# Water Licence Application
# Supplementary Questionnaire
# for Exploratory Drilling

# SECTION 1 :

## GENERAL

1. Applicant NORANDA MINING AND EXPLORATION INC.
(Company, corporation, owner)

960 Alloy Drive, Thunder Bay, ONT.
(Postal address)

807-623-4339 (Telephone number) 807-623-0452 (Fax)

minees@microage.tb.com (OR) reesm@normin.com
(E-Mail)

Corporate Address (If different from above)

1 Adelaide St. East, Suite 2700
(Corporate Office Address) TORONTO, ONT.

416-962-7419 (Telephone number) 416-962-7420 (Fax)

n/a
(E-Mail)

Project Name Nagvaak or Ingi Lake -440

Location Melville Peninsula, NT.

Closest Community Repulse Bay ~130km, Hall Beach ~220 km

Latitude/Longitude Nagvaak Camp 82.8355775, 67.482933O4
Show the location of the project on a general location map.
Ingi drill holes: 83.699564, 67.064044 + 83.693633, 67.084803

2. Environmental Manager _____ (Name) _____ (Telephone No.)

or Project Manager Matt Rees (Title) 807-623-4339
Project Geologist

(OR)
CLINT BARR (Field Supervisor)
PROJECT GEOLOGIST

3. Indicate the status of the exploration activity on the date of application. (Check the appropriate space.)

| | | |
|---|---|---|
| Design | V | planning |
| Under construction | | |
| In operation | V | field visit to site |
| Suspended | | |
| Care and Maintenance | | |
| Abandoned | | |

4. If a change in the status of the exploration activity is expected, indicate the nature and anticipated date of such change.

If results of field visit are positive (~ June 30th) we would like to start the drill program ~ July 15 to 30th.

5. Indicate the present (or purposed) schedule for the exploration activity.

| | |
|---|---|
| Hours per week | ~70 |
| Days per week | 7 |
| Weeks per year | 4 |
| Number of employees | 6 |
| Number of Inuit employees | ? |

6. Estimate the term (life) of the exploration activity

1 month (Months / Year)

7. How will the project effect the traditional uses on Inuit Owned Lands?

Should have no effect. Not located on IOL

8. Have the Elders been consulted on effects to the traditional use on Inuit Owned Land? If so, list them. If not, why not?

Noranda personel have planned to contact local communities, starting in Hall Beach during our current field visit. From this we hope to get a sense of local Inuit concerns

9. Has the proponent consulted Inuit Organizations in the area? If so, list them.

Only through the Land Use permit application process (both Crown and Kivalliq Inuit Association) Also see #8.

10. Has the proponent consulted surrounding communities on traditional water use areas? If so, list them. If not, why not?

See #8

11. Attach a detailed map drawn to scale showing the relative locations (or proposed locations) of the exploration activity, Sewage and solid waste facilities, and containment areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities. Ore and waste rock storage piles, piping distribution systems, and transportation access routes around the site. The map also should include elevation contours, water bodies and an indication of drainage patterns for the area.

12. If applicable, provide a brief history of property development which took place before the present company gained control of the site. Include shafts, audits, mills (give rated capacity, etc.) waste dumps, chemical storage areas, tailings disposal areas and effluent discharge locations. Make references to the detailed map.

BHP Minerals explored in the same area from 1994 to 1996, and drilled approximately 20 to 30 holes, most on the historical BAR 1 and DVC claims/showings.

13. Give a short description of the proposed or current freshwater intake facility, the type and operating capacity of the pumps used, and the intake screen size.

Small "honda-type" (5 HP) pumps used to draw water from nearby lake or river. Intake hose equipped with very fine mesh screen.

14. At the rate of intended water usage for the exploration activity, explain water balance inputs and outputs in terms of estimated maximum draw down and recharge capability of the water source from fresh water will be drawn.

No ~~detectable~~ noticeable effect on water levels, as intake is quite low and almost all water is eventually returned.

15. Will any work be done that penetrates regions of permafrost?

Only in the form of drill holes (~ 1" d.i.)

16. If "YES" above, is the permafrost continuous or discontinuous ?

Continuous

17. Were (or will) any old workings or water bodies (be) dewatered in order to conduct the exploration activity ?

No

N/A

18. If "YES" above, indicate the name of the water body, the total volume of water to be discharged and the chemical characteristics of the water.

Water body (if unnamed give Latitude/Longitude)_____
Total volume _____ cubic metres
Receiving Watercourse _____ _____
Dewatering flow rate into above _____ cubic metres / sec

Chemical characteristics of discharge:

| | | | |
|---|---|---|---|
| T/Pb | _____ mg/L | Total Ammonia | _____ mg/L |
| T/Cu | _____ mg/L | Suspended solids | _____ mg/L |
| T/Al | _____ mg/L | Specific conductivity | _____ uhmo/cm |
| T/HCN | mg/L | pH | _____ |
| T/Hg | _____ mg/L | | |
| T/Zn | _____ mg/L | | |
| T/Cd | _____ mg/L | | |
| T/As | _____ mg/L | | |
| T/Ni | _____ mg/L | | |
| T/Mn | _____ mg/L | | |

19. Was (or will) the above discharge (be) treated chemically ? NO

20. If "YES" above, describe the applied treatment. N/A

21. Briefly describe what will be done with the camp sewage.
Sewage disposed in hand dug pits and buried. Grey water dispersed thru hand dug sump or natural rock or boulder sump.

## SECTION 2 :

### GEOLOGY AND MINERALOGY

22. Briefly describe the physical nature of the mineralization, including known dimensions and approximate shape.

Target is similar to the Black Angel Mine in Greenland, a "sedex-type" lead-zinc ore body.

23. Briefly describe the host rock in the general vicinity of the mineralization (from the surface to the mineralized zone.)

Highly metamorphosed sedimentary gneisses, including abundant marbles (carbonate)

24. Provide a geological description of the mineralized zone. (If possible, include the percentage of metals.)

We think it will be Pb and Zn bearing massive sulphide with ~ 25% pyrite and/or pyrrhotite.

25. Describe the geochemical tests which have been (or will be) performed on the ore, host rock, and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (ie. static tests, kinetic tests.) N/A as yet

26. Estimate the percentage of sulphide in the mineralization:

| | |
|---|---|
| pyrite | |
| pyrrhotite | |
| pyrite / pyrrhotite mixture | ~25% (?) |
| arsenopyrite | |

## SECTION 3 :

### EXPLORATION OPERATION

27. Check off the type (or proposed type) of exploration operation that will be used on the property and briefly describe the method in more detail.

a) Reverse circulation to obtain bulk sample
b) Trenching
c) Conventional open pit
d) Decline
e) Conventional underground
f) Strip mining activity
(g) Other Exploration activity (please explain)

Diamond Drilling for Core Recovery.

28. Indicate the size and number of samples that will be obtained.

_____ tonnes
_____ number of samples N/A

Please note if smaller samples are to be taken from different areas (note location) to form one large bulk sample.

29. Indicate the present or proposed average rate of exploratory production from all mineralized sources on the property:

N/A tonnes ore / day

30. Outline the water usage (or proposed water usage) in the exploration activity, indicate the source and volume of water for each use.

| | Source | Use | Volume ($m^3$ / day) |
|---|---|---|---|
| 1. | Lakes and rivers | drill | ~100 (?) |
| 2. | | | |

31. If applicable, indicate or estimate the volume of natural ground water presently gaining access to the mine workings.

N/A $m^3$ / day

32. If applicable, outline methods used underground or on surface to decrease mine water flow. (For example: recycling)

All drill water is recycled, however the hole may lose pressure in which case the return does not come to surface and new water has to be added.

33. List the brand names and constituents of the drill additives to be used.

$CaCl_2$ Calcium Chloride → stop water freezing

Polydrill or Matex → biodegradeable products.

## SECTION 4 : N/A

### THE MILL OR PROCESSING PLANT

34. Is there (or will there be) a portable mill processing plant be operating on the property in conjunction with the exploration activity ?

_____ Yes _____ No

35. If "yes" indicate the proposed point of discharge for the mill or process plant water and the volume of the discharge.

Point of discharge _____

Volume of discharge _____ $m^3$ / day

36. Attach a copy of the portable mill or processing plant flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

37. Indicate the proposed rate of milling.

_____ not applicable (check) or _____ tonnes / day

38. List the types and quantities of all reagents used in the mill or processing plant (in kg/tonne ore milled.)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Reagent:_____Amount in kg/tonne ore milled:_____

39. If applicable, is the (proposed) milling circuit based on autogenous grinding ?

Yes _____ No _____ Partially _____

40. Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill or processing plant wastes directed to the tailing deposition area.

| | | | |
|---|---|---|---|
| T/Cu _____ | mg/L | Total Ammonia | _____ mg/L |
| T/Pb _____ | mg/L | Suspended solids | _____ mg/L |
| T/Zn _____ | mg/L | Specific conductivity | _____ uhmo/cm |
| T/Ag _____ | mg/L | pH | _____ |
| T/Mn _____ | mg/L | Alkalinity | _____ $CaCo_3$/L |
| T/Ni _____ | mg/L | Hardness | _____ mg/L |
| T/Fe _____ | mg/L | Total cyanide | _____ mg/L |
| T/Hg _____ | mg/L | Oil and Grease | _____ mg/L |
| T/As _____ | mg/L | | |
| T/Cd _____ | mg/L | | |
| T/Cr _____ | mg/L | | |
| T/Al _____ | mg/L | | |

41. Provide a geochemical description of the solid fraction of the tailings.

| | | | |
|---|---|---|---|
| Cu _____ | mg/g | Al _____ | mg/g |
| Pb _____ | mg/g | Fe _____ | mg/g |
| Zn _____ | mg/g | Hg _____ | mg/g |
| Ag _____ | mg/g | Ni _____ | mg/g |
| Mn _____ | mg/g | As _____ | mg/g |
| Cr _____ | mg/g | CN _____ | mg/g |
| Cd _____ | mg/g | | |

## SECTION 5 :

N/A

### THE CONTAINMENT AREAS

42. What is the (Proposed) method of disposal of the mine water, mill or process plant tailings (ie. sump, subaqueous, surface tailings pond, settling pond) ?

43. Attach detailed scale plan drawings of the proposed (or present) containment area. The drawings must include the following:

a. a. details of pond size and elevation;

a. a. details of all retaining structures (length, width, height, meterails of construction, etc.);

a. a. details of the drainage basin;

a. a. details of all decant, siphon mechanisms etc., including water treatment plant facilities;

a. a. details with regard to the direction and route followed by the flow of wastes and / or waste water from the area; and

a. a. indicate of the distance to nearby major watercourses;

44 Justify your choice of location for the containment area design by rationalising rejection of other options. Consider the following criteria in your comparisons: subsurface strata permeability, abandonment, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

45. The average depth of the existing or proposed containment area is dependent on the volume of water encountered metres.

46. Indicate the total capacity for the existing or proposed containment area by using water balance and stage volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations.)

47. Has any evaporation and/or precipitation data been collected at the site ? _____ if so, please include the data.

48. Will the present or proposed containment area contain the entire production from the mill or processing plant complex for the life of the project ?

49. Will the proposed tailings deposition area engulf or otherwise disturb any existing watercourse?

50. If "Yes", attach all pertinent details (Name of watercourse, present average flow, direction of flow, proposed diversions, etc.)

51. Describe the proposed or present operation, maintenance and monitoring of the containment area.

## SECTION 6 :

N/A

### WATER TREATMENT

52. If applicable, will the minewater, mill or process plant water be chemically treated before being discharged to the containment area ? If so, explain the treatment process (Attach flow sheet if available.

53. Will (treated) effluent be discharged directly to a natural waterbody or will polishing or settling ponds be employed ? Describe location, control structures, and process of water retention and transfer. Attach any relevant design drawings.

54. Name the first major watercourse the discharge flow enters after it leaves the area of company operations.

## SECTION 7 :

### ENVIRONMENTAL MONITORING PROGRAM

55. Has Traditional Knowledge in the area been considered? If so, how? If not, why not?

56. Has any baseline data been collected for the main water bodies in the area prior to development ?

57. If "Yes", include all data gathered on the physical, biotic and chemical charateristics at each sampling location. Identify sampling locations on a map.

58. Provide an inventory of hazardous materials on the property and storage locations.

## SECTION 8 :

### ENVIRONMENTAL ASSESSMENT AND SCREENING

59. Has this project ever undergone an initial environmental review? If Yes, By whom and when.

No, early for that yet.

60. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (eg. Wildlife, soils, air quality), ie. In addition to water trelated information requested in this questionnaire ?

✓ Yes No _____ Unknown _____

61. If "Yes" please attach copies of reports or cite titles, authors and dates.

BHP and the GSC have conducted regional water and lake sediment sampleng surveys, which although geared towards exploration, are also a very good source of environmental background levels. GSC = OF 521 + OF 522. BHP = internal company report.

62. If no, are such studies being planned ? _____

Briefly describe the proposals.

63. Has authorization been obtained or sought from the Department of Fisheries and Oceans for dewatering or using any waterbodies for containment of waste? N/A

64. Has a socio-economic impact assessment or evaluation of this project been undertaken ? (this would include a review of any public concerns, land, water and cultural uses of the area, implications of land claims, compensation, local employment opportunities, etc.)

Yes _____ No ✓ Unknown _____

65. If "Yes" please describe the proposal briefly.

66. If "No" is such a study being planned ? Yes ✓ No _____ Consultation @ local communities (informal)

67. Describe any cumulative impacts the project may create? NONE

68. Does the project alter the quantity or quality or flow of waters through Inuit Owned Lands?

No

69. If yes, has the applicant entered into an agreement with the Designated Inuit Organization to pay compensation for any loss or damage that may be caused by the alteration.

70. If no compensation arrangement has been made, how will compensation be determined?