Bay) in November 1995. After receipt of appropriate permits and approvals in early 1996, Echo Bay mobilized camp and mining equipment over the winter road to their temporary Camp 3, located south of the Ulu site. Following from that initial mobilization, Echo Bay built the 8 km all-weather road to the

Ulu airstrip and the Ulu camp facilities undertook surface diamond drilling and excavated a portal and completed a 632 m ramp to the 75 m level.

In February 1997, Echo Bay submitted an environmental assessment for the project. Also in 1997, additional ramp development was undertaken to the 155 m level, along with other development and diamond drilling work, but the project was shut down in August 1997 due to low gold prices. Echo Bay then provided updated Feasibility Studies in December 1997 and October 1998, but the project activity generally remained dormant.

In December 2003, Wolfden purchased the Ulu Property from Echo Bay. Echo Bay's Water License for the site was transferred to Wolfden by the NWB in a letter dated March 23, 2004. Zinifex subsequently purchased Wolfden earlier in 2007, and then merged with Oxiana Ltd. in 2008 to form OZ Minerals. "

In 2009 the property was transferred to MMG Resources Inc. as a part of the acquisition of Oz Minerals.

No mining activity occurred at the site over the past year.

Project Elements

The Ulu project site consists of three main components, from south to north:

1. Camp 3 (fuel tank farm and maintenance building), borrow pits and explosives magazines located on an esker just northwest of Reno Lake North.
2. An airstrip, approximately 1350 m long x 30 m wide, located over bedrock exposures to the north.
3. The Ulu camp and portal, located at the north end of the site.

As reported earlier (BGC Engineering Inc. 2007), the Ulu camp location is on a glacially modified bedrock outcrop bounded by West Lake and East Lake to the southeast. Ulu Lake is located to the northeast. The terrain consists of exposed bedrock, boulder fields, and occasional glacial erratics. Areas near the lakes and watercourses contain wetlands and sedge grasses. The majority of the surface drainage from the camp site, waste rock and ore storage pads drains into East Lake, which discharges into Ulu Lake. Some surface drainage from the northern end of the campsite pad flows overland and then into Ulu lake. A small southwestern portion of the ore storage pad flows west, possibly into West Lake.

The Ulu project site is located within the continuous permafrost zone of northern Canada. The Lupin Mine, approximately 150 km to the south is reported to have a permafrost depth of approximately 540 m. At High Lake, approximately 50 km to the north of Ulu, permafrost has

been calculated from temperature measurements taken in exploration drill holes to be approximately 440 m deep.

Climatic Information

No long term climate records are available for the Ulu site. Data provided to us based on regional correlations of nearby weather stations and suggests:

- One day Probable Maximum Precipitation (PMP) estimate of 157 mm.
- Mean annual precipitation amount of 280 mm
- Mean annual lake evaporation value of 240 mm.

Site Inspections

The various earth structures at the Ulu Mine were inspected by TBT Engineering on August 25th, 2009. The inspections were completed in the company of Andrew Mitchell of MMG Resources Inc

Each of the earth structures was visually inspected, photographed and a standardized site inspection form was completed. Areas of concern were discussed on site with MMG.

Findings And Conclusions

Details of the various site inspections have been documented on the attached individual site reports (Appendix A). These have been updated in a standardized format to be consistent with previous Annual Inspections.

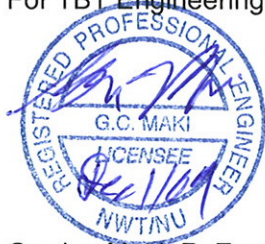
The inspections confirm the earth structures are generally in satisfactory condition with some liner related issues to be attended to. Repair and restoration of the gravel covers over the liners has been recommended for most of the containment berms at Ulu.

The above comments are based on the current Ulu operational conditions; the site is currently not being used, there are no mining activities. Prior to reinstatement of mine operations the earth structures should be re-evaluated to confirm their suitability to the specific operational situations.

Closure

We trust the above addresses your requirements at this time. Please contact us at your convenience should you have any questions.

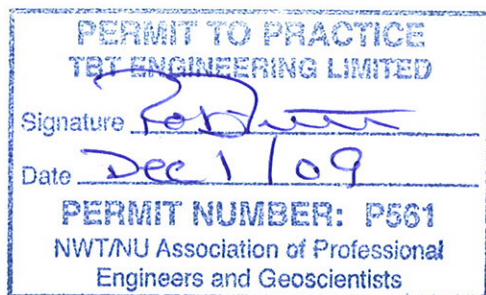
Yours truly,
For TBT Engineering



Gordon Maki, P. Eng.
Manager of Geotechnical Engineering

A handwritten signature in blue ink, likely belonging to Wayne Hurley.

Wayne Hurley
Vice-President



APPENDIX “A”

2009 ANNUAL GEOTECHNICAL INSPECTION
OF SELECTED STRUCTURES

Draft

ULU TANK FARM CONTAINMENT BERM

LOCATION:	Northeast corner of the Ulu camp pad.
FUNCTION:	Provides secondary containment for five large fuel tanks and numerous barrels of fuel.
SIZE:	~20 m wide by ~50 m long.
BERM HEIGHT:	~1.5 to 2 m above adjacent grade.
CREST ELEVATION:	No survey information available
BERM CONDITION:	Berm is constructed from esker sand and gravel and appears in good condition. Numerous animal burrows observed on the outside slope of the berm. The liner is exposed in several areas. No tears noted.
SEEPAGE:	No evidence of seepage observed at the exterior berm toe. Small amounts of water are being retained within the storage area.
MAINTENANCE/MONITORING RECOMMENDATIONS:	The areas of exposed liner should be recovered with granular fill to prevent deterioration.
CONCLUSIONS:	The berm appears in generally satisfactory condition. See above maintenance item.



Exterior Berm



Exposed Liner

DAY TANK CONTAINMENT BERM

LOCATION:	Adjacent to powerhouse area.
FUNCTION:	Provides secondary containment for one fuel tank.
SIZE:	~5 m wide by ~5 m long.
BERM HEIGHT:	~1 to 1.2 m above adjacent grade.
CREST ELEVATION:	No survey information available.
BERM CONDITION:	Berm is constructed from esker sand and gravel and appears in overall good condition. Liner exposed in two locations (loose in one).
SEEPAGE:	No evidence of seepage observed at the berm toe.
MAINTENANCE/MONITORING RECOMMENDATIONS:	The areas of exposed liner should be recovered with granular fill to prevent deterioration.
CONCLUSIONS:	The berm appears in generally satisfactory condition. See above maintenance item.



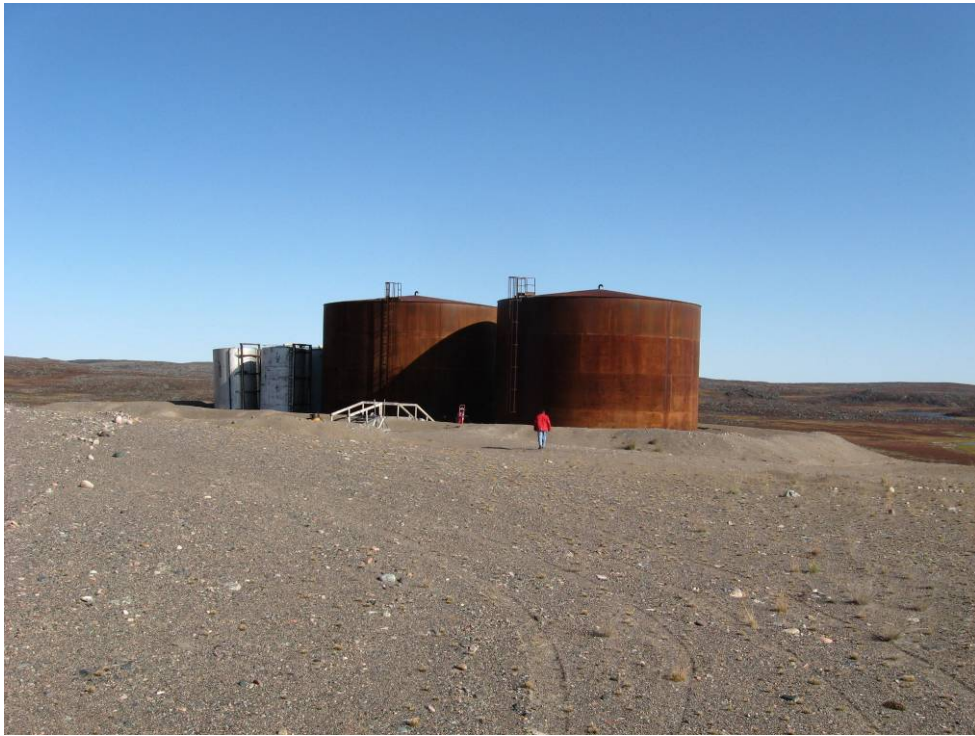
Day Tank Berms



Exposed Liner

CAMP 3 TANK FARM CONTAINMENT BERM

LOCATION:	Far southern end of the esker, west of Reno Lake North.
FUNCTION:	Provides secondary containment for two large fuel tanks and six smaller skid-mounted tanks.
SIZE:	~30 m wide by ~60 m long.
BERM HEIGHT:	~1.5 to 2 m above adjacent grade on one side and ~1 to 1.2 m on the other.
CREST ELEVATION:	No survey information available
BERM CONDITION:	Berm is constructed from esker sand and gravel and appears in good condition. Liner exposed in several locations. Small tears are beginning to develop.
SEEPAGE:	No evidence of seepage observed at the berm toe.
MAINTENANCE/MONITORING RECOMMENDATIONS:	The areas of exposed liner should be recovered with granular fill to prevent deterioration. Any tears should be repaired to ensure watertight conditions.
CONCLUSIONS:	The berm appears in generally satisfactory condition. See above maintenance item.



Camp 3 Tank Farm



Exposed Liner



Exposed Liner



Torn Liner

MINE SUMP

LOCATION:	Directly outside the portal, uphill from both a local access road and the portal laydown pad.
FUNCTION:	Provides containment for settling and sediment retention of mine water pumped from the decline ramp.
SIZE:	~20 m wide by ~30 m long.
BERM HEIGHT:	~1.5 to 2 m above adjacent grade.
CREST ELEVATION:	No survey information available.
BERM CONDITION:	<p>Berm is constructed from rockfill (waste rock) and esker sand and gravel, The banks are oversteepened.</p> <p>Geomembrane liner within berm is exposed at several locations. The liner at north end of the pond is loose. Small tears are developing in the liner.</p>
SEEPAGE:	No evidence of seepage observed at the berm toe.
MAINTENANCE/MONTORING RECOMMENDATIONS:	Before the sump is put back into service the liner and side slopes should be repaired/restored.
CONCLUSIONS:	The berms are suitable for the interim. Before the sup is put back into use, the liner and slopes should be repaired.



Mine Sump Pit



Exposed Liner



Exposed Liner



Typical Small Tear in Liner

PORTAL LAYDOWN (WASTE ROCK) PAD

LOCATION:	Pad is located just downhill from the portal and local access road, approximately 150 m from East Lake.
FUNCTION:	Initially constructed from waste rock from the decline ramp development. Mine muck material was placed on the pad covers a portion of the silt control fence.
SIZE:	~50 m wide by ~200 m long.
PAD THICKNESS:	Ranges from 1 to 5 m above original topography.
CREST ELEVATION:	No survey information available.
PAD CONDITION:	Pad is constructed from rockfill (waste rock), as shown on Figure 9. Toe of the pad sits at the angle of repose for rockfill. Scarps and cracks have developed on downhill toe due to sloughing of loose fill.
TOE DISCHARGE:	No seepage observed or heard of at the toe of the pad. Any potential pad drainage heads downhill into East Lake.
MAINTENANCE/MONITORING RECOMMENDATIONS:	No current requirements
CONCLUSIONS:	The pad appears shows signs of instability and erosion on the downstream side. Re-grading and shaping will be required before the pad is put into use. Runoff from the pad is collected within East Lake that passes through a wetland before entering Ulu Lake. The existing down slope silt curtain has been covered by the toe of the pad. The silt curtain should be restored prior to use of the pad.



Portal Laydown Pad



Downhill Face of Pad



Silt Fence



Slump Cracking Downhill Side

ORE STORAGE PAD

LOCATION:	Pad is located southwest of the Portal Laydown Pad, approximately 325 m from East Lake.
FUNCTION:	Constructed from waste rock and then partially covered with esker sand and gravel. The pad was originally constructed for temporary storage of ore before its proposed shipment. Two small ore stockpiles are currently located on the pad.
SIZE:	~100 m wide by ~200 m long.
PAD THICKNESS:	Ranges from 1 to 3 m above original topography.
CREST ELEVATION:	No survey information available.
PAD CONDITION:	Pad is constructed from rockfill (waste rock) and esker sand and gravel, as shown on Figure 10. Two ore stockpiles located on the east corner of the pad. Toe of the pad sits at the angle of repose for rockfill.
TOE DISCHARGE:	None noted. Surficial pad drainage would head west from the southwest corner of the pad. No drainage was observed in this direction.
MAINTENANCE/MONITORING RECOMMENDATIONS:	No current concerns.
CONCLUSIONS:	The pad appears stable with no signs of erosion or instability.



Storage Pad Outside Edge



Storage Pad Area

ENCLOSURES



CLIENT:

MIN METALS GROUP LTD



DWG. TITLE:

ULU FACILITY - OVERVIEW MAP

SCALE:

1:7,500

PROJECT NO.

09-161

PROJECT:

ULU MINE ANNUAL INSPECTION

ULU FACILITY, NUNAVUT

DATE:

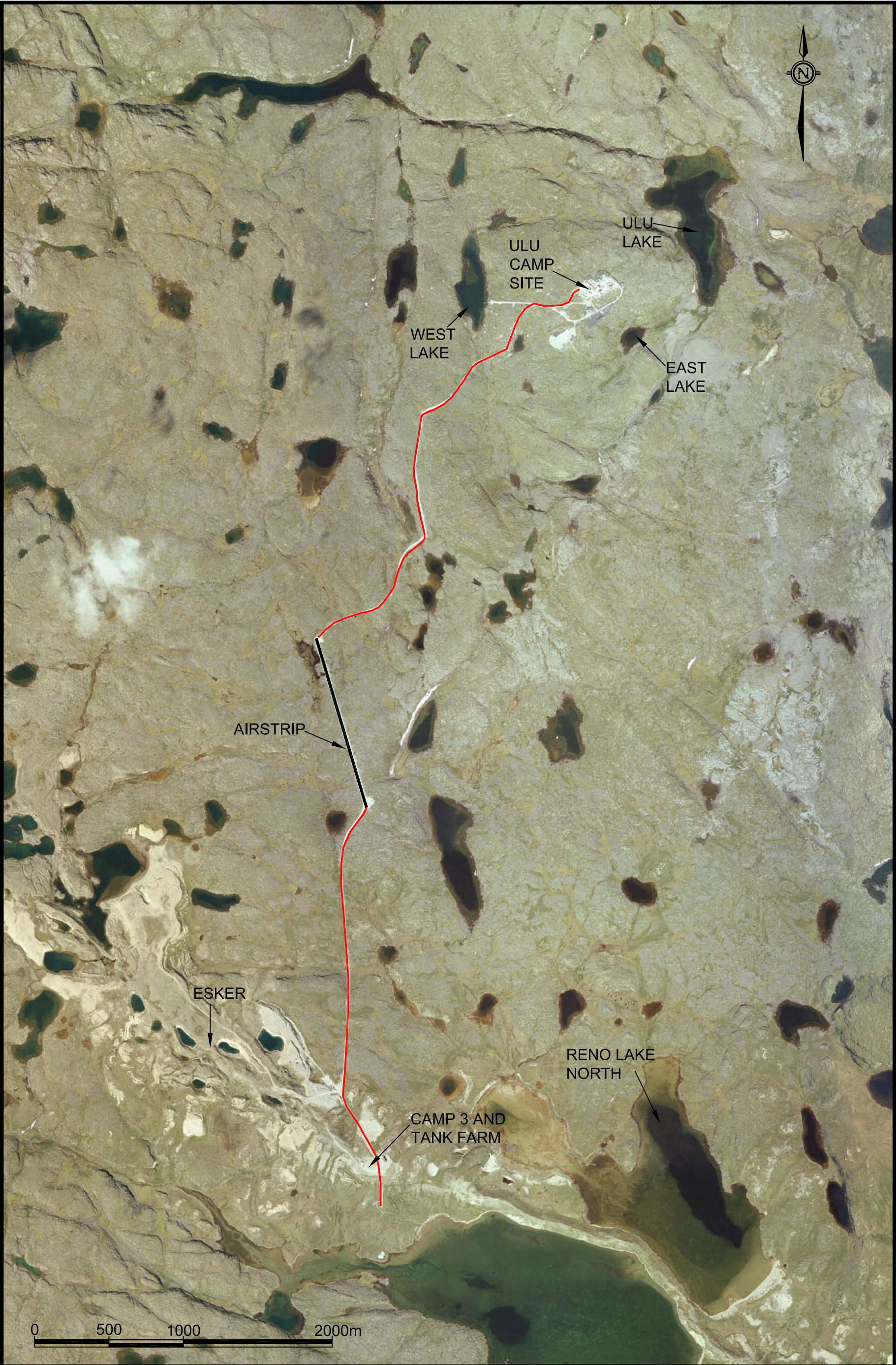
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ENCLOSURE

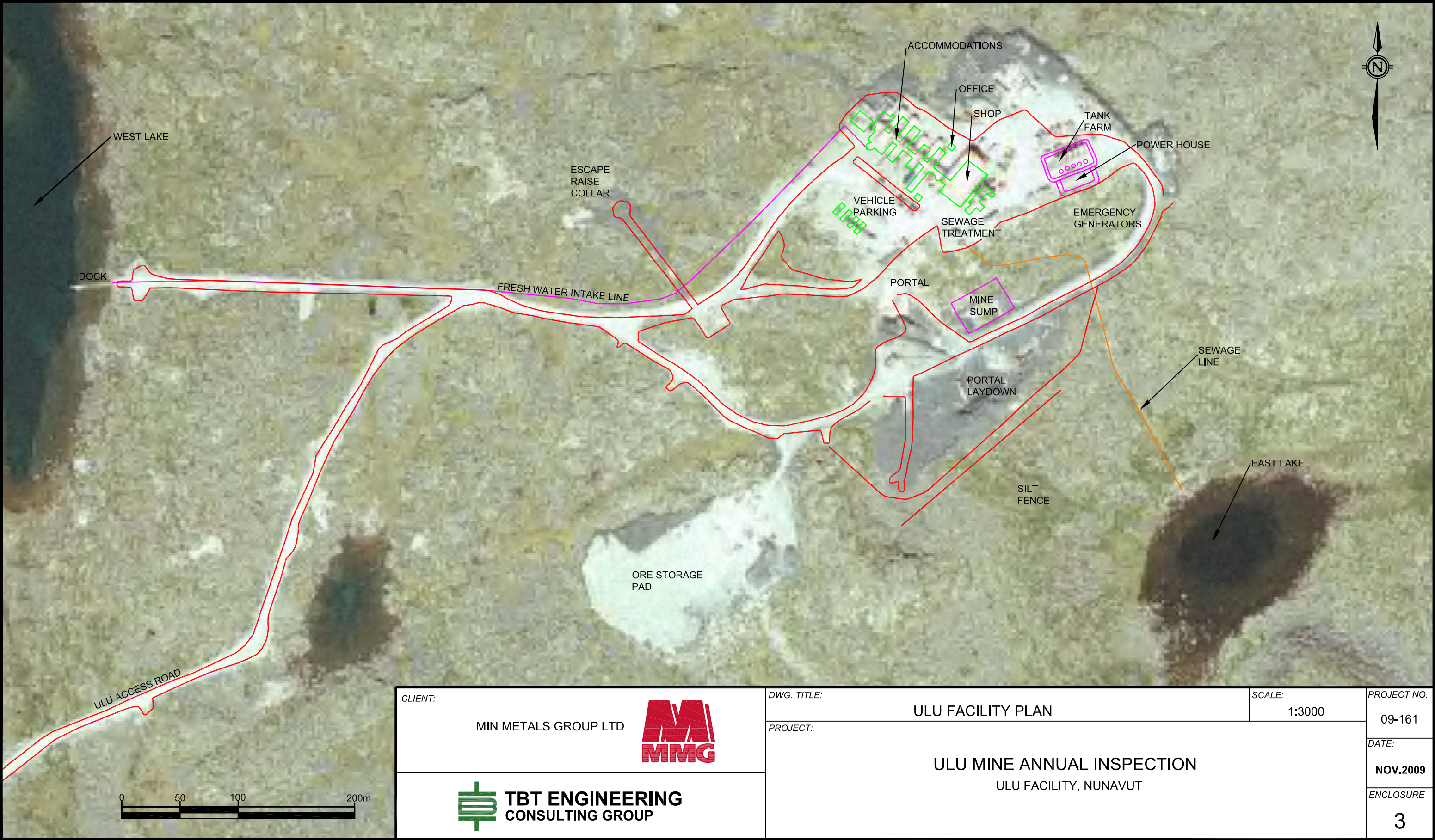
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TBT ENGINEERING
CONSULTING GROUP





CLIENT: MIN METALS GROUP LTD 	DWG. TITLE: ULU FACILITY AREA PLAN	SCALE: 1:25,000	PROJECT NO. 09-161
	PROJECT: ULU MINE ANNUAL INSPECTION ULU FACILITY, NUNAVUT	DATE: NOV.2009	
 TBT ENGINEERING CONSULTING GROUP			ENCLOSURE 2



CLIENT:

MIN METALS GROUP LTD





TBT ENGINEERING
CONSULTING GROUP

DWG. TITLE:

ULU FACILITY PLAN

PROJECT:

ULU MINE ANNUAL INSPECTION
ULU FACILITY, NUNAVUT

SCALE:

1:3000

PROJECT NO.

09-161

DATE:

NOV.2009

ENCLOSURE

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