PART 1 FORM
PROJECT PROPOSAL INFORMATION REQUIREMENTS

To access NIRB documents, project screenings, and project reviews please visit the Nunavut Impact Review Board's ftp site http://ftp.nirb.ca/. The NIRB's website (www.nirb.ca) is currently under construction. Please contact info@nirb.ca should you have any questions or require further information.

IMPORTANT!
Please be advised that your application will not be processed until the Sections 1 - 9 are completed in their entirety, in both English and Inuktitut (+ Inuinnaqtun, if in the Kitikmeot).

SECTION 1: APPLICANT INFORMATION

1. Project Name Lupin Exploration Project

2. Applicant's full name and mailing address:

Lupin Mines Incorporated – an indirect wholly owned subsidiary of Elgin Mining Inc.	Phone:	604-682-3366
#1104 – 750 West Pender Street	Fax:	604-682-3363
Vancouver, BC V6C 2T8	Email:	klewis@elginmining.com

3. Primary contact's full name and mailing address:

Patrick Downey	Phone:	604-682-3366
#1104 – 750 West Pender Street	Fax:	604-682-3363
Vancouver, BC V6C 2T8	Email:	pdowney@elginmining.com

SECTION 2: AUTHORIZATION NEEDED

1. Indicate <u>all</u> authorizations associated with the project proposal:

	Regional Inuit Association (RIA)		Canadian Launch Safety (CLS)
X	Nunavut Water Board (NWB)		Environment Canada (EC)
	Nunavut Planning Commission (NPC)		Government of Nunavut (GN)
X	Indian and Northern Affairs Canada (INAC)		Department of National Defense (DND)
	Department of Fisheries and Oceans (DFO)		Hamlet
	Community Government & Services (CG&S)		Parks Canada (PC)
	Nunavut Research Institute (NRI)		Canadian Wildlife Service (CWS)
	Department of Culture, Language, Elders, and Youth (CLEY)		Other (please specify):

2. List the <u>active</u> permits, licenses, or other authorizations related to the project proposal, and their expiry date(s):

Nunavut Water Board - Class A Water License 2AM-LUP0914 – Expires March 31, 2014

3. **List the <u>pending</u> permits, licenses, or other authorizations related to the project proposal:**

INAC – Land Use Permit Application

NWB – Type B Water License

4. **Has this project or <u>any components of this project</u> been previously screened or reviewed by NIRB?**

☐ X **YES** ☐ **NO**

If YES, indicate the previous project name and NIRB File No.

NIRB File No.99WR053, Renewal of Lupin Mine Project, dated May 6, 2008

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. **Indicate the type of project proposal (check all that apply)[1,2]:**
(See Appendix A for Project Type Definitions)

1	All-Weather Road/Access Trail		**9**	Site Cleanup/Remediation	
2	Winter Road/ Winter Trail		**10**	Oil and Natural Gas Exploration/Activities	
3	Mineral Exploration	X	**11**	Marine Based Activities	
4	Advanced Mineral Exploration		**12**	Scientific/International Polar Year Research*	
5	Mine Development /Bulk Sampling		**13**	Harvesting Activities*	
6	Pits and quarries		**14**	Tourism Activities*	
7	Offshore Infrastructure (port, break water, dock)		**15**	Other[2]:	
8	Seismic Survey				

<u>Please note:</u>

1. All project types listed above, except those marked with an asterisk (*), will also require the Proponent to submit a **Part 2 Project Specific Information Requirement (PSIR) Form**. The NIRB application process will not be considered complete without the Part 2 PSIR Form.
2. Please be advised that in order to complete the NIRB process, the NIRB may request additional information at any time during the process.
3. If "Other" is selected, contact NIRB for direction on whether a Part 2 PSIR Form is required.

2. If Project Type 3, 4 or 5 was selected above, please indicate the mineral of interest that is being extracted. Include a brief description.

X	Base Metals (zinc, copper, gold, silver, etc)___Gold_____
	Diamonds
	Uranium
	Other: _____

3a. If Project Type 12, 13 or 14 was selected above, complete the table and questions below.

Transportation Type	Quantity	Proposed Use	Length of Use
E.g. Helicopter	*1*	*Site to site pick ups and drop offs*	*6 days*

3b. Describe any docks, piers, air strips or related structures that are to be used in conjunction with the proposed project activities. **Please note**: *the building of new structures may require a Part 2 Form.*

The following existing infrastructure is available for use from the Lupin Mine Project: airstrip; water supply and distribution system; camp and kitchen; sewage collection and disposal systems; quarry; and various warehouse and maintenance shops.

3c. If a temporary camp site is to be established, describe the proposed structures in detail and indicate the type and source of power for the camp site if applicable.

As noted above, the existing camp for the Lupin Mine Project will be used.

4. Personnel

Total No. of personnel on site = (A): **30 from April to September**

Total No. of days on-site = (B): 183 / yr

Total No. of Person days (A) × (B) = Approximately 21,000

5. Timing

Period of operation: from **October 2011** to **October 2016**

Proposed term of authorization: from **October 2011** to **October 2016**

6a. Region (check all that apply):

☐ North Baffin	☐ Kivalliq	☒ Kitikmeot	☐ Transboundary: _____
☐ South Baffin	☐ National Park		

6b. Describe the location of the proposed project activities in a regional context, noting the proximity to the nearest communities and any protected areas.

The Lupin Mine site is located on the western shore of Contwoyto Lake, Nunavut, approximately 285 kilometers southeast of the community of Kugluktuk, 80 kilometers

south of the Arctic Circle and 400 kilometers northeast of the City of Yellowknife, Northwest Territories.

6c. Discuss the history of the site if it has been used for any project activities in the past.
The 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 in maintenance,

6d. Indicate if there are any known archaeological/palaeontological historical sites in the area.
If any, these would have been fully documented during previous operations.

7. Land Status (check all that applies):

[X]	Crown	[ ]	Commissioners'	[ ]	Municipal
[ ]	Inuit Owned Surface Lands	[ ]	Inuit Owned Sub-Surface Lands		

8a. Co-ordinates:

Min Lat (degree/minute)	65.680319	Min Long (degree/minute)	111.127935
Max Lat (degree/minute)	65.789691	Max Long (degree/minute)	111.349132

NTS Map Sheet No: 76E/14
(Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada)

8b. If the project proposal includes a **camp**, please provide the coordinates of the camp location

Lat (degree/minute)	65° 45' 54 " N	Long (degree/minute)	111° 14' 5 " W

If different from above for the camp:
NTS Map Sheet No:
Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada

Please note that additional location information may be required in a subsequent Project Specific Information Requirement (PSIR) submission. This may take the form of a digital Geographic Information Systems (GIS) file.

SECTION 4: NON-TECHNICAL PROJECT PROPOSAL DESCRIPTION

Please include a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- The project activities, their necessity and duration;
- Method of transportation;

- Any structures that will be erected (permanent/ temporary);
- Alternatives considered; and
- Long-term developments, the projected outcome of the development for the area and its timeline.

IMPORTANT: IF THE PROPOSED ACTIVITIES REQUIRE SUBMISSION OF A NIRB PART 2 PSIR FORM, PLEASE COMPLETE SECTION 8 ONLY, OTHERWISE CONTINUE ON WITH SECTION 5.

SECTION 5: MATERIAL USE

1. List equipment to be used (including drills, pumps, aircraft, vehicles, etc.):

Equipment type and number			Size – dimensions	Proposed use
3	FORD	F350	CREW CAB 4X4	General transport
1	FORD	F250	EXT CAB 4X4	General transport
1	GMC	K2500	SUBURBAN	General transport
1	GMC	K1500	SUBURBAN	General transport
1	FORD	L9000	TANDEM DECK	General transport
1	FORD	F350	REG CAB DRW 4X4	General transport
1	FORD	F700	SERVICE TRUCK	General Maintenance
1	GMC	GENERAL	JET FUEL TRUCK	Fuel Transport
1	VOLVO	5350B	ROCK TRUCK 6X6	General Transport
1	KOMATSU	HM 300	ROCK TRUCK 6X6	General Transport
1	KOMATSU	WA250 PT	LOADER	Equipment Carrier
1	KOMATSU	WA250	LOADER	Equipment Carrier
1	CATERPILLAR	966 G	LOADER	Equipment Carrier
1	CATERPILLAR	966 C	LOADER	Equipment Carrier
1	KOMATSU	PC 200-7	EXCAVATOR	General Maintenance
1	CASE	580 C	BACK HOE	General Maintenance
1	KOMATSU	D61 EX 15	DOZER W/RIPPER	General Maintenance
1	JOHN DEERE	350	DOZER	General Maintenance
1	CATERPILLAR	14 H	GRADER	Road Maintenance
1	GROVE	RT 522	20 TON R/T CRANE	General Maintenance
1	JLG		MAN LIFT	General Maintenance
2	KOHLER	250KW	GEN SET	Power Generation
1	KUBOTA		GEN SET	Power Generation
1	ISUZU		GEN SET	Power Generation
2	JOHN DEERE		GEN SET	Power Generation
3	CATERPILLAR		GEN SET	Power Generation

2a. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Methods
P-40 Diesel	9 – 350,000 Imp Gal Tanks 2- 360,000 Imp Gal Tanks 6- 18,000 Imp Gal Tanks	463,563 Imp Gal	Main Tank Farm Main Tank Farm Satellite Tank Farm
P-50 Diesel	3 – 187,000 Imp Gal Tanks	47,618 Imp Gal	Main Tank Farm

	4- 18,000 Imp Gal Tanks		Satellite Tank Farm
Gasoline	2- 5000 Imp Gal Tank	546 Imp Gal	Satellite Tank Farm
Aviation fuel	1 -360,000 Imp Gal Tank	126,936 Imp Gal	Main Tank Farm
Propane	5 – 100 lb cylinders		Away from camp in specifically designated storage area where they are to be stored vertically and chained to prevent tipping
Ralube 40	Super B Tanker	40,000 L	Main Tank Farm
W30 Lube Oil	24 – 1,600 L cubes	38,400 L	Main Tank Farm
Hazardous Materials and Chemicals		**Total Amount of Hazardous Materials and Chemicals (in Litres)**	
Calcium Chloride	One tonne bags	Approx. 300 – 400 tonnes	Stored within a covered storage area at site on wooden pallets

2b. Describe the proposed Spill Prevention Plan.

Please see attached Spill Contingency Plan

3a. Detail the anticipated daily water consumption rates

Daily amount (m^3)	Proposed water retrieval methods	Proposed water retrieval location
50 m3/day	Existing pump and pipeline	Contwoyto Lake is the water source

3b. Have you applied for a water License with the Nunavut Water Board?

☐ **X YES** ☐ **NO**

If yes, what class of licence?

☐ **Class A Water Licence** ☐ **X Class B Water Licence**

Note: Water consumption and water supply facilities are licensed under the class A Water Licence 2AM-LUP0914 and previously screened under NIRB File No.99WR053

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

1. List the types of waste associated with the proposed project activities:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	Minimum	Within existing sewage ponds	
Greywater	Minimum	Within existing sewage ponds	
Combustible wastes	Minimum	Using existing camp	

		incinerator and burn pit	
Non-Combustible wastes	Minimum	Existing landfill	
Hazardous waste including waste oil	Nil	Transported to Yellowknife for disposal	
Drill Waste:		Existing Tailings Containment Area or drill sumps	
Empty barrels/ fuel drums		Transported to Yellowknife for disposal	

Note: Sewage pond, tailings containment area, landfill, burn pit and incinerator are licensed under the class A Water Licence 2AM-LUP0914 and previously screened under NIRB File No.99WR053

2. Describe the proposed Waste Management Plan.

See information in PSIR as well as Waste Management Plan for the Lupin Mine Site

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

1. List the community representatives that have been contacted and provide the minutes of the meetings if available:

Not applicable at this time. Future consultation will be regular and ongoing.

Community	Name	Organization	Date Contacted

SECTION 8: GENERAL QUESTIONS

1. Will you be disturbing any known archaeological sites?

☐ **YES** ☐ **X NO**

SECTION 9: APPLICANT SIGNATURE

Please sign and date your application:

Signature **Title** **Date**

APPENDIX A
Project Type Definitions

Access Trail: A project proposal with the objective of providing vehicular access to an area of interest involving minimal alteration to the terrain.

Advanced Exploration: A project proposal with the objective of identifying size, grade, and physical characteristics of a mineral occurrence and to assess the economic and technical feasibility of developing the mineral deposit into a producing mine

All-Weather Road: A project proposal with the objective of road construction for use in all seasons.

Bulk Sampling: A project proposal with the objective of extracting of large samples of mineralized material involving hundreds to thousands of tonnes. Samples are selected as representative of the potential mineral deposit being sampled. May involve crushing/milling (on small-scale)

Harvesting activities: A project proposal with the objective of harvesting animals, marine mammals and/or fish from their natural habitats by means of hunting or trapping for traditional and commercial use.

Marine Based Activities: Any activity occurring in the marine environment, such as vessel use associated with land-based activities or disposal at sea.

*Please note that normal community re-supply or individual ship movements not associated with land-based project proposals shall not be screened by NIRB (Section 12.12.2 of NLCA).

Mine Development: A project proposal with the objective of extracting broken rock with mineralization of sufficient grade and tonnage to sustain commercial mining operations (ore). Mining a body of ore can be achieved by either open pit and/or underground development. Mine development may involve milling. Milling involves treatment of the extracted ore through a combination of mechanical and chemical processes to selectively recover the valuable mineral.

Mineral Exploration: A project proposal with the objective of exploring an area to find geological anomalies. It involves site reconnaissance (ground and/or air) to locate broad and fiscal mineral deposits.

Offshore Infrastructure: A project proposal with the objective of building off loading facilities constructed off the shoreline and connected to the mainland of the marine or freshwater environment. Examples include a jetty, dock, or port facility.

Oil and Gas Exploration/Activities: A project proposal that includes 1) exploration, such as seismic or geological mapping, 2) drilling of oil and gas wells, 3) construction and operation of a pipeline, a gas processing plant or any oil and gas facility within Nunavut.

Pits and Quarries: A project proposal with the objective of pitting, which involves the extraction of granular material (i.e. sands and gravels) and quarrying, which involves the removal of consolidated rock (i.e. bedrock, frozen soil).

Scientific Research: A project proposal with the objective of implementing a series of site activities comprised of observation of phenomena, measurement and collection of data necessary for scientific investigation in designated areas within a limited time period.

Seismic Survey: A project proposal with the objective of conducting a survey to map the depths and contours of rock strata by timing the reflections of sound waves released from the surface. Survey site locations may be offshore (not within 12 nautical miles of any coast), near shore, and extended onshore.

Site Cleanups: A project proposal with the objective of site cleanups (includes DEW line site cleanups), which focuses on the remediation of chemically contaminated soils, stabilization of landfills and dumps, demolition/disposal of infrastructure and debris and monitoring after cleanup is completed.

Tourism Activity: A project proposal with the objective of conducting travel predominantly for recreational, sport or leisure purposes within a designated area and limited time period.

Winter Road: A project proposal with the objective of building a road for winter use by leveling and compacting surface snow and ice. Winter road is removed at end of season.

Winter Trail: A project proposal with the objective of building a trail for winter use by a single pass of a tracked vehicle using a blade, if necessary.

SCREENING PART 2 FORM
PROJECT SPECIFIC INFORMATION REQUIREMENTS (PSIR)

1. SUBMISSIONS

The Proponent must submit all information pertaining to the Project as a whole. The information requirements below are designed for the purpose of environmental assessment and are not limited to the scope of a single permit or license application.

IMPORTANT: Please be advised of the following:

1. NIRB does not accept references to an ftp or web sites as a submission.

2. The Proponent must provide NIRB with 1 (one) electronic copy and 1 (one) hardcopy of the required information in English.

3. All maps should be shapefiles, be legible, and should include grids, be of appropriate scale, indicate the scale, include latitude and longitude references, NTS Maps numbers, title, legend and a north arrow. To the extent possible, avoid hand-drawn demarcations and faxed maps; and,

4. Please complete all required information in each section below. If the required information is not applicable to the project proposal, please indicate this in the response with "n/a". If the request has been provided in a different section or report, please note the section or report where the response can be found.

2. GENERAL PROJECT INFORMATION REQUIREMENTS

Project Coordinates and Maps

1. The preferred method for submitting project coordinates information is through the use of a Geographic Information System (GIS) compatible digital file. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS and CAD related formats, including MapInfo and AutoCAD, provided proper format and projection metadata is also submitted. The NIRB requires coordinates for the project proposal which reflect the entire project area as defined by:

   - Area/sites of investigation;
   - Boundaries of the foreseen land use permit/right-of-way area(s) to be applied for;
   - Location of any proposed infrastructure or activity(s); and,

- Boundaries of the mineral claim block(s) where proposed activities will be undertaken.

2. Map of the project site within a regional context indicating the distance to the closest communities.
3. Map of any camp site including locations of camp facilities.
4. Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.

See attached maps including:

- **Figure 1 – Site Location Plan**
- **Figure 2 – Areas of Interest**
- **Figure 3 – Existing Lupin Infrastructure Plan**

The Lupin Project is situated at 65°45'29" north latitude, 111°13'10" west longitude, 360 kilometres NNE of Yellowknife in the Kitikmeot region of Nunavut.

The Lupin Project was an operating underground mine from 1982 until final closure in 2005. Since then it has been under care and maintenance and its Class A water license has been kept in good standing during this period.

In July 2011 the Lupin Project was purchased by Elgin Mining Inc. from the then owner MMG Resources Ltd.

The Lupin Project has significant infrastructure including an airstrip, water supply and distribution systems, camp and kitchen, sewage collection and disposal systems and various warehouse and maintenance shops. Furthermore, there is a significant road infrastructure. This is a first stage drilling program and will be limited to 5,000 metres of diamond drilling. Elgin Mining plan to drill 3-5 holes in each target to a maximum depth of 500 metres. If results warrant then further drilling will be planned on these targets. The expanded program would be 25,000 metres and take place from April 2012 to September 2012. Depending on the results at the 2012 program a third phase of 25,000 to 50,000 may be warranted with the objective to define reserves.

The drill program will not require any new camps, kitchen, water supply or infrastructure such as sewage and grey water, diesel fuel storage and power generation systems. All systems are existing and operable.

The drill program will have very little disturbance as many of the targets are accessible from existing road infrastructure. When drilling during the winter and provided there is sufficient snow cover, the rigs will be moved on skids. During the remainder of the year the rigs will be moved between drill sites by helicopter.

If necessary short spur roads will be developed off of existing mine roads to access drill sites. If needed, these roads will be constructed from material obtained from existing sources (i.e. existing quarry), will be constructed a minimum of thirty (30) meters from the high water mark of any waterbody and will not involve any water crossings.

The Company has a complete environmental policy and the drill program has been designed to have minimum impact on the environment.

Project General Information

5. Discuss the need and purpose of the proposed project.

   The project is based on exploring certain regional targets to determine whether economic deposits of sufficient size exist that would support reopening of the Lupin Project as a producing entity. If exploration is successful then Elgin Mining would complete studies, arrange financing, and re-start operations in a way that maximizes the socio-economic benefits to the Kitikmeot region.

6. Discuss alternatives to the project and alternative methods of carrying out the project, including the no-go alternative. Provide justification for the chosen option(s).

   There are no real alternatives to the project, either the exploration is successful and development proceeds or:

   - **Delay the project until more favourable conditions exist**
   - **Abandon the project and complete the mine closure according to all applicable agreements and regulations**

7. Provide a schedule for all project activities.

   Continued data review during Q3 2011, drilling to commence in November 2011 and continue for at least three years.

8. List the acts, regulations and guidelines that apply to project activities.

ACT	REGULATION
FEDERAL	
Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, 1993	-
Nunavut Waters and Nunavut Surface Rights Tribunal Act, S.C. 2002, c-10	Northwest Territories Waters Regulations, SOR/93-303
Canadian Environmental Protection Act, 1999, S.C. 1999, c. 33.	Interprovincial Movement of Hazardous Waste Regulations, SOR/2002-301
	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations, SOR/2005-149
	Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, SOR/2008-197
	Environmental Emergency Regulations SOR/2003-307 (quantity dependent)
	Proposed - Regulations Amending the Environmental Emergency Regulations
Fisheries Act, R.S., 1985, c. F-14	-
Nunavut Act, 1993, c. 28	Nunavut Archaeological and Palaeontological Sites Regulations, SOR/2001-220
Species At Risk Act, 2002, c.29	-
Territorial Lands Act, R.S.C. 1985, c. T-7	Territorial Land Use Regulations, C.R.C., 1524
	Territorial Lands Regulations, C.R.C., 1525

ACT	REGULATION
Transportation of Dangerous Goods Act, 1992 c.34	Transportation of Dangerous Goods Regulations, SOR/2001-286
TERRITORIAL	
Nunavut Environmental Protection Act, R.S.N.W.T. (Nu.) 1988, c. E-7	Spill Contingency Planning and Reporting Regulations, N.W.T. Reg. (Nu.) 068-93
Nunavut Public Health Act, R.S.N.W.T. (Nu.) 1988, c. P-12	Camp Sanitation Regulations, R.R.N.W.T. (Nu) 1990 c. P-12
	General Sanitation Regulations, R.R.N.W.T. (Nu.) 1990, c. P-16
Transportation of Dangerous Goods Act, 1990, R.S.N.W.T. (Nu.) 1988, c.81 (Supp.)	Transportation of Dangerous Goods Regulations, 1991, N.W.T. Reg. (Nu.) 095-91
Fire Protection Act, R.S.N.W.T. (Nu.) 1988, c.F-6	Fire Protection Regulations, RRNWT (Nu) 1990 c F-12
	Propane Cylinder Storage Regulations, N.W.T. Reg. (Nu) 094-91
Workers' Compensation Act, R.S.N.W.T, (Nu.) 1988, c. W-6	-
Safety Act, R.S.N.W.T. (Nu.) 1988, c. S-1	Work Site Hazardous Information System Regulations, RRNWT (Nu) 1990 c S-2
	General Safety Regulations, RRNWT (Nu) 1990 c S-1
	General Safety Regulations, Amendment, Nu Reg 021-2000

GUIDELINES
Government of Nunavut, Department of Environment, Environmental Guideline for Waste Antifreeze, January 2011
Government of Nunavut, Department of Environment, Environmental Guideline for Waste Asbestos, January 2011
Government of Nunavut, Department of Environment, Environmental Guideline for Waste Batteries, January 2011
Government of Nunavut, Department of Environment, Environmental Guideline for Waste Paint, November 2010
Government of Nunavut, Department of Environment, Environmental Guideline for Waste Solvents, January 2011
Government of Nunavut, Department of Environment, Environmental Guideline for Ozone Depleting Substances, January 2002
Government of Northwest Territories, Department of Environment, Guideline for the Management of Waste Lead and Lead Paint, November 2001
Government of Nunavut Department of Environment, Environmental Guideline for the General Management of Hazardous Waste, 2010
Government of Nunavut, Department of Environment, Environmental Guideline for the Burning and Incineration of Solid Waste, 2010
Canadian Council of Ministers of the Environment, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. ISBN 1-896997-33-3., 2003
Department of Fisheries and Oceans Canada, Freshwater Intake End-of-Pipe Fish Screen Guideline
Government of Nunavut, Department of Environment, Contingency Planning and Spill Reporting in Nunavut - A Guide to the New Regulations

9. List the approvals, permits and licenses required to conduct the project.

   INAC Land Use Permit – in process
   Class A Water License – 2AM-LUP0914 – expires March 2014
   Class B Water License – in process

DFO Operational Statement (OS) Conformity

10. Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal:
    - Bridge Maintenance
    - Clear Span Bridge
    - Culvert Maintenance
    - Ice Bridge
    - Routine Maintenance Dredging
    - Installation of Moorings

    Please see DFO's OS for specific definitions of these activities available from DFO's web-site at http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm

    N/A

11. If any of the DFO's OS apply to the project proposal, does the Proponent agree to meet the conditions and incorporate the measures to protect fish and fish habitat as outlined in the applicable OS? If yes, provide a signed statement of confirmation.

Transportation

12. Describe how the project site will be accessed and how supplies will be brought to site. Provide a map showing access route(s).

    The site will be accessed via plane or helicopter as there is an airstrip at site.
    Supplies will be brought to site via plane or helicopter.

13. If a previous airstrip is being used, provide a description of the type of airstrip (ice-strip/all-weather), including its location. Describe dust management procedures (if applicable) and provide a map showing location of airstrip.

    The airstrip is an all weather strip – see map for location.
    Dust Management will be by water from the existing water truck.

14. If an airstrip is being constructed, provide the following information:
    a. Discuss design considerations for permafrost
    b. Discuss construction techniques
    c. Describe the construction materials, type and sources, and the acid rock drainage (ARD) and metal leaching (ML) characteristics (if rock material is required for airstrip bed).
    d. Describe dust management procedures.
    e. Provide a map showing location of proposed airstrip.

    N/A

15. Describe expected flight altitudes, frequency of flights and anticipated flight routes.

    Flights from Yellowknife to site – approx once a week while drilling

Camp Site

16. Describe all existing and proposed camp structures and infrastructure

    The Lupin Project has significant infrastructure including an airstrip, water supply and distribution systems, camp and kitchen, sewage collection and disposal systems, landfill, burn pit, incinerator and various warehouse and maintenance shops.

17. Describe the type of camp:
    a. Mobile
    b. Temporary
    c. Seasonal
    d. Permanent – Lupin mine camp will be used for 30 people between April and September each year– see 16 above
    e. Other

18. Describe the maximum number of personnel expected on site, including the timing for those personnel involved with the project.

    Maximum expected is 40 persons between the months of April and September

Equipment

19. Provide a list of equipment required for the project and discuss the uses for the equipment.

Equipment type and number			Size – dimensions	Proposed use
3	FORD	F350	CREW CAB 4X4	General transport
1	FORD	F250	EXT CAB 4X4	General transport
1	GMC	K2500	SUBURBAN	General transport
1	GMC	K1500	SUBURBAN	General transport
1	FORD	L9000	TANDEM DECK	General transport
1	FORD	F350	REG CAB DRW 4X4	General transport
1	FORD	F700	SERVICE TRUCK	General Maintenance
1	GMC	GENERAL	JET FUEL TRUCK	Fuel Transport
1	VOLVO	5350B	ROCK TRUCK 6X6	General Transport
1	KOMATSU	HM 300	ROCK TRUCK 6X6	General Transport
1	KOMATSU	WA250 PT	LOADER	Equipment Carrier
1	KOMATSU	WA250	LOADER	Equipment Carrier
1	CATERPILLAR	966 G	LOADER	Equipment Carrier
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1	KOMATSU	PC 200-7	EXCAVATOR	General Maintenance
1	CASE	580 C	BACK HOE	General Maintenance
1	KOMATSU	D61 EX 15	DOZER W/RIPPER	General Maintenance
1	JOHN DEERE	350	DOZER	General Maintenance
1	CATERPILLAR	14 H	GRADER	Road Maintenance
1	GROVE	RT 522	20 TON R/T CRANE	General Maintenance
1	JLG		MAN LIFT	General Maintenance
2	KOHLER	250KW	GEN SET	Power Generation
1	KUBOTA		GEN SET	Power Generation
1	ISUZU		GEN SET	Power Generation
2	JOHN DEERE		GEN SET	Power Generation
3	CATERPILLAR		GEN SET	Power Generation

20. If possible, provide digital photos of equipment.

N/A

Water

21. Describe the location of water source(s), the water intake methods, and all methods employed to prevent fish entrapment. Provide a map showing the water intake locations.

Contwoyto Lake is the water source. There is an existing pump and pipeline at site from the time of mine operations which is still permitted. Method employed to prevent fish entrapment are the use of screens over intake. See attached map

22. Describe the estimated rate of water consumption (m^3/day).

Estimated water consumption will be 50 m^3/day (5 m^3/day for camp use and 45 m^3/day for drilling)

23. Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring.

    See attached waste management plan

24. If applicable, discuss how surface water and underground water will be managed and monitored.

    See attached waste management plan

Waste Water (Grey water, Sewage, Other)

25. Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant):
    - Sewage **– minimal disposal in existing permitted sewage ponds**
    - Camp grey water - **minimal disposal in existing permitted sewage ponds**
    - Combustible solid waste **– minimal use existing camp incinerator and camp burn pit**
    - Non-combustible solid waste, including bulky items/scrap metal **– disposal at existing site landfill**
    - Hazardous waste or oil **– collected, sealed in drums, transported to Yellowknife for eventual disposal by the appropriate means.**
    - Contaminated soils/snow **– in the event of a spill, contaminated soils/snow will be placed within an existing contained area such as the fuel tank farm**
    - Empty barrels/ fuel drums **– storage at site and transported to Yellowknife**
    - Any other waste produced **– depending on type of waste it will be either packaged and removed from site for offsite treatment or disposal or stored at site.**

    Also, see Spill Contingency Plan

26. If the project proposal includes a landfill or landfarm, indicate the locations on a map, provide the conceptual design parameters, and discuss waste management and contact-water management procedures.

Fuel

27. Describe the types of fuel, quantities (number of containers, type of containers and capacity of containers), method of storage and containment. Indicate the location on a map where fuel is to be stored, and method of transportation of fuel to project site.

    Fuel Transfer Methods

    Plans are to fly fuel, if needed, (jet fuel with minor gasoline only as there is sufficient diesel stored on site for other use) to the camp in 205 L drums and land on the existing airstrip. Fuel drums would be rolled out of the airplane using a ramp. A helicopter would be used to lift the drums off the airstrip and place them in the main fuel cache which is already in place at site.

    Each diesel fuel consumption location (drill stations only) would be supplied from the fuel cache using a helicopter to move the fuel drums if necessary, however since most drill site locations will be within driving distance on existing

roads fuel will normally be transported in drums securely fastened on pick-up vehicles. In the case of helicopter transport of fuel the final adjustments to upright the fuel drum would be by hand. Diesel would be transferred from the upright fuel drum to a supply tank drum using a hand powered pump with an attached flexible hose. The generator sets for the kitchen and camp have a fully permitted diesel storage and transfer system in place .

Jet fuel would be transferred from the drum to the helicopter using a small 24 v electric motor powered from the helicopter.

Small gasoline water pump engines would be fueled from small (15 to 20 L) plastic fuel jugs fitted with a flexible plastic nozzle. The plastic fuel jugs would be fueled from a 205 L gallon drum of gasoline using a hand powered wobble pump or crank pump.

Propane would be transferred using standard propane fittings, regulators and hoses.

There will be Emergency spill kits on site at all times and at all fuel cache areas.

As stated there is an existing large permitted diesel storage system on site that will be utilized throughout the exploration program. All other combustible fuels stored on site will be contained in 205 L steel drums. Predominantly Jet-B helicopter fuel and a small amount of Gasoline will be included as well. All drums will be kept a minimum distance of 30m from the lake shore at all times.

Also, see Spill Contingency Plan

28. Describe any secondary containment measures to be employed, including the type of material or system used. If no secondary containment is to be employed, please provide justification.

    See Spill Contingency Plan

29. Describe the method of fuel transfer and the method of refuelling.

    See Spill Contingency Plan

30. Describe spill control measures in place.

    See Spill Contingency Plan

Please refer to Environment Canada's fuel storage tank system regulations (*Storage Tank System for Petroleum and Allied Petroleum Products*) website at http://www.ec.gc.ca/st-rs/ for details on fuel storage requirements.

Chemicals and Hazardous Materials*

**included but not limited to oils, greases, drill mud, antifreeze, calcium or sodium chloride salt, lead acid batteries and cleaners*

31. Describe the types, quantities (number of containers, the type of container and capacity of containers), method of storage and containment. Indicate the location on a map where material is to be stored, and method of transportation of materials to project site.

PRODUCT	QUANTITY	STORAGE UNITS	# OF UNITS SOH (WRRS)	STORAGE LOCATION
P40 FUEL	463,563 Imp Gal	350,000 Imp Gal 360,000 Imp Gal 18,000 Imp Gal	9 2 6	Main Tank Farm Main Tank Farm Satellite Tank Farm
P50 FUEL	47,618 Imp Gal	187,000 Imp Gal 18,000 Imp Gal	3 4	Main Tank Farm Satellite Tank Farm
GASOLINE	546 Imp Gal	5,000 Imp Gal	2	Satellite Tank Farm
JET A/B	126,936 Imp Gal	360,000 Imp Gal	1	Main Tank Farm
RALUBE 40	40,000 L	Super-B tanker	1	Main Tank Farm
W30 LUBE OIL	38,400 L	1,600 L, Cubes	24 cubes	Main Tank Farm

Waste oil - will be collected and sealed in 45 Gal drums clearly marked for this purpose and then transported to Yellowknife for eventual disposal by the appropriate means. Lead-Acid batteries will also be contained in appropriate sealed containers, clearly marked, and returned to Yellowknife for disposal.

All lubricants and drill additives will be contained in 20 L pails. At any one time there will be approximately 1000 L of various lubricants and drill additives onsite.

Propane is to be transported and stored in 100lb cylinders that will be located away from camp in a specifically designated storage area where they are to be stored vertically and chained to prevent tipping. On average there will be approximately 5 cylinders onsite at any one time. All units in the kitchen and dry are electrical powered from existing diesel gensets, including hot water tanks, stoves and laundry facilities.

In addition small amounts of soaps and cleaning fluids are located in the kitchen and dry areas.

Calcium chloride (approximately 300 – 400 tonnes) will be transported in sealed bags. These bags will be stored within a covered storage area at site on wooden pallets.

32. Describe any secondary containment measures to be employed, including the type of material or system used.

All major fuel systems are currently within secondary lined permitted bermed storage systems.

33. Describe the method of chemical transfer.

See above and Spill Contingency Plan

34. Describe spill control measures in place.

See Spill Contingency Plan

Workforce and Human Resources/Socio-Economic Impacts

35. Discuss opportunities for training and employment of local Inuit beneficiaries.

    Elgin Mining plans to hire as much from local communities as possible. This is a typical drill exploration program so there will be opportunities from camp operations and maintenance, to geological mapping and sampling to administrative and general labour.

36. Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site.

    Work force will be flown to and from site on a 14 day in - 14 day out schedule. Work days will normally be 12 hour shifts.

37. Discuss, where relevant, any specific hiring policies for Inuit beneficiaries.

    No specific policies.

Public Involvement/ Traditional Knowledge

38. Indicate which communities, groups, or organizations would be affected by this project proposal.

    In general there will be no real impact on any community or group as the project is remote.

39. Describe any consultation with interested Parties which has occurred regarding the development of the project proposal.

    Senior members of Elgin Mining Management met with KIA staff in Kugluktuk in August as a general introduction to the Company and its plans.

40. Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns.

    N/A

41. Describe how traditional knowledge was obtained, and how it has been integrated into the project.

    There is significant history of operations at Lupin and this formed the general basis for this program.

42. Discuss future consultation plans.

    Consultation will be regular and ongoing.

3. PROJECT SPECIFIC INFORMATION

The following table identifies the project types identified in Section 3 of the NIRB, Part 1 Form. Please complete all relevant sections.

It is the proponent's responsibility to review all sections in addition to the required sections to ensure a complete application form.

Table 1: Project Type and Information Required

Project Type	Type of Project Proposal	Information Request
1	All-Weather Road/Access Trail	Section A-1 and Section A-2
2	Winter Road/Winter Trail	Section A-1 and Section A-3
3	**Mineral Exploration**	**Section B-1 through Section B-4**
4	Advanced Mineral Exploration	Section B-1 through Section B-8
5	Mine Development/Bulk Sampling	Section B-1 through Section B-12
6	Pits and Quarries	Section C
7	Offshore Infrastructure(port, break water, dock)	Section D
8	Seismic Survey	Section E
9	Site Cleanup/Remediation	Section F
10	Oil and Natural Gas Exploration/Activities	Section B-3 and Section G
11	Marine Based Activities	Section H
12	Municipal and Industrial Development	Section I

SECTION B: Mineral Exploration /Advanced Exploration /Development

B-1. Project Information

1. Describe the type of mineral resource under exploration.

   Gold

B-2. Exploration Activity

2. Indicate the type of exploration activity:
   - **Preliminary Delineation drilling**
   - **Exploration drilling**
   - **Geophysical work (ground and air)**

3. Describe the exploration activities associated with this project:
   - **Soil sampling**
   - **On land drilling – diamond drilling**
   - **Off site sample processing**

B-3. Geosciences

4. Indicate the geophysical operation type:
   a. **Magnetic**
   b. **Gravimetric**
   c. **Electromagnetic**

5. Indicate the geological operation type:
    a. **Geological Mapping**

6. Indicate on a map the boundary subject to air and/or ground geophysical work.

    See map.

7. Provide flight altitudes and locations where flight altitudes will be below 610m.

    Not yet determined as no contractor has been selected but will generally be in the regions of 50-100m.

B-4. Drilling

8. Provide the number of drill holes and depths (provide estimates and maximums where possible).

    Elgin Mining plans to drill 3-5 holes in each target to a maximum depth of 500 metres from November 2011 to April 2012. If results warrant then further drilling will be planned on these targets. The expanded program would be 25,000 metres and take place from April 2012 to September 2012. Depending on the results at the 2012 program a third phase of 25,000 to 50,000 may be warranted with the objective to define reserves.

9. Discuss any drill additives to be used.

    Standard polymers and muds. See Spill Contingency Plan

10. Describe method for dealing with drill cuttings.

    Drill cuttings will be disposed of either in the existing Tailings Containment Area or in sumps located at least thirty (30) meters from the ordinary high water mark of any water body.

11. Describe method for dealing with drill water.

    Drill water will go into a containment system to settle out solids before discharge to a natural depression or sump.

12. Describe how drill equipment will be mobilized.

    The drill program will have very little disturbance as many of the targets are accessible from existing road infrastructure. When drilling during the winter the rigs will be moved on skids, when sufficient snow cover is available. During the remainder of the year the rigs will be moved between drill sites by helicopter.

    If necessary short spur roads will be developed off existing mine roads to access drill sites. If needed, these roads will be constructed from material obtained from existing sources (i.e. existing quarry), will be constructed a

minimum of thirty (30) meters from any waterbody and will not involve any water crossings.

13. Describe how drill holes will be abandoned.

    At the end of each season, drill holes will be cemented sealed and capped and the area of disturbance will undergo rehabilitation to its previous standard of human utilization and natural productivity including replacement of overburden and soil, grading of the area back to is natural contours; and re-establishment, to the extent possible, of flora. Overall, the disturbance of the ground is anticipated to be very minimal and will require limited rehabilitation.

14. If project proposal involves uranium exploration drilling, discuss the potential for radiation exposure and radiation protection measures. Please refer to the *Canadian Guidelines for Naturally Occurring Radioactive Materials* for more information.

    N/A

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

Describe the existing environment, including physical, biological and socioeconomic aspects. Where appropriate, identify local study areas (LSA) and regional study areas (RSA).

Please note that the detail provided in the description of the existing environment should be appropriate for the type of project proposal and its scope.

The following is intended as a guide only.

Physical Environment

Please note that a description of the physical environment is intended to cover all components of a project, including roads/trails, marine routes, etc. that are in existence at present time.

- Proximity to protected areas, including:
  i. designated environmental areas, including parks;
  ii. heritage sites;
  iii. sensitive areas, including all sensitive marine habitat areas;
  iv. recreational areas;
  v. sport and commercial fishing areas;
  vi. breeding, spawning and nursery areas;
  vii. known migration routes of terrestrial and marine species;
  viii. marine resources;
  ix. areas of natural beauty, cultural or historical history;
  x. protected wildlife areas; and
  xi. other protected areas.
- Eskers and other unique landscapes (e.g. sand hills, marshes, wetlands, floodplains).
- Evidence of ground, slope or rock instability, seismicity.

- Evidence of thermokarsts.
- Evidence of ice lenses.
- Surface and bedrock geology.
- Topography.
- Permafrost (e.g. stability, depth, thickness, continuity, taliks).
- Sediment and soil quality.
- Hydrology/ limnology (e.g. watershed boundaries, lakes, streams, sediment geochemistry, surface water flow, groundwater flow, flood zones).
- Tidal processes and bathymetry in the project area (if applicable).
- Water quality and quantity.
- Air quality.
- Climate conditions and predicted future climate trends.
- Noise levels.
- Other physical Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

Biological Environment

- Vegetation (terrestrial as well as freshwater and marine where applicable).
- Wildlife, including habitat and migration patterns.
- Birds, including habitat and migration patterns.
- Species of concern as identified by federal or territorial agencies, including any wildlife species listed under the *Species at Risk Act (SARA)*, its critical habitat or the residences of individuals of the species.
- Aquatic (freshwater and marine) species, including habitat and migration/spawning patterns.
- Other biological Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

Socioeconomic Environment

- Proximity to communities.
- Archaeological and culturally significant sites (e.g. pingos, soap stone quarries) in the project (Local Study Area) and adjacent area (Regional Study Area).
- Palaeontological component of surface and bedrock geology.
- Land and resource use in the area, including subsistence harvesting, tourism, trapping and guiding operations.
- Local and regional traffic patterns.
- Human Health, broadly defined as a complete state of wellbeing (including physical, social, psychological, and spiritual aspects).
- Other Valued Socioeconomic Components (VSEC) as determined through community consultation and/or literature review.

The following descriptions of the existing environment have been extracted from the document entitled "MMG Canada, *Lupin Mine, Interim Abandonment and Restoration Plan*, March 2010"

CLIMATE

Climate in this region is classed as semi-arid subarctic, with an average annual precipitation of just over 300 mm and a mean daily temperature of -11.0OC. Average temperature for the months of May through September is 4.6 OC (Canadian Climate Normals 1961-2000). Precipitation is

heaviest in the months June through September. Snowfall can occur during any month, although heaviest snowfalls generally occur in October. The average annual snowfall is 138.1 cm. The prevailing winds in the Lupin area are from the northwest.

Snowmelt is generally complete by the end of June. Break-up on Contwoyto Lake begins in mid-July, although in some years the lake is not ice-free until early August. Small lakes in the region are ice free by early July. Ice starts to reform on small lakes of the surrounded area in late August or early September. Complete freeze-over of Contwoyto Lake occurs in October.

The winter climate at this latitude is severe in intensity and duration and is followed by a short, warm summer. In winter, between 1 and 3 m of ice develop on the surface of the lakes and it is the rate of melting of this ice that greatly influences summer conditions. The interaction between climate and morphology of the individual lakes gives rise to great differences in the thermal regime of the lakes.

TOPOGRAPHY

The site is in the tundra zone of the Canadian Shield, an area of continuous permafrost. Terrain in the vicinity of the site is generally low and undulating, ranging between 470 and 505 m elevation. Numerous shallow lakes and streams occur in depressions throughout the area.

VEGETATION

The Lupin mine is located in the barren land tundra of Nunavut. It is typified as having a generous amount of low lying vegetation extremely tolerant and well adapted to the climatic conditions. Some of the more prevalent types of habitat that can be found throughout the area include upland and lowland tundra, wet meadows and gentle slopes.

Plentiful and diverse amounts of vegetation can be found everywhere consisting of grasses and sedges; ground cover such as mosses, labrador tea, cranberry, bilberry, bearberry, arctic white heather. In wet areas, predominant species include cotton grass, bog rush, and other aquatic grasses. Dwarf birch and willows populate trenches, and colourful flowering plant species include fireweed, lapland rosebay, azalea and saxifrage to list a few.

HYDROLOGY

Contwoyto Lake is the major water body in the region, with a surface area of approximately 95,900 ha and a drainage area of 8,000 km 2. Contwoyto Lake has two outlets in the Burnside River, which flows from the northwest end of the lake towards Bathurst Inlet, and Back River at the southeast end of the lake, which flows into Pellatt Lake. The main body of Contwoyto Lake lies to the east and south of the mine site. To the north of the mine, a portion of the lake extends to the west and south, terminating in a narrow bay (Sun Bay) which lies directly west of the mine site.

Aquatic habitat in the receiving environment immediately downstream of the tailings area is comprised of three shallow lakes (colloquially referred to as Dam 2 Lake, Dam 1a Lake, and Unnamed Lake), two streams (Seep Creek and Concession Creek), two shallow ponds, and two embayment areas of Contwoyto Lake (Inner and Outer Sun Bay). With the exception of Dam 2 Lake, all of the small lakes and ponds freeze to the bottom in winter. Much of Inner Sun Bay also freezes to the bottom. Due to low winter flows, both Seep Creek and Concession Creek freeze to the bottom in winter. As a consequence, over wintering habitat for fish is limited primarily to Outer Sun Bay and the main body of Contwoyto Lake (RCPL/RL&L 1985).

Concession Creek drains Concession Lake via Unnamed Lake to Inner Sun Bay. Seep Creek enters the Sun Bay drainage system along the east side of Unnamed Lake. Lower Concession Creek (i.e., that section between Unnamed Lake and Inner Sun Bay) varies in width between 25 and 75 m, depending on seasonal discharges. Side channels are active during spring freshet. Stream depth generally is less than 1 m, except during spring freshet when depths approach 1.5 m. The substrate is primarily large boulder with large and small cobble occupying the interstices.

Seep Creek is approximately 6.5 km in length, flowing from its source in Dam 2 Lake and Dam 1a Lake (via separate branches which join about 2 km downstream) to Unnamed Lake. The stream channel in upper Seep Creek generally is poorly defined, often flowing through marshy areas, or between large boulders or through bedrock fractures. This section of the creek generally is less than 0.5 m in depth and less than 2 m wide. The dominant substrate type is boulders, although localized areas of cobble and gravel are present. Lower Seep Creek (i.e., the 400 m section upstream of Unnamed Lake) is characterized by a well developed channel varying in width from 1 to 4 m, although during freshet, maximum wetted width was about 20 m. The dominant substrate type is boulder, with localized areas of cobble and gravel (RCPL/RL&L 1985).

Inner Sun Bay (approximate area of 150 ha) is primarily shallow (mean depth of 1.7 m), with a maximum depth of about 6.5 m. Over 91% of the surface area is shallower than 3 m, and much of the bay freezes to the bottom in winter. Outer Sun Bay is deeper (greater than 10 m).

REFERENCES

Reid, Crowther & Partners: RL&L Environmental; *Report on Aquatic Studies Program for Echo Bay Mines Ltd*; Feb 1985

5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES

1. Please complete the attached Table 1 – Identification of Environmental Impacts, taking into consideration the components/activities and project phase(s) identified in Section 4 of this document. Identify impacts in Table 1 as either positive (P), negative and mitigable (M), negative and non- mitigable (N), or unknown (U).
2. Discuss the impacts identified in the above table.
3. Discuss potential socioeconomic impacts, including human health.
4. Discuss potential for transboundary effects related to the project.
5. Identify any potentially adverse effects of the project proposal on species listed under the *Species at Risk Act (SARA)* and their critical habitats or residences, what measures will be taken to avoid or lessen those effects and how the effects will be monitored.
6. Discuss proposed measures to mitigate all identified negative impacts.

Resource	Potential Impact	Mitigation
PHYSICAL		
Ground stability	Overland transport and drilling operations may cause erosion.	Transport drills overland during winter conditions and if necessary build spur roads. Abandon and restore drill sites to natural conditions at the end of each field season.
Permafrost	Any spills at drill sites could contaminate permafrost. Overland transport may degrade permafrost. Permafrost degradation may affect road stability.	Proper fuel and chemical storage and transport measures will be implemented. See Spill Contingency Plan. Overland transport will only occur during winter conditions. Maintain road integrity.
Hydrology and water quality	Water use volumes for drilling operations are minimal and will not drawdown any waterbodies. Discharge of drill waste could affect surface hydrology. Spills of any contaminants such as fuels, chemicals or wastes could affect water quality if not responded to appropriately. Spur road construction may cause sedimentation which may affect water quality.	Natural topographic depressions will be used as much as possible to contain drill wastes. Otherwise sumps will be constructed to contain drill wastes. Drill water will be discharged to a portable containment system to allow sediments to settle out before discharge of drill water. Depressions and sumps shall be located at least thirty meters from the high water mark of any waterbody. Proper fuel and chemical storage and

		transport measures will be implemented. See Spill Contingency Plan. Spur roads shall be located at least thirty meters from the high water mark of any waterbody.
Climate conditions	The factors that affect climate change are very complex and difficult to accurately assess for the scale of this project.	
Sediment and soil quality	Spills of any contaminants such as fuels, chemicals or wastes could affect soil quality if not responded to properly. Sedimentation may be caused by overland transport, drill operations and spur road construction.	Proper fuel and chemical storage and transport measures will be implemented. See Spill Contingency Plan. Overland transport will be restricted to winter conditions. Water quality mitigation measures also address sedimentation.
Air quality	Vehicle emissions and dust may affect air quality.	Dust will be managed by using water.
Noise	Transportation, drilling, and construction will raise noise levels temporarily.	
BIOLOGICAL		
Vegetation	Vegetation will be disturbed at drill sites and along spur roads Geophysical surveys will cause minor and temporary compaction of vegetation.	Any soil and vegetation removed to clear a drill site will be stored and the disturbed area recovered at the completion of the drill hole. Sites will be left in a stable state to allow for re-establishment of vegetation.
Wildlife and birds	Air and overland transport, drilling, and road construction may disturb wildlife due to the generation of noise, habitat encroachment, or human interaction.	Low elevation aircraft activity will be restricted to flights into and out of the camp. Disturbance of bird nests or wildlife dens will be avoided. Any critical or sensitive wildlife species encountered will be avoided. Hazardous materials will be properly stored to avoid wildlife exposure. Personnel will trained in wildlife-human interactions/encounters

Aquatic	Fish may become entrained in water intakes.	The water intakes will be screened as per DFO requirements.
SOCIO-ECONOMIC		
Archaeology	There are no known archaeology sites in the project vicinity; however disturbance, removal and/or destruction of archaeological specimens are possible.	Archaeological specimens shall not knowingly be removed, disturbed or displaced. Project activities that encounter or disturb an archaeological site or specimen shall be stopped and the area marked off to prevent disturbance. All personnel will be made aware of this mitigation procedure and any permit conditions.
Employment	Personnel will be actively employed from local communities. Continued employment opportunities for field personnel from local communities	Local employment provides jobs, employment benefits and incomes to individuals and families.
Human Health	All activities may affect human health and safety.	Regular and frequent safety meetings will be held with all personnel to address the many variable safety issues.

6. CUMULATIVE EFFECTS

A cumulative impact (or effect) can be defined as the impact on the environment that results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can also result from individually minor but collectively significant actions taking place over a period of time.

Discuss how the effects of this project interact with the effects of relevant past, present and reasonably foreseeable projects in a regional context.

The cumulative effects of this project are reduced due to the ability of the exploration program to use existing facilities approved as part of the Lupin Mine site including the camp, airstrip, roads, sewage and greywater disposal facilities, solid waste disposal facilities, tailings containment area for drill wastes, fuel storage and containment facilities and quarry.

7. SUPPORTING DOCUMENTS

Where relevant, provide the following supporting documents:

- Abandonment and Decommissioning Plan

- Existing site photos with descriptions
- Emergency Response Plan
- Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)
- Waste Management Plan/Program
- Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)
- If project activities are located within Caribou Protection Areas or Schedule 1 Species at Risk known locations, please provide a Wildlife Mitigation and Monitoring Plan

In addition, for Project Type 9 (Site Cleanup/Remediation), please provide the following additional supporting documents:

- Remediation Plan including cleanup criteria and how the criteria were derived.
- Human Health Risk Assessment of the contaminants at the site.

See attached Lupin Mine Site Waste Management Plan, Spill Contingency Plan, and Abandonment and Restoration Plan.

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

PROJECT ACTIVITIES		ENVIRONMENTAL COMPONENTS	PHYSICAL	ground stability	permafrost	hydrology/ limnology	water quality	climate conditions	sediment and soil quality	air quality	noise levels	BIOLOGICAL	vegetation	wildlife, including habitat and migration patterns	birds, including habitat and migration patterns	aquatic species, incl. habitat and migration/spawning	SOCIO-ECONOMIC	archaeological and cultural historic sites	employment	human health
OPERATION	Air transport							U		N	N			M	M				P	M
	Camp operations			Screened by NIRB under file No.99WR053. Approved water use and waste disposal under type A Water Licence 2AM-LUP0914.																
	Overland transport			M				U	M	N	N			M	M				P	M
	Drilling operations			M	M	M	M	U	M	N	N		M	M	M	M		U	P	M
	Prospecting and Mapping																		P	M
	Geophysical Survey												M					U	P	M
	Spur Road Construction				M	M	M	U	M	M	N		M	M	M			U	P	M

Note: Please indicate in the matrix cell whether the interaction causes an impact and whether the impact is
P = Positive
N = Negative and non-mitigatable
M = Negative and mitigatable
U = Unknown
If no impact is expected please leave the cell blank

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