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**Water Licence Application  
Supplementary Questionnaire  
for Advanced Exploration  
(Underground drilling, bulk sampling, etc.)**

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## SECTION 1 :

### GENERAL

1. Applicant **Tahera Diamond Corporation**  
(Company, corporation, owner)  
  
**#7-68 Schooner St, Coquitlam, BC V3K 7B1**  
(Postal address)  
  
**1-604-519-1977** **1-604-519-1978**  
(Telephone number) (Fax)  
  
**fmcdonnell@tahera.com**  
(E-Mail)

Corporate Address (If different from above)

**130 Adelaide St West, Suite 1900, Toronto ON, M5H 3P5**  
(Corporate Office Address)  
  
**(416) 777-1998** **(416) 777-1898**  
(Telephone number) (Fax)  
  
**missal@tahera.com**  
(E-Mail)

Project Name **Muskox RC Bulk Sample**

Location **245 km to the SE of Kugluktuk in the Kitikmeot region of Nunavut**

Closest Community **Kugluktuk**

Latitude/Longitude **65°57 N, 111°47 W**  
Show the location of the project on a general location map.

2. Environmental Manager\_ **Cheryl Wray** **(780) 644-9129**  
(Name) (Telephone No.)  
  
or Project Manager **Mr. Michael Johnson**  
(Title)

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

Design	<u>                    </u>
Under construction	<u>                    </u>
In operation	<u>                    </u>
Suspended	<u>    X    </u>
Care and Maintenance	<u>                    </u>
Abandoned	<u>                    </u>

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

**(The RC bulk sample was completed in April 2006. No more Bulk Sampling at the site is planned.)**

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

Hours per week	<u>    168    </u>
Days per week	<u>    7    </u>
Weeks per year	<u>    12    </u>
Number of employees	<u>    42    </u>
Number of Inuit employees	<u>    6    </u>

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

    0.25     (Months / Year)

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

**The project had no effect on the traditional uses on Inuit Owned Lands.**

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

**Communities were consulted extensively for the Jericho Diamond Project which is close by (14 km distant) and traditional land use was identified for that project. Traditional use of the area has been exclusive for hunting. Subsistence fishing has been largely confined to larger lakes, such as Contwoyto Lake.**

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

The KIA has been consulted in the process of obtaining a IOL land use permit, which includes approval for all activities contemplated at this time.

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

**Please refer back to question 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.

**No permanent infrastructure was constructed. All fuel storage locations will be temporary and the locations will not be determined until mobilization into site. All fuel storage locations will be at least 50 m from high water mark of water bodies.**

**No permanent containment was constructed. Drill water was contained in a storage tank and drill cuttings removed to the Jericho mine-site while a small amount was released into a sump nearby.**

**During overburden drilling, the amount of sediment produced outpaced the ability to store and transport the drill water and sediment. For this scenario, a sump location for drill water was determined by site investigation prior to commencement of operations with sufficient volume to contain all drill water sediment.**

**The total maximum quantity of fines produced by drilling overburden did not exceed 480 m<sup>3</sup>. For drilling kimberlite, the total maximum quantity of cuttings produced did not exceed 672 m<sup>3</sup>. These figures contain a 50% contingency.**

**A temporary winter ice road was constructed between the Jericho Diamond Project and the Muskox kimberlite for transporting the drill water and cuttings/fines to the Jericho mine-site.**

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.

**No previous property development**

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.

**Not applicable, no freshwater intake facility will be constructed.**

**A small Honda water pump serviced the RC drill rig. The intake screen size will be < 2.54mm as per DFO regulations.**

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.

**Over the course of the entire RC bulk sample program, a maximum total of 30 m<sup>3</sup> of water is estimated to be removed from the lake and deposited at Jericho. The water usage will have negligible effects on the water balance of the lake.**

**Any water removed from the lake to the nearby sump will eventually return to the lake by overland flow resulting in no net loss of water.**

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

**Yes**

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, not applicable.**

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.

**N/A**

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 ?

**N/A**

20. If “YES” above, describe the applied treatment.

N/A

21. Briefly describe what will be done with the camp sewage.  
All human waste was incinerated in a diesel incinerator, with portable toilets being used.

## **SECTION 2 :**

### **GEOLOGY AND MINERALOGY**

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

**Muskox is a circular kimberlite intrusion that tapers with depth and a surface area of approximately 4 ha. The external pipe contact with the surrounding country rock is still poorly delineated but the high end volume is estimated at 6 million cubic meters with a total mass of 16 million tonnes.**

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

**The kimberlite is located under a small lake and unconsolidated overburden. The host rock surrounding the kimberlite is composed of granite and granodiorite.**

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

**The kimberlite pipe is composed of two or more kimberlite phases; volcanoclastic (“VKB”) and hypabyssal (“HK”) material. The two phases of hypabyssal kimberlite have been identified using petrographic analysis, variations in olivine and spinel mineral chemistry and some of the whole rock geochemical data.**

**The HK is well-indurated dark grey to black in colour, composed of macrocrysts of predominantly olivine, with lesser amounts of pyroxene, garnet, ilmenite and phlogopite. Mantle and crustal xenoliths occur in an aphanitic matrix. Country rock xenoliths make up 10 to 15% of the rock and are composed of roughly equal proportions of granite and carbonate. The HK comprises roughly 51% of the pipe by weight (8.3 million tonnes) and 48% of the pipe by volume (3.0 million cubic metres).**



The VK is light grey to dark green in colour, largely a function of the amount of carbonate xenoliths incorporated into the pipe. The composition of primary minerals indicates that the kimberlite belongs to Group 1. Xenolith content often exceeds 15% of the modal volume of the rock thus giving it a brecciated texture. Crustal xenoliths are mostly carbonate (with varying degrees of reaction rims) and coarse-grained granite to pegmatitic granite. Juvenile material comprises 3-15 volume % of the rock, occurring either as subrounded cognate clasts or as rims on xenoliths and xenocrysts. Olivine macrocrysts are abundant (10-25 volume %), ranging in size from 2-20 mm with most completely altered to serpentine. The groundmass comprises olivine phenocrysts, opaques and monticellite set in a typically fine-grained unresolvable brown/yellow matrix (likely carbonate and serpentine). Mantle xenoliths and xenocrysts of peridotite and eclogite with chromium-diopside and ilmenite megacrysts are equally distributed and make up less than 1 % of the volume of the rock. The VK phase comprises roughly 49% of the pipe by weight (7.9 million tonnes) and 52% of the pipe by volume (3.2 million cubic metres).

No economic metals are present. Only low background crustal average concentrates for kimberlites are expected. No assays have been conducted due to this consideration.

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.)

**Kimberlite samples will be sent to a laboratory in southern Canada for processing. Due to the nature of the kimberlite geochemistry, no acid generation is anticipated.**

**The kimberlite drill cuttings will be disposed of in the Jericho Diamond Project tailings pond with kimberlite materials from that project.**

**Kimberlite samples will be stored in poly bags and shipped down to a designated facility for processing.**

26. Estimate the percentage of sulphide in the mineralization:

pyrite	<u>0 to 0.1 %</u>
pyrrhotite	<u>0 to 0.1 %</u>
pyrite / pyrrhotite mixture	<u>0 to 0.1 %</u>
arsenopyrite	<u>0 to 0.1 %</u>

**Sulphides are not generally associated with kimberlite and no sulphides have been identified, or are expected, in the MuskoX kimberlite.**

### **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   | <u>          X          </u>      |
| b) | Trenching                                   | <u>                          </u> |
| c) | Conventional open pit                       | <u>                          </u> |
| d) | Decline                                     | <u>                          </u> |
| e) | Conventional underground                    | <u>                          </u> |
| f) | Strip mining activity                       | <u>                          </u> |
| g) | Other Exploration activity (please explain) | <u>                          </u> |

**A 17.5 inch reverse circulation (RC) drill rig was used to collect a bulk sample from the MuskoX kimberlite. The sample was collected from 9 holes drilled to a depth of 250 to 300 m below surface. The total meterage planned for the bulk sample was 2000 to 3500 metres. Each RC hole would collect approximately 100 tonnes of kimberlite for a total recovery of approx 900 tonnes.**

**NQ, HQ and PQ-sized core for a total meterage of 5000 metres was collected using a Boyles 37a diamond drill rig. The core drilling program is designed to further delineate the pipe and to twin the RC holes for geological control.**

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

          900           tonnes  
          1           number of samples

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

**9 vertical RC drill holes were drilled into the kimberlite pipe. The majority of the drill holes will test the HK phase and only 1 drill hole was drilled for the VK phase. The accumulation of all material from all drill holes constitutes a singular bulk sample.**

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

20 (proposed) 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 <sup>3</sup> / day)
1.	<u>lake above Muskox pipe</u>	<u>RC drilling</u>	<u>34</u> max average 20
2.	<u>lakes adjacent to sites</u>	<u>diamond drilling*</u>	<u>46 - 80</u>
3.	<u>lake adjacent to camp</u>	<u>camp</u>	<u>10 - 15</u>

**\*Note: Actual water usage volume was dependant on the core size drilled with HQ at the low end and PQ at the high end. Most of this water will be returned to the lake in pristine condition as the water must be circulated at all times through the water line to prevent freezing. Only a fraction of this volume of water will used for actual drilling.**

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

N/A m<sup>3</sup> / day

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

**N/A, no mine water flow**

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

**RC drilling: Maxgel (bentonite) and Drispac**

**Diamond Drilling: Quik-Gel, Quik-Trol, Poly Drill OBX and 133, Linseed Soap, Special "E" Thread Dope, Big Bear Diamond Drill Rod Grease and 550 X polymer.**

**Please refer to Spill Contingency Plan submitted with the Water License Application for MSDS and information.**

## **SECTION 4 :**

### **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                      **X** \_\_\_\_\_ 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    **N/A** \_\_\_\_\_

Volume of discharge    **N/A** \_\_\_\_\_ m<sup>3</sup> / 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.

**N/A** \_\_\_\_\_ 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.)

**N/A**

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 <sub>3</sub> /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 _____ g/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 :**

### **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) ?

**Drill water and cuttings from the RC drill when drilling kimberlite was stored in a tank at the drill and then transported to the Jericho Diamond Project by ice road for disposal in the Jericho tailings pond. Drill water and sediment fines from drilling overburden with the RC rig was treated in the same way as, unless the production of fines outpaced the ability of the vacuum truck to travel to Jericho and back in the required time. In this case, drill water and fines was trucked to a sump location in close proximity to the drill site. This sump location was located at least 100 m from the high water mark of any water bodies and will be of a size large enough to contain more than the predicted volume of produced fines.**

**Drill water and cuttings from the diamond drill rig were pumped to a suitable sump location at least 100 m from the high water mark of any water bodies.**

43. Attach detailed scale plan drawings of the proposed (or present) containment area. The drawings must include the following:
- a) details of pond size and elevation;
  - b) details of all retaining structures (length, width, height, materials of construction, etc.);
  - c) details of the drainage basin;
  - d) details of all decant, siphon mechanisms etc., including water treatment plant facilities;
  - e) details with regard to the direction and route followed by the flow of wastes and / or waste water from the area; and
  - f) indicate of the distance to nearby major watercourses.

**The sump site was a natural depression and is marked on the map of the MuskoX Kimberlite site**

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.

**A good depression was located. It was the best fit taking into account topography, proximity to lakes, proximity to ice road, and its size.**

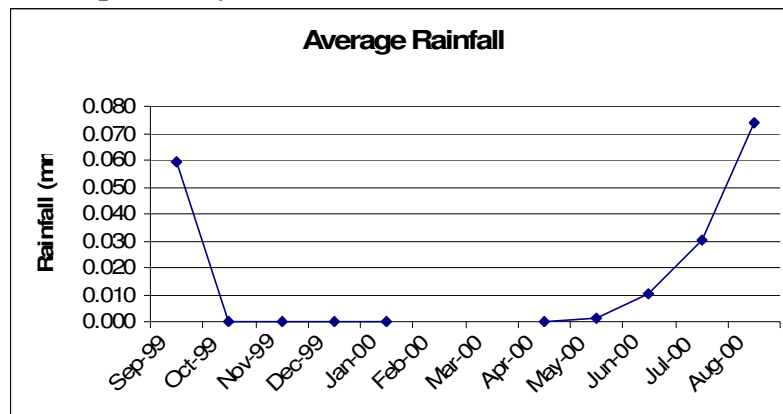
45. The average depth of the existing or proposed containment area is dependent on the volume of water encountered metres.

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.)

**The total capacity of the proposed sump was significantly larger than the required capacity. Close inspection before, during and after the sample confirmed this.**

47. Has any evaporation and/or precipitation data been collected at the site? No if so, please include the data.

**No data has been collected at the proposed sump location. Average rainfall data from the Jericho Diamond Project EIS is included below. The data should be comparable to the proposed sump locations due to the proximity (14 km) of the two locations.**



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?

**No, not applicable.**

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

**No, not applicable**

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

**N/A**

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

**During operation, the sump location was monitored daily for sediment movement and discharge.**

## **SECTION 6 :**

### **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.

**N/A**



53. 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.

N/A

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

**Burnside River**

## **SECTION 7 :**

### **ENVIRONMENTAL MONITORING PROGRAM**

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

**Please refer back to question 8 in this questionnaire.**

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

**Data was collected in 2005. Results and map have been attached.**

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

**N/A**

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

**Please refer to Spill Contingency Plan submitted with the Water License Application form.**

59. 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.

**See Abandonment and Restoration Plan submitted with the Water License Application form.**

## **SECTION 8 :**

### **ENVIRONMENTAL ASSESSMENT AND SCREENING**

60. Has this project ever undergone an initial environmental review? If yes, by whom and when.

**N/A, project is only in the exploration phase.**

61. 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 treated information requested in this questionnaire?

Yes \_\_\_\_\_ No **X** Unknown \_\_\_\_\_

62. If “Yes” please attach copies of reports or cite titles, authors and dates.

**N/A**

63. If no, are such studies being planned? **N/A**

Briefly describe the proposals.

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

**No, not applicable.**

65. 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 **X** \_\_\_\_\_

Unknown \_\_\_\_\_

**The project is still in exploration phase.**

66. If “Yes” please describe the proposal briefly.

**N/A**

67. If “No” is such a study being planned? Yes \_\_\_\_\_ No **X** \_\_\_\_\_

68. Describe any cumulative impacts the project may create?

**No impacts predicted**

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

**No**

70. 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.

**N/A**

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

**N/A**