



NIRB File No. 99WR053_Renewal
NWB Licence No.: NWB2AM-LUP0008

May 6, 2008

Honourable Chuck Strahl
Minister of Indian and Northern Affairs Canada
10 Wellington, 21st Floor
Gatineau, Quebec
K1A 0H4

Via email: Strahl.c@parl.gc.ca

**Re: Application Terms and Conditions for Lupin Mine Project (Care and Maintenance)
– Zinifex Canada Inc's**

Dear Honourable Chuck Strahl:

The Nunavut Impact Review Board (NIRB) has completed a review of Zinifex Canada Inc's request to the Nunavut Water Board (NWB) for a renewal of their water licence for their "Lupin Mine Project (Care and Maintenance)".

Please be advised that the NIRB received the following comments from Environment Canada, Fisheries and Oceans Canada, and Government of Nunavut – Department of Environment regarding the proposed renewal:

- Exposure of dry tailings to the surrounding environment, and potential for tailings to be spread by the wind and affecting water quality, vegetation and wildlife feeding on vegetation.
- Access of wildlife to the Tailings Containment Area and wildlife drinking out of the Tailings Containment Area.
- Continuance of the maintenance, monitoring and reporting of ongoing activities in support of closure and reclamation.
- Concerns with the 2008 Abandonment and Restoration Plan.

All commenting Parties indicated that their concerns and/or comments raised above can be addressed through the NWB water licensing phase.

After review of the project proposal, NIRB has determined that the renewal does not significantly change the general scope of the original project activities. Therefore, the NIRB is re-issuing the recommended Terms and Conditions contained in the November 16, 1999 Screening Decision (attached).

If you have any questions or concerns, feel free to contact the NIRB's Technical Advisor, Sophia Granchinho at sgranchinho@nirb.ca or by phone at 867-983-4607.

Sincerely,

A handwritten signature in cursive script, reading "Stephanie Autut". The signature is written in dark ink and is positioned above the printed name and title.

Stephanie Autut
Executive Director

Cc: David Stevenson, Zinifex Canada Inc.
Andrew Mitchell, Zinifex Canada Inc.
Aaron MacDonell, Zinifex Canada Inc.
Thomas Kabloona, Nunavut Water Board
Phyllis Beaulieu, Nunavut Water Board

Attachment: NIRB Screening Decision, File No: 99WR053 (November 16, 1999)

SCREENING DECISION

Date: November 16, 1999

Mr. Thomas Kudloo
Chairperson, Nunavut Water Board
Gjoa Haven, NT

Dear Mr. Kudloo:

**RE: Screening Decision of the Nunavut Impact Review Board (NIRB) on Application:
NIRB 99WR053 NWB NWB1LUP
Water Licence Renewal – Lupin Mines**

Authority:

Section 12.4.4 of the Nunavut Land Claim Agreement states:

Upon receipt of a project proposal, NIRB shall screen the proposal and indicate to the Minister in writing that:

- a) the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;
- b) the proposal requires review under Part 5 or 6; NIRB shall identify particular issues or concerns which should be considered in such a review;
- c) the proposal is insufficiently developed to permit proper screening, and should be returned to the proponent for clarification; or
- d) the potential adverse impacts of the proposal are so unacceptable that it should be modified or abandoned.

Primary Objectives:

The primary objectives of the Nunavut Land Claims Agreement is referenced in the screening section 12.4.4 (a) are set out in section 12.2.5 of the Land Claims Agreement. This section reads:

In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The Decision of the Board in this case is 12.4.4 (a) the proposal may be processed without a review under Part 5 or 6; NIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 12.2.5;

Reasons for Decision:

NIRB's decision is based on specific considerations that reflect the primary objectives of the Land Claims Agreement. Our considerations in making this decision included:

- the impact of mining activities on the ecosystem;
- disposal of waste water in the tailings facility;
- acid rock generation and drainage;
- impact to water quality, aquatic habitat and wildlife and fish populations from chemicals, waste rock and potential fuel spills;
- storage and disposal of chemicals, fuel, garbage, sewage, and grey water, and impact of these on the ecosystem;
- the impact of noise from activities and their disturbance to wildlife;
- the movement of vehicles and equipment and the impact on wildlife and terrain;
- the impact of activities on archaeological sites or cultural landmarks in the area; and
- clean up/restoration of the site upon abandonment.

Terms and Conditions:

- That the terms and conditions attached to this screening report will apply.

Waste & Water Management

1. The Licensee shall ensure that copies of all reports associated with operations at Lupin are submitted to NIRB, as well as, applicable authorizing agencies.
2. The Licensee shall ensure that the waste discharge area is of sufficient capacity to accommodate the volume of wastewater and any fines that are produced so that there will be no additional impacts. If there will be no decant in 2000, it should be confirmed that Pond 2 has sufficient capacity to maintain the required freeboard, given inputs from runoff and possibly minewater.
3. The Licensee shall install thermistors in Pond 2, if the mine continues to hold high levels of effluent in the pond.
4. The Licensee shall examine the metal limits for the sewage SNP station. If so warranted by results over the past decade, the metal limits should be brought into line with the Pond 2 effluent discharge limits.
5. The Licensee shall not discharge or deposit any refuse substances or other waste materials in any body of water, or on the banks thereof, which will impair the quality of the waters of the natural environment.
6. Any sumps or areas designated for waste disposal shall not be located within thirty (30) metres of the ordinary high water mark of any body of water, unless otherwise authorized.
7. The Licensee shall treat greywater and sewage according to the terms and conditions outlined in the NWB approval.
8. The Licensee shall incinerate all combustible and food wastes to eliminate potential for wildlife problems created by the attraction of wildlife to garbage.
9. The Licensee shall ensure that all non-combustible wastes generated through the course of the operation are backhauled and disposed of in an approved dumpsite.

10. The Licensee shall deposit all scrap metal, discarded machinery and parts, barrels and kegs, at an approved disposal site.
11. The Licensee shall dispose of all toxic or persistent substance in a manner approved by the NWB and the land use inspector.

Mining Operations

12. The Licensee shall not conduct any land based mining activities within thirty (30) metres of the normal high water mark of a water body.
13. The Licensee shall ensure that the release of total suspended solids in the receiving environment shall be in compliance with *Guidelines for Total Suspended Solids* contained in the *Canadian Council of Ministers for the Environment's (CCME) Canadian Water Quality Guidelines, Chapter 3 - Freshwater Aquatic Life* (i.e. 10mg/L for lakes with background level under 100mg/L, or 10% for those above 100mg/L).
14. The Licensee shall ensure that all drill cuttings are removed from ice surfaces.
15. The Licensee shall not use drilling muds or additives in connection with drill holes unless they are recirculated or contained such that they do not enter the water, or are certified to be non-toxic.
16. The Licensee shall ensure that any drill cuttings and waste water that cannot be re-circulated be disposed of in a properly constructed sump or an appropriate natural depression that does not drain into a waterbody.
17. The Licensee shall, where flowing water from bore holes is encountered, plug, the bore hole in such a manner as to permanently prevent any further outflow of water. If an artesian occurrence shall be reported to the Nunavut Water Board and Land Use Inspector within 48 hours.
18. The Licensee shall not detonate explosives within fifteen (15) metres of any body of water, which is not completely frozen to the bottom.

Quarrying

19. The Licensee shall slope the sides of the excavations and embankments except in solid rock to 2:1 (two horizontal to one vertical) unless otherwise approved in writing by the land use inspector.
20. The Licensee may only excavate and stockpile materials in areas designated.
21. The Licensee shall adopt such measures as required to control erosion by surface disturbance.
22. The Licensee shall leave a strip of undisturbed vegetation at least 100metres in width between clearing and public roads or navigable waterways unless otherwise approved in writing.

Structures & Storage Facilities

23. The Licensee shall not erect structures or store material on the surface ice of lakes or streams.
24. The Licensee shall locate all structures and storage facilities on gravel, sand or other durable land.
25. The Licensee shall use existing housing and operational facilities.

26. The Licensee shall ensure that non-acid generating materials are used for the construction of roads and ore pads. It is recommended that a summary of all testing be compiled, and a plan provided for preliminary testing of rock used in lay-downs, roads, etc. for acid generation potential.
27. The Licensee shall complete leachate and acid generation tests on ore and waste rock in a manner approved by the NWB. All test results shall be submitted to NIRB.

Fuel and Chemical Storage

28. The Licensee shall ensure that fuel storage containers are not located within thirty-one (31) metres of the ordinary high water mark of any body of water.
29. The Licensee shall ensure that any chemicals, fuels or wastes associated with the project do not spread to the surrounding lands or enter into any water body.
30. The Licensee shall take all reasonable precautions to prevent the possibility of migration of spilled petroleum fuel or chemicals over the ground surface.
31. The Licensee shall have one extra fuel storage container on site equal to, or greater than, the size of the largest fuel container.
32. The Licensee shall construct an impermeable dyke around each stationary fuel container or group of stationary fuel containers where one container has the capacity exceeding 4,000 liters.
33. The Licensee shall have an approved spill contingency plan in place prior to commencement of the land use operation.
34. The Licensee shall examine all fuel and chemical storage containers for leaks daily. All leaks should be prepared immediately.
35. The Licensee shall immediately report all spills of petroleum and hazardous chemicals to the twenty four (24) hour spill report line at (867) 920-8130.

Environmental

36. The Licensee shall ensure that the land use area is kept clean and tidy at all times.
37. The Licensee shall prepare the site in such a manner as to prevent damage to the ground surface.
38. The Licensee shall be required to undertake any corrective measures in the event of any damage to the land or water as a result of the Licensee's operation.
39. The Licensee shall not use any equipment except for the type, size and number that is listed in the accepted application.
40. The Licensee shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.
41. The Licensee shall suspend overland travel of equipment or vehicles if rutting occurs.

Wildlife

42. The Licensee shall ensure that there is no damage to wildlife habitat in conducting this operation.
43. The Licensee shall not feed wildlife.
44. The Licensee shall provide compensation to the HTO(s) for any Polar Bear defense kills.

45. The Licensee shall ensure that the drilling, blasting, quarrying and road construction avoid known environmentally sensitive areas (denning, nesting etc.) and wildlife activity by a minimum of 250 metres.
46. The Licensee shall not locate any operation so as to block or cause substantial diversion to migration of caribou.
47. The Licensee shall cease activities that may interfere with migration or calving, such as airborne geophysics surveys or movement of equipment, drilling activities until the caribou and their calves have vacated the area.
48. The Licensee shall ensure that aircraft pilots adhere to recommended flight altitudes of greater than 300 m above ground level as to not disturb wildlife. Raptor nesting sites and concentrations of nesting or molting waterfowl should be avoided by aircraft at all times.
49. The Licensee shall ensure compliance with Section 36 of the *Fisheries Act* which requires that no person shall deposit or permit the deposit of a deleterious substance on any type in water frequented by fish or in any place under any conditions where the deleterious substance may enter such a water body.
50. The harmful alteration, disruption or destruction of fish habitat is prohibited under Section 35 of the *Fisheries Act*. No construction or disturbance of any stream/lake bed or banks of any definable watercourse is permitted unless authorized by DFO.
51. The Licensee shall ensure that all water intake hoses are equipped with a screen with an appropriate mesh size to ensure that there is no entrapment of fish.
52. The Licensee shall not obstruct the movement of fish while conducting the land use operation.
53. That the Licensee remove any carcasses along the roadway to prevent attraction by scavengers, preventing further road kills.

Archaeological Sites

54. The Licensee shall follow all terms and conditions for the protection and restoration of archaeological resources as outlined by the Prince of Wales Northern Heritage Centre (PWNHC) in attached letter.

Reclamation

55. The Licensee shall remove all scrap metal, discarded machinery and parts, barrels and kegs, buildings and building material upon abandonment.
56. The Licensee shall undertake ongoing restoration for any land or improvements, which are no longer, required for the Licensee's operation on the land.
57. The Licensee shall cap all drill holes and cut off any drill casings that remain above ground to ground level upon abandonment of the operation.
58. The Licensee shall complete all clean up and restoration of the lands used prior to the expiry date of the permit.

Monitoring

59. The Licensee shall monitor the impacts to wildlife by maintaining a log of wildlife observed (species, number, date, time, location observed) and their behavior (i.e. avoidance, segregation, disturbance/stress, alteration of migration patterns or movements by wildlife).
60. The Licensee shall provide NIRB with all copies of reports, including the terms of reference, for the mitigation of dust.
61. The Licensee shall establish a monitoring program with the NWB in order to provide an on-going assessment of the tailings ponds. This monitoring program should include, but not be limited to measuring the seepage flow rate, temperature, total suspended solids, permafrost levels by thermistors and slope stability.
62. The Licensee shall submit to the NWB and NIRB a summary report of activities undertaken and any abandonment and restoration of the site.
63. It is recommended that both phosphorus and nitrogen be examined for the addition of nutrients to the aquatic environment from the measurement of tailings effluent discharge, and from the sewage lakes outfall. As well as providing current data, past loadings can be roughly estimated and possibly tied into the biological data for Contwoyto Lake which Echo Bay Mines Ltd. (EBML) have collected over the life of the mine.

Other Recommendations

1. NIRB would like to encourage the proponent to hire local people and services, to the extent possible.
2. NIRB advises proponents to consult with local residents regarding their activities in the region. It has been a long time since community elders and others have visited the Lupin site or Lupin personnel have given a presentation in the communities.
3. If in the future there is milling activity involving kimberlite it is recommended that an amendment to the current water licence be submitted. The amendment should include but not be limited to:
 1. The approximate amount of kimberlite to be processed
 2. Disposal method of both fine and coarse tailings
 3. The effect, if any from the kimberlite tailings on the chemistry of the Lupin tailings.
4. Any amendment requests deemed by NIRB to be outside the original scope of the project will be considered a new project.
5. The Environmental Protection Branch (DOE), Department of Fisheries and Oceans (DFO), Nunavut Impact Review Board (NIRB), and the Nunavut Water Board (NWB) should be advised of any material changes to plans or operating conditions associated with the project.

Validity of Land Claims Agreement

Section 2.12.2

Where there is any inconsistency or conflict between any federal, territorial and local government laws, and the Agreement, the Agreement shall prevail to the extent of the inconsistency or conflict.

Dated _____ at Cambridge Bay, NT

Larry Pokok Aknavigak, Chairperson