

Lupin Mines Incorporated

A wholly owned indirect subsidiary of Mandalay Resources Corporation

Lupin Mine Site

Nunavut, Canada

Wildlife Management Plan

(Care and Maintenance)

March 2016

Lupin Mines Incorporated
Mandalay Resources Corporation
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Document Control

Revision No	Date	Details	Author	Approver
1.0	20/03/12	Reformatted to Lupin Mines standard Revised and updated to reflect new ownership and contact information Updated kitchen grease handling procedures Recognized species at risk that may occur in the Lupin area Addressed comments from EC (2010)	S. Hamm	P. Downey
2.0	24/02/13	Updated contact and general information Updated environmental policy Revised to be more concise and functional	D. Vokey	W. Osborne
3.0	18/03/16	Updated to reflect new water licence Updated contact and general information Provided additional clarity on what to do when there are encounters with wildlife (these edits are highlighted in yellow to facilitate review)	SRK	K. Lewis

Executive Summary

Lupin Mines Incorporated (LMI), a wholly owned indirect subsidiary of Mandalay Resources Corporation (Mandalay), has prepared this Wildlife Management Plan.

A review of the Plan takes place and revisions are submitted as necessary with the annual report. The current Type A water licence 2AM-LUP1520 (Water Licence) for the Lupin Gold Mine (Lupin or the Lupin Mine or the Site) is valid until August 18, 2020.

Executive Summary Inuktitut

Awaiting translation – to be provided as soon as possible

Executive Summary Inuinnaqtun

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Introduction

Lupin Mines Incorporated (LMI), a wholly owned indirect subsidiary of Mandalay Resources Corporation (Mandalay), has prepared this Wildlife Management Plan (the Plan).

An annual review of the Plan takes place and revisions are submitted as necessary with the Annual Report to the Nunavut Water Board (NWB). The current Type A Water Licence 2AM-LUP1520 (Water Licence) for the Lupin Gold Mine (Lupin or the Lupin Mine or the Site) is valid until August 18, 2020.

1.1 Project and Company Information

Mandalay is a Canadian based company focused on producing assets in Australia, Chile and Sweden, a development project in Chile and the exploration and development of the past-producing Lupin Gold Mine and the Ulu gold project, both located in Nunavut, Canada.

Mandalay purchased Elgin Mining Inc., which owns the Lupin Mine, in September 2014. Lupin was in operation from 1982 to 2005 with temporary suspensions of activities between January 1998 and April 2000, and again between August 2003 and March 2004. The mine resumed production in March 2004 until February 2005. Since 2005, the Site has remained in Care and Maintenance.

General site maintenance and facilities upgrades are underway at the Lupin Mine to assess operational requirements. The activities underway were screened by the Nunavut Impact Review Board under file 99WR053 and approved by the NWB under Water Licence 2AM-LUP1520. Surface exploration is conducted under Water Licence 2BE-LEP1217. All camp infrastructure required for the surface exploration program currently exists at the Lupin Mine.

Company:	LMI
Project:	Lupin Mine, Nunavut
Company Address:	Suite 330, 76 Richmond Street East, Toronto, ON M5C 1P1
Telephone:	778-386-7340
Email:	kLewis@elginmining.com
Attention:	Karyn Lewis, General Administration

Effective date: 18 March 2016

Distribution List:

Karyn Lewis	General Administration
Discovery Mining Services	Site Contractor
Golder Associates	Site Consultant
SRK Consulting	Site Consultant

Additional copies of this Plan are available from General Administration. This Plan 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 the Kitikmeot Region, Nunavut, 400 km north of Yellowknife, Northwest Territories and 285 km southeast of Kugluktuk, Nunavut. The airport serving this Site is at 65° 46'00" N and 111° 14'41" W. The Site is on the western shore of Contwoyto Lake, approximately 60 km south of the Arctic Circle (Figure 1).

1.3 Environmental and Sustainable Development Policy

Lupin Mines Incorporated (LMI) is committed to maintaining a safe, clean, compliant and respectful work environment. LMI looks to our employees, contractors and managers to adopt and grow a culture of social responsibility and 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.
- Procuring goods and services locally, where available, and favouring suppliers with environmentally and socially responsible business practices.
- 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.
- Working with stakeholders to identify and pursue opportunities for sustainable social and economic development and capacity building.

- Conducting early and ongoing stakeholder engagement relevant to the stage of project and mine development and operation.
- Recognizing diversity in the workplace and building meaningful relationships with all stakeholders in a timely, collaborative and transparent manner.

Through implementation of this policy, LMI seeks to earn the public's trust and be recognized as a respectful and conscientious employer, neighbor and environmental steward.

1.4 Purpose and Scope

This Plan is an appendix to the Care and Maintenance Plan. The purpose of this Plan is to address the conditions of Land Use Permit N2011C0026 to minimize and monitor the potential effects of the Lupin operation on wildlife while the facility is under Care and Maintenance. Wildlife encounters may occur at any time and it is everyone's responsibility to ensure the safety of people and animals on Site. A General Site Map is attached for reference (Figure 2).

The objectives of the Plan are to:

- Eliminate, minimize or control the adverse effects on wildlife during Care and Maintenance.
- Provide Site personnel with general procedures for wildlife impact mitigation.
- Address human safety concerns as they relate to wildlife.

Mitigation Measures

Animals may interact with the mine during normal movements within their home range. The mitigation measures will be managed on the project disturbance footprint and on all potentially affected areas during Care and Maintenance.

1.5 Mitigation Measures: Wildlife Incidents and Mortality

Measures to prevent and mitigate wildlife incidents and mortality include the following:

- Awareness
 - Provide wildlife awareness (especially bear awareness) as part of Site orientation. Review the mitigation measures outlined in this plan as part of Site orientation.
 - Check when exiting a building or going around a corner for the presence of animals nearby.
 - Provide food handling and waste disposal practices as part of Site orientation. Stress that any substance not common to their natural environment will attract animals to investigate; such as spilled coffee, orange or banana peels, bread crust, or cigarette butts.

- Report all wildlife incidents and mortalities immediately to Environmental Coordinator.
 - No feeding or harassing wildlife.
 - No hunting by any employee.
 - Wildlife has the right-of-way.
- Access
 - The airstrip is inspected daily for human and wildlife safety, and prior to take-off and landing of fixed wing aircraft.
 - Wildlife has the right-of-way on all access routes.
- Buildings
 - Maintain skirting on buildings to prevent animals from entering.
 - Keep building doors and vehicle windows closed to prevent animals from entering.
- Roads
 - All personnel at Site have a radio. Radios are used to warn Site of wildlife present in the area, especially bears or caribou.
 - Speed limits on Site roads are 30-40 km/hr; however, the tailing pond is 50 km/hr under most circumstances.
 - Wildlife has the right-of-way. Vehicle operators will yield to wildlife crossing on roads, be vigilant in watching for wildlife near roads and take all reasonable measures to avoid vehicle-wildlife incidences.
- Waste
 - Follow the Waste Management Plan to remove the presence of attractants and waste food. Incinerate food and kitchen wastes daily and with minimum storage time
 - Kitchen wastes are kept in enclosed metal containers

1.6 Wildlife Monitoring Reporting

Wildlife monitoring at the Lupin Site includes:

- Maintaining a Wildlife Sighting and Tracks Log
 - Record wildlife sightings and tracks in the general vicinity of the Site in the posted Log with the date, species, general location, and activity. (Appendix 1).
 - Advise camp personnel, as part of their Site orientation, of wildlife sighting reporting requirements. It is everyone's responsibility to fill out the Log and to avoid double reporting the same sighting.
 - Wildlife sighting and tracks logs are available to Regulators upon request.

- Report sightings to Environmental Coordinator or Site Manager
 - Report sightings of bears, musk ox, caribou, wolves, or wolverines in the vicinity of work crews immediately by radio if possible.
- The Environmental Coordinator or Site Manager are to monitor a grizzly bear sighting as required, and to use appropriate alerts and enforce access restrictions to all personnel. Specific mitigation measures are described in section 3.2 below.

1.7 Mitigation Measures: Wildlife Movements and Distribution

Impacts to natural wildlife movements in and around the Lupin Site can be mitigated by:

- Allowing animals to always have the right-of-way and preventing animals from being chased by vehicles;
- Restricting vehicles access where herds of animals are present;
- Advising charter aircraft and helicopters to avoid flying over migrating caribou, migratory birds nesting, and other large animals. A minimum of 1000 ft vertically, or deflect 1000 ft horizontally around the animals is recommended so as to not disturb them. For all flights during migratory bird breeding season 2,000 ft vertically; and near areas where migratory birds are known to concentrate (e.g.; Lower Sewage Lake) 3,600 ft vertically and 5,000 ft horizontal distance is recommended; and.
- Not flying closer for a picture or good look.

Specific Mitigation Measures

1.8 Specific Mitigation Measures: Caribou and Musk-ox

Specific mitigation measures for caribou and musk ox in and around the Lupin Site include:

- Report sightings in the vicinity of the Site or work crews immediately to the Environment Coordinator or Site Manager.
- When caribou are observed in the vicinity of operations, implement controls; such as restricting access, or adjusting the work areas or activities within the work areas.
- These animals always have the right-of-way.

1.9 Specific Mitigation Measures: Carnivores (Grizzly Bear¹, Wolverine², Foxes and Wolves)

Specific mitigation measures for bear, wolverine, fox and wolf in and around the Lupin Site include:

- Ensure personnel are made “bear aware” and they immediately report a bear sighting to Environment Coordinator or Site Manager.
- Ensure there is a person on Site that is trained in wildlife behavior and deterrent techniques, including firearms and bear bangers. This person will be the lead person for any mitigation actions required with carnivores; especially bears.
- Provide bear bangers and bear spray to Site personnel.
- Follow the *Waste Management Plan* that includes the food and attractants storage and disposal of food by incineration.
- Maintain skirting on all buildings and close all doors to prevent entry.
- Remove all mortalities near the mine footprint that could attract predators if safe to do so.
- Block access to any kill site where the carnivores are present, and let them finish their meal. Once the animals have left, remove any remnants from site to the magazine or Fingers Lake Esker Quarry to keep the scavengers away from workers.

1.10 Specific Mitigation Measures: Raptors (Hawks and Falcons) and Migratory Birds

Specific mitigation measures for raptors and migratory birds in and around the Lupin Site include:

- Keep aircraft away from nesting sites, a minimum of altitude of 2000 ft and a horizontally distance of 2000 ft.
- Avoiding all activity within 100 m of an occupied nest prior to the fledging period (when chicks fly from the nest) to reduce the risk of premature nest departure³ or injury to the birds (10 to 20 August for peregrine falcons⁴ in the Lupin area). There are known nests at the Explosives building and the Head Frame.
- It may be necessary to remove the nest to protect the birds from Site activities. A nest may be removed before the eggs are laid. This action requires consultation with Nunavut Department of Environment and Environment Canada.

4. Handling and Disposal of Domestic Waste

Per the Solid Waste Management Plan, domestic waste management is required to prevent wildlife attraction and incidents from occurring. It includes:

¹ Grizzly bear is listed as a Species of Special Concern under COSEWIC.

² Wolverine (western population) is listed as a Species of Special Concern under COSEWIC.

³ Severe disturbance at the nest can cause young raptors to jump out of the nest before they are ready, greatly reducing their survival rate.

⁴ Peregrine falcon is listed as a Species of Special Concern under COSEWIC and Schedule 3 of SARA.

- Food waste and kitchen grease is stored inside a secure metal container until it is picked up by Site services.
- There is prompt collection of waste from the kitchen area to the incinerator, where the waste is promptly incinerated.
- Garbage bags must not be left outside of buildings where birds can get access.
- The incinerator is housed within a secure concrete block building.
- Grease is burned in the incinerator. This avoids extended storage while waiting for back hauls.

Figures



Legend

 Project Location

Coordinate System: NAD_1983_UTM_Zone_12N

Map Sources/Notes:
Various Canadian Government Websites - Feb 2012



1:15,000,000

Approved By: SH Prepared By: PW
Project No.: LUP Date Revised: 21 Mar 2012
File Name: Lup-12-10-01-LocationMap-A.mxd

Project:

Lupin Project

Location: Kitikmeot Region, Nunavut, Canada

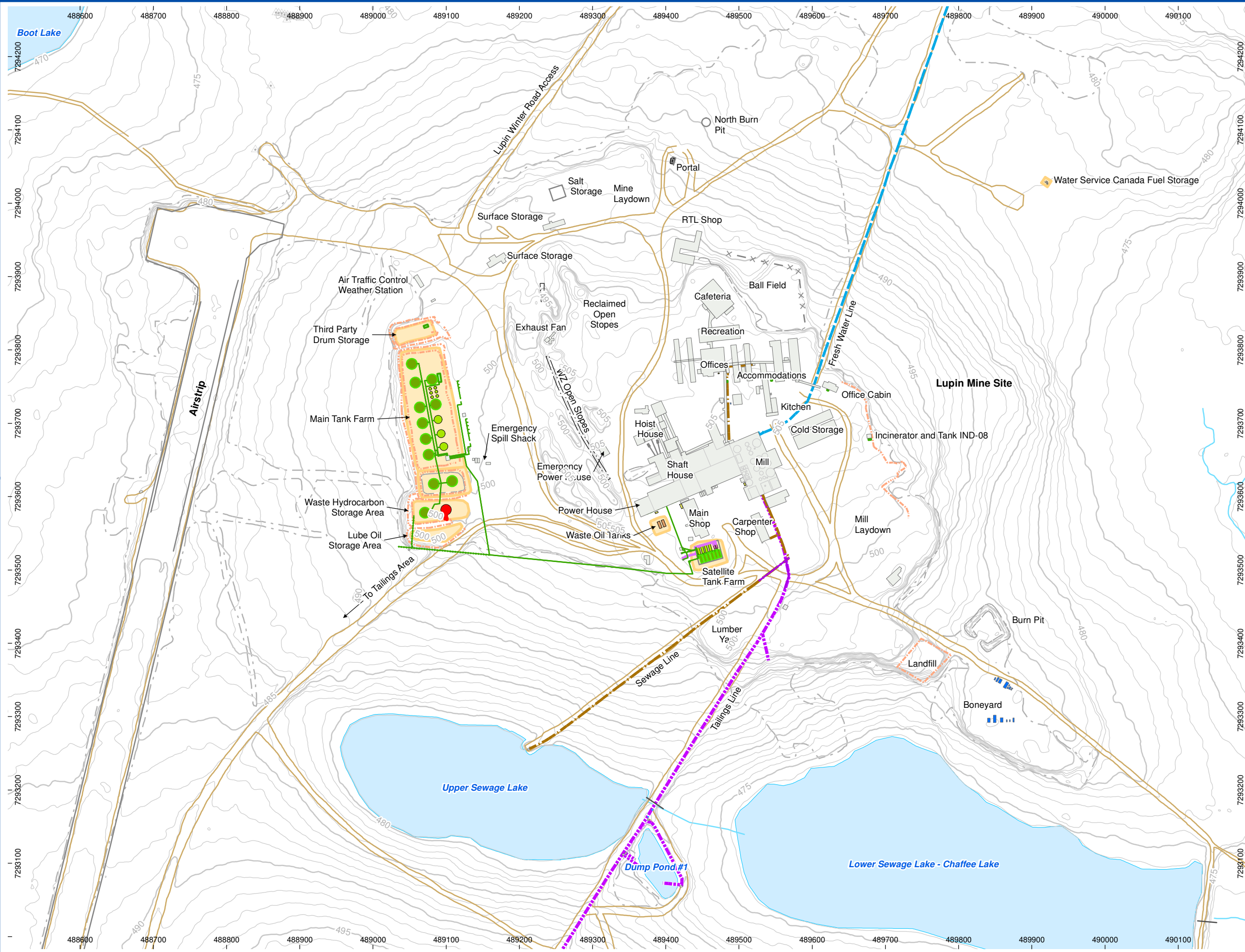
Lupin Mine Annual Report - Water Licence 2AM-LUP0914

Location Map - Lupin Mine

**Lupin Mines
Incorporated**

 **ELGIN
MINING INC.**

Figure: **1**
Rev: 120321



Legend

Building

Tank Farm Berm Outline

Lake

Edge of Disturbed Area

Stream

Road

Topographic Contour (5m)

Topographic Contour (1m)

Sewage Pipeline (6 in Diam)

Tailings Line Route

Water Pipeline (8 in Diam)

Pipe - Fuel Type, Status

Diesel, Active

Diesel, Abandoned

Diesel, Uncertain

Gasoline, Active

Jet A, Active

Location of Tank - FuelTypeDiesel P-40Diesel P-50DieselWaterJet-AGasGlycolWaste OilEmptyUnknown

Map Sources/Notes:
Topographic features and site layout from Satellite image dated Aug 21, 2012
Fuel tank and Fuel Containment layouts adapted from drawings by Emerson Engineering dated Oct 17, 2011 and from data updated to March 01 2013

Coordinate System: NAD_1983_UTM_Zone_12N

02550100150200

Meters

1:5,000

Approved By: JCBPrepared By: PW

Project No.: LUPDate Revised: 01 Apr 2013

File Name: Lup-13-04-01-SiteFacilities-B.mxd

Project:**Lupin Gold Mine**

Location:Kitikmeot Region, Nunavut, Canada

Fuel Containment Management Strategy

General Site Map - Lupin Mine

Appendix 1: Wildlife Sighting and Tracks Log

LUPIN MINES INC.

WILDLIFE & TRACKS SIGHTING LOG (Reported to the Gov't of Nunavut)

(All mortalities found must be reported to management immediately for disposal actions)

DATE	SPECIES	LOCATION	ACTIVITY	Observer (name)
day/month/year	Grizzly Bear, Black Bear, Fox, Wolf, Wolverine, Musk Ox, Caribou, Falcon, Geese, Ducks, Cranes, Arctic Hare	Airport, Camp & Mill area, Main Tank Farm, Tailings Pond area, Sewage Ponds, Contwoyto Lake Rd, Sun Bay	walking, running, feeding, resting, flying, fleeing	person reporting the sighting