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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

Water Licence Application Supplementary Questionnaire for Mine Development

SECTION 1 :

GENERAL

1. Applicant

Hope Bay Joint Venture
(Miramar Hope Bay Ltd./Hope Bay Gold Corp.)
311 West First Street
North Vancouver, BC V7M 1B5

Phone: 604-985-2572 **Fax: 604-980-0731**
e-mail: hwilson@miramarmining.com
hugh_r_Wilson@hotmail.com

Corporate Address (if different from above):

(Corporate Office address)

_____

(Telephone number) (Fax)

(E-Mail)

Project Name **DORIS HINGE PROJECT**

Location

Closest Community **Umingmaktok**

Latitude/Longitude 68 deg. 09 min N 106 deg 40 min W
Show the location of the project on a general location map (eg: 1:1,000,000)

2. Environmental Manager **Hugh R. Wilson** **604 985 2572**
(Name) (Telephone No.)

or Project Manager _____
(Title)

3. Indicate the status of the mine or mill on the date of application. (Check the appropriate space.) Indicate schedule or time table of project activities.

Design	_____
Under construction	_____
In operation	_____
Suspended	_____
Care and Maintenance	_____
Abandoned	_____

4. If a change in the status of the mine or mill is expected, indicate the nature and anticipated date of such change.

Doris Hinge Project is in the feasibility study stage.

5. Indicate the proposed schedule for the Mine/Mill operating schedule.

Hours per week	**168**
Days per week	**7**
Weeks per year	**52**
Number of employees	**70-80**
Number of Inuit employees	**as many as possible who are trained and capable of performing the necessary duties**

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

No effect

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

Consultation with Bathurst Inlet, Umingmaktok and Cambridge Bay has been undertaken in 2000 and 2001 and will continue as the project proceeds to production.

8. Has the proponent consulted Inuit Organization in the Area? If so, list them.

The Doris Hinge Project is located on Inuit Owned Lands. Consultation has been ongoing with KIA, NTI, NWB, NIRB, NPC,CLARC'S and KHTA.

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

This has been part of ongoing consultations, visits to Bathurst Inlet and Umingmaktok are carried out annually. Project updates with KIA Board at their annual Board meetings.

10. Attach a detailed location map (1:50,000) drawn to scale showing all on site and off site facilities and activities. Show the relative locations of the (proposed) locations of the mine, mill, water treatment facilities, sewage and solid waste facilities, and tailings containment areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities, any existing or proposed concentrate, ore and waste rock storage piles, any existing and proposed drainage controls, piping distribution systems, gas, electric and water utility route locations, 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.

Please see Preliminary Project Description provided.

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

Please see Preliminary Project Description provided.

12. 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.

Final design and engineering will be done after the feasibility study has been completed, however; it is expected that the pumphouse and intakes would be consistent with other installations in the belt or at other similar operations in the West Kitikmeot region.

13. 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.

Please see Figure 8 in Preliminary Project Description for water balance.

14. Will any work be done that penetrates regions of permafrost ?
Yes__**X**__ No

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

continuous

16. Were (or will) any old workings or water bodies (be) dewatered in order to conduct the exploration activity ?
Yes_____ No__**X**

17. 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. Also included should be the receiving water body and expected schedule of the dewatering.

18. Was (or will) the above discharge (be) treated chemically ?
Yes_____ No **NOT APPLICABLE AS #16 WAS "NO"**

19. If "YES" above, describe the applied treatment.

NOT APPLCABLE AS #16 WAS "NO"

SECTION 2 :

GEOLOGY AND MINERALOGY

20. Physiography; Provide an analysis and interpretation of the geologic and hydrologic environment in the immediate vicinity of the mine or plant. The investigation should extend from ground surface downward to the base of the glacial drift. Include large scale topographic map(s) covering the area where the mine, mill and waste disposal basin are (or were to be)located. The map(s) should provide information on groundwater patterns and permafrost variations in the area.

Please refer to the Preliminary Project Description provided.

21. Briefly describe the physical nature of the orebody, including known dimensions and approximate shape.

This is somewhat explained in the Preliminary Project Description and will be updated at the conclusion of feasibility study.

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

Please see Preliminary Project Description provided.

23. Provide a geological description of the ore minerals of the deposit.(If possible, include the percentage of metals.)

Please see Preliminary Project Description provided.

24. 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, Kinetic tests.)

Please see Preliminary Project Description provided.

SECTION 3:

THE MINE

25. Indicate the type of mining method to be used on the property:

Open Pit _____**X**
Underground ____**X**
Strip mining
Other mining activity
Explain:

Please see Preliminary Project Description provided.

26. Outline any possible operational changes and when that might occur. (Eg. Open pit to underground)

Please see Preliminary Project Description provided.

27. Describe the type(s) of explosives to be used in mining operations.

Premixed ANFO that will arrive on an annual sealift.

28. Indicate the number of shafts or other openings that are presently on the property. Signify whether or not the openings are presently in use. (Submit measurement in metres) Indicate if used seasonally.

n/a

29. Are any entrances to shafts, adits, etc. below ground water level.

n/a

30. Are permafrost conditions expected?

Yes

31. Indicate the expected life of the mine.

30 months as described in the Preliminary Project Description

32. Indicate the present average rate of production from all ore sources on the property.

NO PRODUCTION AT THE SITE AT THIS TIME.

33. Indicate the expected maximum rate of production from all ore sources on the property.

Production is expected to be 600 tonnes per day as described in the attached Preliminary Project Description

34. Outline all water usage in the mine. Indicating the source and volume of water for each use.

Please see Preliminary Project Description provided.

35. Indicate the volume of natural ground water presently gaining access to the mine workings.

n/a m^3/day

36. Outline methods used (planned) underground to decrease minewater flow. (For example: recycling)

No mine water flow is expected.

37. Indicate the average daily volume of water to be discharged from the mine during normal operations.

No discharge from the mine is expected, however, should it occur, water would be pumped to surface and either used in the process (if metallurgically acceptable), or pumped to the tailings containment area.

38. If a mill will be operating on the property in conjunction with mining, will all minewater (underground, open pit, etc.) be directed to the mill for reuse?

See # 37 above

39. If not, indicate the proposed point and volume of discharge for the minewater.

n/a

40. What are the chemical and physical characteristics of the preceding minewater?

n/a

41. Are there any treatment plans for minewater and will any chemicals be used in such treatment? Explain.

n/a

SECTION 4:

THE MILL (PROCESSING PLANT)

42. Attach a copy of the (proposed) mill flow sheet., Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

43. If milling is in progress on the property at the present time, indicate the rate of milling.

__X__ not applicable (check) OR _____ tonnes/day

44. What is the present (or proposed) maximum capacity of the mill?

600 tonnes per day

45. List the types and quantities of all reagent used in the mill process (in kg/tonne ore milled.)

To be provided on conclusion of feasibility study in Project EIS.

46. Is the (proposed) milling circuit based on autogenous grinding?

Yes _____ No __X__ Partially

47. Indicate the amount(s) of concentrate(s) produced in the mill.

n/a

48. Will fresh water undergo treatment prior to use in the mill process? Explain.

n/a

49. Indicate all uses of water in the mill. Include the quantity and source of the water for each use

Please see Figure 8 in Preliminary Project Description provided.

Use	Source	Volume m^3/day

50. Indicate the total volume of water discharged from the mill.

900-1000 cubic meters per day.

51. Of the preceding volume, what quantity is (will be) recycled to other areas on the property (mine, mill, etc.)? Indicate location of use and quantity.

All make-up water will be pumped from Tail Lake which is the tailings containment area.

52. Based on yearly production, indicate the average quantity of tailings (Dry weight) discharged from the mill.

approximately 240 000 tonnes

53. What is the average liquid-solid ratio of tailings leaving the mill?

By weight: **1:2** By volume: **2:1**
Liquid: Solid Liquid: Solid

54. If applicable, identify any chemical treatment applied to the liquid phase before being discharged to the tailings area. (Attach flow sheet if available.)

All tailings containing cyanide will be processed through the cyanide destruction circuit.

55. Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill wastes directed to the tailings area.

will be provided on conclusion of Feasibility Study and Project EIS

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

will be provided on conclusion of Feasibility Study and Project EIS

57. Identify the current source of power production.

n/a; (3.2 mw diesel electric plant to be installed for operations)

58. At present, is the mill handling custom lots of ore from other properties (or will the mill be handling any in the future)?

n/a

59. If so, specify ore characteristics and describe any mill processes which will change as a result.

n/a

60. If tailings are being recovered in the mill or elsewhere for use as backfill etc.), indicate the quantity of solid tails (tonnes/day) recovered from the mill process.

n/a

61. Will exits be bermed to prevent spills from escaping the mill?

Please see Preliminary Project Description provided.

62. Will all sumps for process tanks have the required 110% holding capacity of the largest tank?

Yes

SECTION 5:

THE CONTAINMENT AREAS

63. Is the tailings containment area (being) designed for total containment?

Total containment of solids with reclaim water being pumped back to the mill process. It is expected that there will be an annual discharge of tailings pond water to the receiving environment.

64. Attach detailed scale plan drawings of the proposed (or present) tailings area. The drawings must include the following:
Please refer to the attached Preliminary Project Description.

a. details of pond size and elevation;

b. precise details of all retaining structures (length, width, height, materials of construction, etc.);

c. details of the drainage basin, and existing and proposed drainage modification;

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

e. the plan for tailings deposition and final tailings configuration;

f. details with regard to the direction and route followed by the flow of wastes and/or waters from the ore; and

g. indication of the distance to nearby major watercourses.

Note: Individual detailed large scale drawings of any facility (dam, decant system, ditch, dike, water treatment plant, etc.) (to be) constructed must be attached. Specific details with regard to the methods of construction, materials (to be) used, etc., are required.

65. Explain your choice of location for the tailings pond design by rationalizing rejection of other options. Consider the following criteria in your comparisons; subsurface strata, permeability, abandonment of tailings, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

Tail Lake is a small isolated lake with a correspondingly small watershed and is located close to the proposed processing facility. The watershed area of the proposed tailing containment area is 440 ha. The average depth of Tail Lake is +/- 3 metres.

66. The total area for the existing tailings basin in hectares and for any proposed tailings area is **n/a; see #65** Hectares.

67. The average depth of the tailings basin is **n/a; see # 65** metres.

68. Indicate the total capacity for the existing tailings area by using water balance and stage volume calculation and curves. (Attach a description of inputs and outputs along with volume calculations.)

Final engineering will be done on conclusion of Feasibility Study and will be included in Project EIS.

69. Indicate the total capacity for the proposed tailings area using water balance and stage volume calculation and curves. (Attach a description of inputs and outputs along with volume calculations.)

Final engineering will be done on conclusion of Feasibility Study and will be included in Project EIS.

70. Will the present tailings area contain the entire production from the mine-mill complex for the life of the project?

Yes

71. If "NO' above, or if production output increases tailings volumes. Indicate what plans have been made for future tailings disposal on the property.

72. Has any land in the immediate area been identified as native or crown land or withdrawn pending native claim settlement?

All lands required for the Project are Inuit Owned Lands (Block BB60)

73. Do the tailings area and all related treatment facilities lie on company held claims?

Yes

74. If not, indicate mine claim boundaries (and owners) on tailings area plan map. Also, attach a copy of all pertinent agreements signed with the owners of the claims not held by the company.

n/a

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

No

76. If "YES", attach all pertinent details (name of watercourse, present average flow, direction of flow, proposed diversions, etc.).

77. If any natural watercourse will gain access to the proposed tailings are, What methods will be used to decrease the amount of runoff water entering the containment area? Indicate the volume of water which will enter the tailings area from the source(s) in question and attach all pertinent details of proposed diversions.

Please see Preliminary Project Description provided.

78. Indicate on the tailings area plan drawing all sources of seepage presently encountered in the vicinity of the tailing area, the volume of each seepage flow (m3/day), and the direction of each flow.

Water balance of Tail Lake watershed to be provided in Project EIS.

79. Are the seepage flows from the property presently being treated chemically? _____ If so, describe how.

n/a

80. If NOT, explain.

n/a

81. Please attach a conceptual abandonment and restoration plan for all tailings areas being developed. Describe the measures that have been (or will be) taken to contain and stabilize the tailings area(s) against leaching and seepage after operations on the property cease.

Please see Preliminary Project Description provided.

82. Describe the proposed or present operation, maintenance and monitoring of the tailings area.

Please see Preliminary Project Description provided.

SECTION 6:

WATER TREATMENT

83. Describe the methods of chemical treatment that are presently being used and/or will be used to control the quality of the tailings effluent . Attach engineering drawings where applicable and a process flow chart. If a pilot test has been conducted please attach description of methodology and results.

Please see Preliminary Project Description provided.

84. List the names of chemicals to be used in the water treatment process.

This is subject to final engineering and will be provided in Project EIS.

85. What is the proposed or present average rate of effluent treatment of the plant (if applicable)?

This is subject to final engineering and will be provided in Project EIS.

86. What is the proposed or present maximum effluent treatment capacity of the plant (if applicable)?

This is subject to final engineering and will be provided in Project EIS.

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

This is subject to final engineering and will be provided in Project EIS.

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

Doris Creek; Please see Preliminary Project Description provided.

89. In terms of rate of effluent release and volume and flushing rate of the receiving watercourse, estimate the extent of the mixing zone within the receiving waters and where background levels of constituents for that watercourse will be attained.

This is subject to final engineering and will be provided in Project EIS.

90. Describe the present (proposed from pilot tests) chemical and physical characteristics of the tailings effluent (Decant).

This is subject to final engineering and will be provided in Project EIS.

SECTION 7:

ENVIRONMENTAL MONITORING PROGRAM

91. Have elders been consulted in the establishment of the monitoring program?

This will be part of ongoing Project consultations program.

92. Has Traditional Knowledge of the area been considered?

Will be included in Project EIS.

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

Yes; these data will be reviewed in Project EIS.

94. If "YES" include all data gathered on the physical, biotic and chemical characteristics at each sampling location. Identify sampling location on a map.

Please see Appendix 2 in Preliminary Project Description provided.

95. Provide an inventory of hazardous materials on the property and storage locations. *(Attach separate Map)*

This is subject to final engineering and will be provided in Project EIS.

96. Attach the present or proposed contingency plan which describes course of action, mitigative measures and equipment available for use in the event of system failures and spills or hazardous materials.

Contingency plans will be provided with Project EIS, however; the NWB do have contingency plans on file as they relate to the current activities in the belt.

97. Provide a conceptual abandonment and restoration plan for the site, detailing the costs to carry out the plan, and a proposal for a financial assurance which covers the costs to carry out the plan.

Please see Preliminary Project Description provided.

98. Provide a detailed emergency response plan for the project.

Will be developed with Project contingency Plans and submitted in support of Project EIS.

99. Provide a description of the pollution control systems and environmental management procedures.

Will be developed with Project contingency Plans and submitted in support of Project EIS.

SECTION 8:

ENVIRONMENTAL ASSESSMENT AND SCREENING

100. Has this project ever undergone an initial environmental review, including previous owners.

No

101. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g. wildlife, soils, air quality), i.e. in addition to water related information requested in this questionnaire?

Please see Preliminary Project Description provided. Project EIS will be developed to comply with EIS guidelines expected from NIRB.

102. Describe any cumulative impacts the project may create?

Please see Preliminary Project Description provided;
Also to be included in Project EIS

103. Has any meteorological data been collected at or near the site? (E.g. precipitation, evaporation, snow, wind).

a) If so, please include the data and attach copies of reports or site titles, authors and dates.

Please see Figures 9 and 10 in Preliminary Project Description provided.

104. If no, are such studies being planned? Briefly describe the proposals.

Please see Preliminary Project Description Appendix 2 for studies completed to date that will be reviewed in preparation of Project EIS.

105. Has authorization been obtained or sought from the department of fisheries and oceans for dewatering or using any water bodies for containment of waste?

Applications for particulars have been requested from DFO and will be submitted to DFO with copies to KIA, NWB, and NIRB as soon as possible.

106. Please attach an outline briefly describing any options or alternatives considered or reflected for the various mine components outlined in this questionnaire (e.g. mill site, water supply sources, location for ore and waste piles).

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

Please see Preliminary Project Description provided.

108. If yes, please describe the proposal briefly.

It is expected that these issues will be negotiated in an Inuit Impact and Benefit Agreement, and it is the intention of the proponent to initiate these discussions with KIA in due course.

109. If no, is such a study being planned? Yes_____ (When) OR No

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

No

111. 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.

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