

Lupin Mines Incorporated

A wholly owned indirect subsidiary of Elgin Mining Inc.

Lupin Mine Site

Nunavut, Canada

Sampling Procedure: Tailings Containment Area and Sewage Lakes Disposal Facility (Care and Maintenance)

March 2012

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Document Control

Revision No	Date	Details	Author	Approver
1.0	20/03/12	Reformatted to Lupin Mines standard. Document re-organized for readability and clarity. Added figures to illustrate sampling locations. Addressed comments made by EC (2009).	S. Hamm	P. Downey

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1 Introduction

Lupin Mines Incorporated (LMI), a wholly owned indirect subsidiary of Elgin Mining Inc. (Elgin), has prepared this Sampling Procedure (the Procedure) to support activities occurring under Water License Number 2AM-LUP0914, Part E.

An annual review of the Procedure takes place and revisions are submitted as necessary with the annual report. The current Type A water licence 2AM-LUP0914 (Water Licence) for the Lupin Gold Mine (Lupin or the Lupin Mine) is valid until March 31, 2014 and has been kept in good standing.

1.1 Project and Company Information

Elgin is a Canadian based company focused on the exploration and development of the Lupin Mine and Ulu Gold Project, both located in Nunavut, Canada.

Elgin purchased LMI, which owns the Lupin Mine, from MMG Resources Ltd. in July 2011. The Lupin site was an operational underground gold mine from 1982 to 2005 with temporary suspensions of activities between Jan 1998 and April 2000, and again between Aug 2003 and March 2004. The mine resumed production in March 2004 until 2005. Since 2005, the site has remained in care and maintenance.

An exploration program is currently underway at the Lupin site under water licence 2BE-LEP1217. All camp infrastructure required for the exploration program currently exists at the Lupin Mine site, which has previously been screened by the Nunavut Impact Review Board under file 99WR053 and approved by the Nunavut Water Board under water licence 2AM-LUP0914.

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Effective date: 30 March 2012

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Additional copies of this Procedure are available from General Administration.

This Procedure will be posted in key locations at the site, and all employees and contractors will be made aware of its contents.

1.2 *Site Location*

The Lupin Mine is located in Kitikmeot Region, Nunavut, 400 km north of Yellowknife, Northwest Territories and 285 km southeast of Kugluktuk. The geographic center of that property is 65° 45'29" N / 113° 13'10W. It is on the western shore of Contwoyto Lake, approximately 60 km south of the Arctic Circle.

1.3 *Environmental Policy- Key Components*

LMI looks to our employees, contractors and managers to adopt and grow a culture of environmental excellence. Together we achieve this by:

- Promoting environmental stewardship in all tasks. Nothing is too important that it cannot be done in a clean and responsible manner. We strive towards maintaining a zero-incident work place.
- Recognizing that we have a shared responsibility as stewards of the environment in which we operate. We will not walk away from a non-compliant act.
- Identifying, managing and mitigating environmental, business and social risks in an open, honest and transparent manner.
- Planning our work so it is done in the cleanest possible manner and executing work according to plan.
- Continually improving environmental and operational performance by setting and reviewing achievable targets.
- Providing appropriate and necessary resources in the form of training, personnel and capital, including that required for closure planning and reclamation.
- Managing our materials and waste streams, maintaining a high degree of emergency response preparedness and minimizing our operational footprint to maintain environmental protection at all stages of project development.
- Seeking to understand, learn from and mitigate the root causes of environmental incidents and near misses when they do occur.
- Employing systems and technology to achieve compliance, increase efficiency and promote industry best practices in development, operations and environmental stewardship.

1.4 Purpose and Scope

This Procedure is designed to provide the necessary information to prepare for and execute sampling related to from both the tailings containment area (TCA) and the sewage lakes disposal facility, under the Metal Mining Effluent Regulations (MMER) and the Water Licence.

1.5 Sampling Considerations

Considerations when collecting samples include:

- Different parameters require specific sample bottle sizes and preservatives.
- All samples are to be packed in coolers, with all the appropriate paperwork, and sent to the labs on a weekly basis (or more frequently if planes permit).
- Metals analysis includes a whole suite of metals, not just the ones required for the NWB or MMER.
- Field parameters (pH, conductivity, temperature) and a record of ambient conditions will be recorded at each sample location for each sample collected during the discharge process.

2 Discharge Sampling: Tailings Containment Area

Under the Water Licence and the MMER, periodic sampling of specified parameters from a series of locations is required in relation to discharge of water from the TCA, including those collected prior to discharge and samples collected at reference, discharge, and exposure areas, as illustrated in Figure 1.

2.1 Pond 2 Discharge (LUP-10)

LUP-10 is located on the west side of Dam 1A, where the siphons discharge into the environment. Flow rate must be read and recorded daily, and adjusted if necessary (large gate valve) to keep maintain a flow rate of 65,000 m³ per day (45 m³ per minute), and to ensure discharge does not exceed the Water Licence maximum of 70,000 m³ per day of discharge.

Daily sampling at LUP-10 is required, beginning the first day of discharge (July 15) and includes the following:

- 1 routine sample for pH and Total Suspended Solids (TSS);
- 1 sample for CN; and
- 1 total metals sample for As, Cu, Zn.

Weekly sampling at LUP-10 is required, beginning on July 19, then every Thursday (to minimise waiting time between planes) during discharge, and on the final day of discharge. Sampling includes the following:

- 1 routine sample for alkalinity (include this parameter with the daily routine sample);
- 1 nutrient sample for NH₄; and
- 1 metals sample for Pb, Ni, Cd (included in daily total metals sample).

Effluent characterisation is required by MMER Environmental Effects Monitoring (EEM) studies. Monthly sampling at LUP-10 is required, beginning at start of decant. Sampling must be done at no less than 1 month intervals, so take a sample July 19 and another on August 23. If discharge is still occurring on September 20, then collect a sample then as well. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness, NO₂, NO₃;
- 1 nutrient sample for NH₄ (same as first weekly NWB sample);
- 1 sample for Hg (lab detection limit MUST BE less than 0.1 µg/l);
- 1 sample for CN (same as daily NWB sample);
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd, Mo, Al, Fe (included in daily NWB sample); and
- 1 sample for ²²⁶Ra.

2.2 Downstream Sampling

There are five separate stations downstream between LUP-10 and outer Sun Bay. All must be read on a weekly basis after Pond 2 discharge commences, starting on July 19. Access to these locations is either by boat from camp or by argo from the powder magazine.

2.2.1 LUP-20

LUP-20 is located at the west end of Seep Creek before discharge into Unnamed Lake (southern extension of Inner Sun Bay). Sampling is required weekly during discharge. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness;
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 nutrient sample for NH₄; and
- 1 sample for CN.

2.2.2 LUP-21

LUP-21 is located at the north end of Concession Creek, before discharge into Unnamed Lake. This is a reference for EEM sampling; the water flows from Concession Lake and has not been affected by mine effluent. Sampling is required weekly during discharge. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness;
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 nutrient sample for NH₄; and
- 1 sample for CN.

In addition, a monthly sample (July 19, and when biological monitoring study is done in late August) at mid-depth is required for:

- 1 routine sample for pH, alkalinity, hardness, TSS, NO₃ (same sample as NWB, just include NO₃);
- 1 nutrient sample for NH₄ (same as weekly NWB sample);
- 1 sample for Hg (lab detection limit MUST BE less than 0.1 µg/l);
- 1 sample for CN (same as weekly NWB sample);
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd, Mo, Al, Fe (same as weekly NWB sample);
- 1 sample for ²²⁶Ra; and
- Field temperature and dissolved oxygen (DO).

2.2.3 LUP-22

LUP-22 is located at Inner Sun Bay, midway between end of peninsula and west shore. Sampling is required at mid-depth commencing 1 week prior to discharge (July 8), weekly during discharge, and concluding 2 weeks after discharge ends. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness;
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 nutrient sample for NH₄; and
- 1 sample for CN.

2.2.4 LUP-24

LUP-24 is located in narrows between Inner and Outer Sun Bay. This is an exposure ear station for EEM sampling. Sampling is required at mid-depth commencing one week prior to discharge (July 8), weekly during discharge, and concluding two weeks after discharge ends. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness;
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 nutrient sample for NH₄; and
- 1 sample for CN.

In addition, a monthly sample (July 19, and when biological monitoring study is done in late August) at mid-depth is required for:

- 1 routine sample for pH, alkalinity, hardness, TSS, NO₃ (same sample as NWB, just include NO₃);
- 1 nutrient sample for NH₄ (same as weekly NWB sample);
- 1 sample for Hg (lab detection limit MUST BE less than 0.1 µg/l)
- 1 sample for CN (same as weekly NWB sample);
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd, Mo, Al, Fe (same as weekly NWB sample);
- 1 sample for ²²⁶Ra; and
- Field temperature and dissolved oxygen (DO).

2.2.5 LUP-25

LUP-25 is located in Outer Sun Bay. Sampling is required at mid-depth commencing 1 week prior to discharge (July 8), weekly during discharge, and concluding 2 weeks after discharge ends. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness;
- 1 total metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 nutrient sample for NH₄; and
- 1 sample for CN.

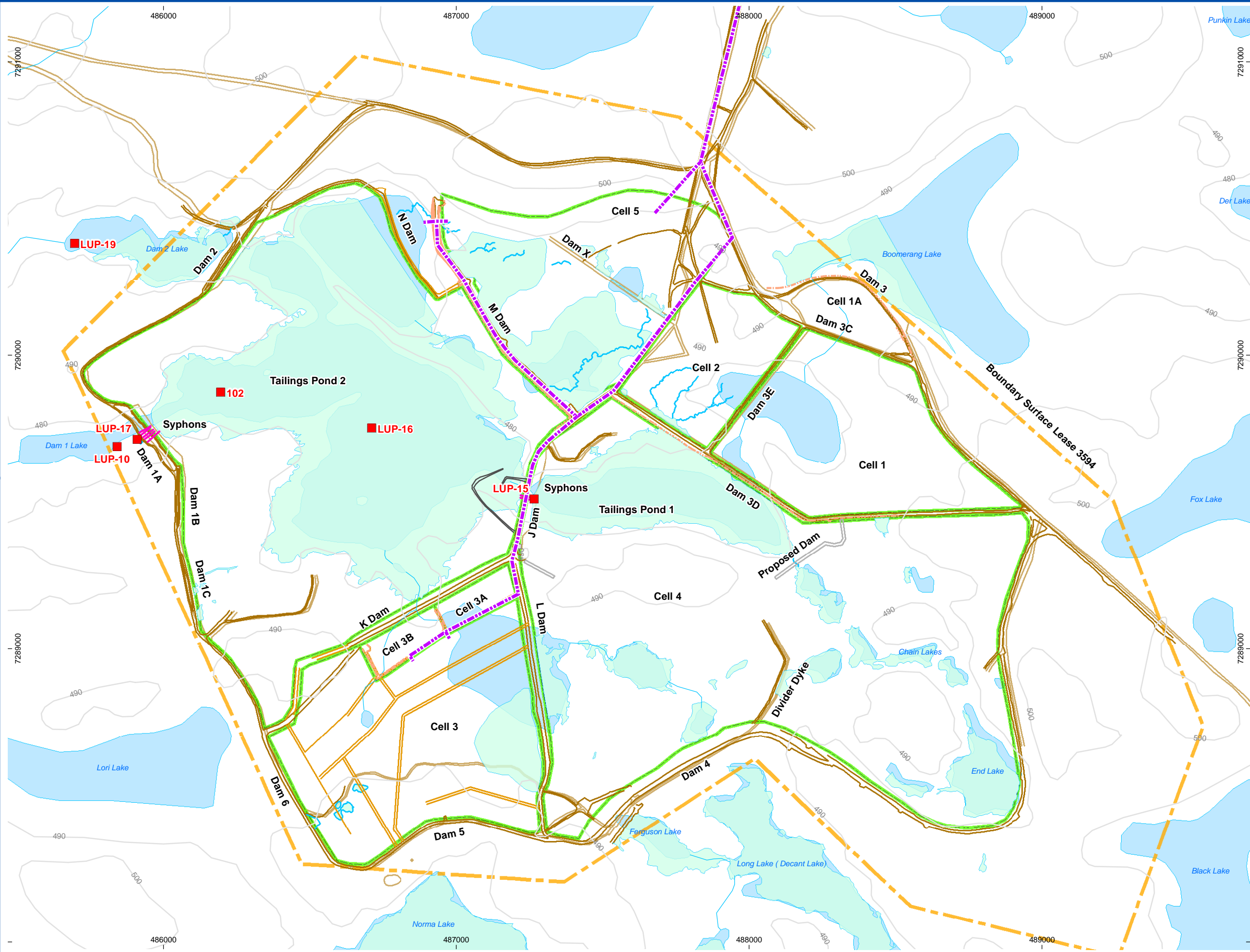
3 Discharge Sampling: Sewage Lakes Disposal Facility

3.1 Lower Sewage Pond (LUP-14)

LUP-14 is located at the siphon outlet off the dyke on the east side of the lower sewage pond. The flow rate must be read and recorded daily. There is no limit on sewage discharge flow rate. Field pH must be measured daily and closely watched to ensure that limits are not exceeded (6.0 to 9.5). If pH is not within the proper range for 2 consecutive days, shut down siphon and do not restart until pH in lower pond is back within range.

Sampling is required the first day of discharge and monthly thereafter. Take sample the morning of plane day. Sampling includes the following:

- 1 routine sample for pH, TSS, alkalinity, hardness, NO₂, NO₃;
- 1 nutrient sample for NH₄, Total Kjeldahl Nitrogen (TKN), Total Phosphorus (TP), and orthophosphate (oPO₄);
- 1 metals sample for As, Zn, Ni, Pb, Cu, Cd;
- 1 sample for Biochemical Oxygen Demand (BOD₅); and
- 1 microbiological sample for fecal coliforms.



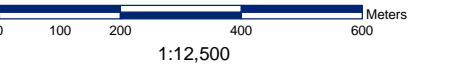
- Legend**
- Water Body 50k Topo
 - Building
 - Site Features
 - Tanks
 - Fuel Storage Containment Area
 - Berm Tank Farm
 - Berm
 - Slope Break
 - Roads
 - Contour (10m)
 - Fuel Pipe
 - Proposed Dam
 - Road
 - Dykes
 - Water -Stream, Creek
 - Cell Areas
 - Boundary Surface Lease 3594
 - Water Body Mine
 - Tailings Line
 - Siphons
 - Monitoring Program Station Locations



Map Sources/Notes:
Topographic features from 1:50,000 government topographic data.
Site Layout based on drawing by Morrow Environmental titled "Site Plan", 2005. File A053017R00.

Thermistor locations from map by MMG titled "Thermistor Location Figure 7" file Figure 7 Thermistors.dwg and 2006 Lupin

Coordinate System: NAD_1983_UTM_Zone_12N
NTS Map Sheets 076E11 and 076E14

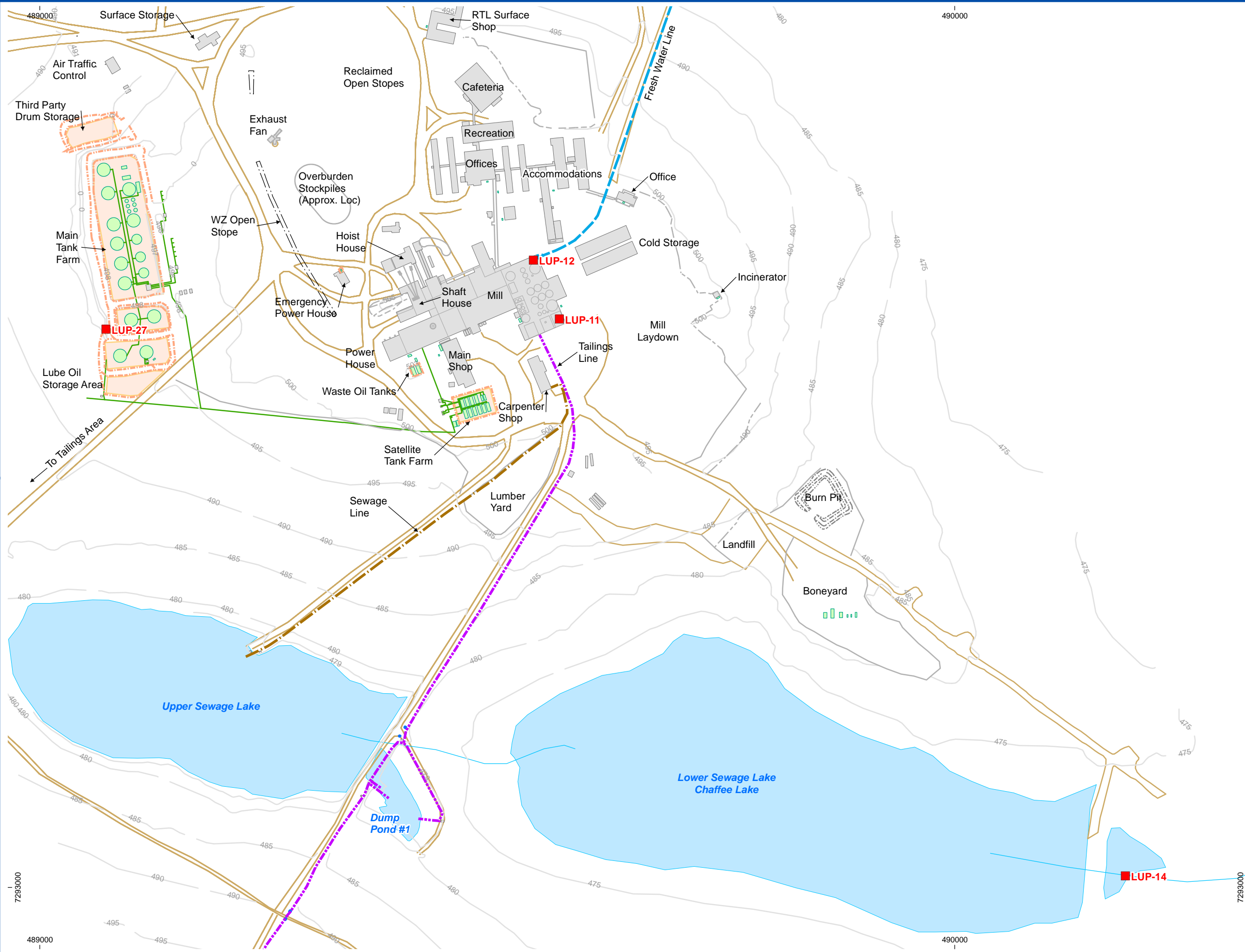


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Project: **Lupin Gold Mine**
Location: Kitikmeot Region, Nunavut, Canada
Discharge and Sampling Procedures

**Mine Tailings Containment Area
Sample Locations**



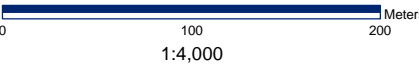
Legend

- Contour 5m
- Water Body 50k Topo
- Building
- Site Features
- Tanks
- Fuel Storage Containment Area
- Berm Tank Farm
- Berm
- Slope Break
- Roads
- Fuel Pipe
- Tailsings Line
- Water Pipeline (8 in Diam)
- Sewage Pipeline (6 in Diam)
- Monitoring Program Station Locations



Map Sources/Notes:
Topographic features from 1:50,000 government topographic data.
Site Layout based on drawing by Morrow Environmental titled "Site Plan", 2005. File A053017R00.

Coordinate System: NAD_1983_UTM_Zone_12N



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Project: **Lupin Gold Mine**
Location: Kitikmeot Region, Nunavut, Canada
Discharge and Sampling Procedures

Lupin Mine Site Sewage Lakes Sample Locations