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## **NIRB Application for Screening #125023**

### **Kahuna Diamond Project**

**Application Type:** New  
**Project Type:** Exploration  
**Application Date:** 11/28/2016 12:42:19 PM  
**Period of Operation:** From 2017-03-01 to 2019-03-01  
**Proposed Authorization:** From 2017-03-01 to 2019-03-01  
**Project proponent:** Chris Taylor  
Dunnedin Ventures Inc.  
1110, 1111 West Georgia St.  
Vancouver BC V6E 4M3  
Canada  
Tel: 778 327 5799, fax: 778 327 6675

### **DETAILS**

#### **Non-technical project proposal description**

English: Dunnedin Ventures Inc. (Dunnedin) currently has authorization in the form of a Class 3 Land Use Licence from the Kivalliq Inuit Association (KIA) KVL115B02 for staking and prospecting which expires on July 16, 2018, and a Land Use Permit from Aboriginal Affairs and Northern Development Canada (AANDC) N2015C0019 which expires on July 16, 2017. Dunnedin Ventures Inc. is applying for an amendment to the Class 3 Land Use License with the Kivalliq Inuit Association (KIA) and an amendment to the company's Class A Land Use Permit with Aboriginal Affairs and Northern Development Canada (AANDC) and an application to the Nunavut Water Board (NWB) for the purpose of conducting diamond an exploration drill program. Dunnedin's mineral claims are located in the Kivalliq Region of Nunavut which covers both Crown and Inuit Owned Lands, Surface Parcel CI-15. The center of the property is located approximately 54 km to the NE of Rankin Inlet and 37 km to the SW of Chesterfield Inlet.

French: N/A

Inuktitut: N/A

#### **Personnel**

Personnel on site: 25

Days on site: 104

Total Person days: 2600

Period of operation: from 2017-03-01 to 2019-03-01

Proposed term of operation: from 2017-03-01 to 2019-03-01

## ACTIVITIES

### Project Activities

Location	Activity Type	Land Status	Site History	Site Archaeological or Palentological Value	Proximity to the nearest communities and any protected areas
KH 1 Kahuna Bulk Sample site	Mineral Exploration	Inuit Owned Surface Lands	previously explored by Shear Minerals.	preliminary archaeological assessment conducted September 2016	The center of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 2	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	The center of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 3	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities by Shear Minerals	preliminary archaeological assessment conducted September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km southwest of Chesterfield Inlet.
KH 4	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals.	preliminary archaeological assessment conducted in September 2016	The centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 5	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 6	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016.	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 7 PST Bulk Sample site	Sampling sites	Crown	Notch Bulk Sample Site previous exploration activities conducted by Shear Minerals.	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 8	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 9 Notch Bulk	Mineral	Crown	previous	preliminary	the centre of the

Sample Site	Exploration		exploration activities conducted by Shear Minerals.	archaeological assessment conducted in September 2016	property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 10	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 13	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 28	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 11	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 27	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment was conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 29	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 22	Mineral Exploration	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 19	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 12	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of

					Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 14	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 15	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chessterfield Inlet
KH 16	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 17	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 18	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 21	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 20	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet.
KH 23	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 24	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet

KH 25	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
KH 26	Mineral Exploration	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
Kahuna_FC	Fuel and chemical storage	Inuit Owned Surface Lands	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
Notch_FC	Fuel and chemical storage	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
PST_FC	Fuel and chemical storage	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
PST bulk sample site	Sampling sites	Crown	site previously sampled by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
Notch bulk sample site	Sampling sites	Crown	previous exploration activities conducted by Shear Minerals	preliminary archaeological assessment conducted in September 2016	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
winter overland haul	Access Road	Inuit Owned Sub-Surface Lands	winter overland haul has previously been utilized by Shear Minerals	preliminary archaeological assessment conducted in September 2016 of project area including the winter overland haul route	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
winter overland haul	Access Road	Crown	winter overland haul previously utilized by Shear Minerals	preliminary archaeological assessment conducted in September 2016 including the winter overland haul route	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
Kahuna bulk sample site	Sampling sites	Inuit Owned Surface Lands	Kahuna Bulk Sample Site previously sampled	preliminary archaeological assessment conducted	the centre of the property is located approximately 54 km

			by Shear Minerals	in September 2016	to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet
winter overland haul staging	Access Road	Inuit Owned Sub-Surface Lands	winter overland haul previously utilized by Shear Minerals	preliminary archaeological assessment conducted in September 2016 including winter overland haul route	the winter overland haul begins in Rankin Inlet and extends to near of the old Josephine Lake camp previously used by Shear Minerals.
winter overland haul staging	Access Road	Crown	winter overland haul previously utilized by Shear Minerals	preliminary archaeological assessment conducted in September 2016 including the winter overland haul route	the centre of the property is located approximately 54 km to the northeast of Rankin Inlet and 37 km to the southwest of Chesterfield Inlet

### Community Involvement and Regional Benefits

Community	Name	Organization	Date Contacted
Chesterfield Inlet	Peter Kattegatsiak, Director	KIA Chesterfield Inlet	2016-05-30
Chesterfield Inlet	Hamlet, KIA, Aqigiq HTO, MLAs	Hamlet, KIA, Aqigiq HTO, MLA's	2017-11-18
Chesterfield Inlet	Mayor Barney Aggark	Hamlet of Chesterfield Inlet	2017-10-31
Chesterfield Inlet	Chair Barney Aggard	Aqigiq HTO	2017-11-06
Chesterfield Inlet	Daivd Ningeognan	Kivalliq Inuit Association	2017-05-30
Chesterfield Inlet	Barney Aggark	Aqigiq HTO	2017-05-30

## AUTHORIZATIONS

### Project Locations

### Project Authorization

Authorizing Agency	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Kivalliq Inuit Association	KVL115B02	Active	2015-05-31	2018-07-16
Kivalliq Inuit Association	KVL315B01	Applied, Decision Pending		
Aboriginal Affairs and Northern Development Canada	N20115C0019	Active	2015-07-17	2017-07-16
Nunavut Water Board	2BE-KDP-	Applied, Decision Pending		
Aboriginal Affairs and Northern Development Canada	amendment to including drilling and bulk sampling	Applied, Decision Pending		
Kivalliq Inuit Association	KVRW16F01	Applied, Decision Pending		

Please indicate the mineral of interest that is being extracted. Include a brief description.

Mineral Type	Description
Diamonds	diamond bearing kimberlite dykes have been located

## MATERIAL USE

Equipment to be used (including drills, pumps, aircraft, vehicles etc.)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Helicopter	1	Long Ranger or A Star	drill moves, ground and crew support and transport
Heli portable Core Drill	1	Boyles 17A or equivalent	drill testing
Caterpillar Challenger	1	Caterpillar Challenger	overland winter hauling
Bombardier Snow Cat	1	Snow Cat	overland winter hauling and back hauling
snowmobiles	4	snowmobiles	crew transport and surveying
air track drill	1	air track drill	blast holes and bulk sampling
excavator	1	small excavator	bulk sample removal
water pumps	2	small water pumps	water supply for drill
generator	1	small generator	to power water pumps
Reverse Circulation Drill	1	Standard	bulk sample

## Detail Fuel and Hazardous Material Use

Fuel / Material	Type	Number of Containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	120	45	5400	Gallons	drills
Aviation fuel	fuel	75	45	3375	Gallons	helicopter

## Project Water Consumption

Daily Amount (m3)	Proposed Water Retrieval Methods	Proposed Water Retrieval Location
100	hose with water pump	small lakes adjacent to drills

## WASTE

### Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional Treatment Procedures
Mineral Exploration	Combustible wastes	minimal	return to Rankin Inlet for disposal	none required
Mineral Exploration	Greywater	none	nea	none
Mineral Exploration	Hazardous	none	none	none
Mineral Exploration	Hazardous waste	minimal	backhaul to approved facility	none
Mineral Exploration	Non-Combustible wastes	minimal	backhaul to Rankin for disposal	none
Mineral Exploration	Overburden (organic soil, waste material, tailings)	moderate	return to as close to natural as soon as possible	none
Mineral Exploration	Sewage (human waste)	minimal	return to Rankin Inlet for disposal	none

## Environmental Impacts

Minimal environmental impacts are expected as a result of grassroots exploration activities. Drilling and bulk sampling will have more moderate environmental impacts that will be remediated immediately after operations by filling in bulk sample locations and flagging off any areas that could be deemed to be of a safety risk.

## **DETAILS PART 2**

### **Project General Information**

Dunnedin Ventures Inc is applying for an amendment to the Class 3 Land Use License with the Kivalliq Inuit Association (KIA) and an amendment to the company's Class A Land Use Permit with Aboriginal Affairs and Northern Development Canada (AANDC) and an application to the Nunavut Water Board (NWB) for the purpose of conducting diamond an exploration drill program. Dunnedin's mineral claims are located in the Kivalliq Region of Nunavut which covers both Crown and Inuit Owned Lands, Surface Parcel CI-15. The center of the property is located approximately 54 kilometers to the northeast of Rankin Inlet and 37 kilometers to the southwest of Chesterfield Inlet. The Kahuna claim group covers 33,810.8 hectares of land on NTS map sheet 55O/02, 03. The purpose of our Dunnedin's activities is to evaluate the potential for economic concentrations of diamonds on Inuit owned surface land and on crown land. The company's plan is to conduct exploration drilling on the Kahuna Property in order to assess historical kimberlite occurrences and to discover new diamond bearing kimberlites. Dunnedin Ventures Inc is submitting has submitted permit applications to complete prospecting, rock, till and soil sampling, geological mapping, diamond/and or reverse circulation drilling, test pit trenching, ground geophysical surveys and a bulk sampling program. A permit from the KIA for an overland winter trail from Rankin Inlet to the bulk sample sites is required to transport heavy equipment and to establish fuel cache sites to support the program. No camp is required at this time and all activities will be conducted from Rankin Inlet. Access to the property is by helicopter. All of these activities have a low impact on the environment and all impacts are temporary and easily reclaimed.

### **DFO Operational Statement of Conformity**

#### **Transportation**

Helicopter - Long Ranger or A Star - drill moves, ground support and crew transport Heli portable core drill - Boyles 17A or equivalent - core drilling Caterpillar Challengers - fuel and equipment transport to bulk sample sites (overland haul) Bombardier Sno Cats - fuel and equipment transport to bulk sample sites (overland haul) Snowmobiles - crew transport and surveying The Kahuna claim group is currently accessed by helicopter only through f r om the community of Rankin Inlet. During the summer field season personnel and equipment will be mobilized to the site and from site to site within the property boundary by helicopter access. A cat train is required to haul fuel and equipment on an overland winter trail from Rankin Inlet to the bulk sample sites, a distance of approximately 54km and would follow the previous route travelled to supply the abandoned Shear Minerals exploration site. The proposed route will cross both Inuit Owned Lands- Subsurface and Crown Land. The route will avoid travelling over frozen and snow covered tundra as much as possible by utilizing frozen lakes and river ice en route. The timing for the bulk sampling program is scheduled for mid-March 20167, at a time when the ground is frozen and covered by snow minimizing ground disturbance. In order to complete the bulk sampling program in a timely fashion, the mobilization of equipment and fuel should be completed by early March May. The timing of the cat train will take place before caribou migration and calving season and nesting of migratory birds. The proposed overland winter trail route is illustrated in Figure 5, Appendix A: Detailed Project Description and Work Plan submission.

#### **Camp Site**

no camp required at this time. all activities based out of Rankin Inlet.

#### **Equipment**

Helicopter - Long Ranger or A Star -drill moves, ground support and crew transport Heli portable core drill - Boyles 17A or equivalent - core drilling Caterpillar Challengers - fuel and equipment transport to bulk sample sites Bombardier Sno Cats - fuel and equipment transport to bulk sample sites Snowmobiles - crew transport and surveying Air Track / Reverse Circulation Drill - blast holes, bulk sampling Excavator - bulk sample removal water pumps - supply water to drills generator - provide power to pumps

#### **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. As precise drill targets have yet to be selected, water for drilling could be drawn from any of the surrounding lakes and ponds that exist on the property local to the drill sites. No water source will be drawn down. For drilling operations, an electric pump will be utilized at the water source. An extension cord will be run from the diesel powered generator to the electric pump, placing the diesel generator and fuel at least 31m back from the edge of the water source. The drill pump uses a 1" inside diameter suction hose on the diesel pumps with a fine screen on the foot valve. For drilling, a fibreglass window screen with a nominal opening size of 1/16" is also generally wrapped around the foot valve to prevent the intake of silt, sand and fish into the pump. In addition it is common practice to place the foot valve of the intake hose in a perforated 20 litre pail, which further protects against harmful materials and fish from being entrained into intake hoses. 22. Describe the estimated rate of water consumption (m<sup>3</sup>/day). Diamond Drilling: 50m<sup>3</sup>/day No more than 100m<sup>3</sup>/day/drill Reverse Circulation Drill: no water required

#### **Waste Water (Grey water, Sewage, Other)**

23. Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring. Bio-degradable drilling fluids will be directed to a properly constructed sump located beside natural depression located beside the drill and at a minimum distance of 31 metres from the ordinary high water mark of any adjacent water body. The



sump natural depression will be either dug out or located in a natural depression. The drill sump will be of sufficient size to allow the suppression and collection of suspended solids and sludge before decanting and percolating into the receiving environment. No waste water will be allowed to flow directly into a nearby water source. 24. If applicable, discuss how surface water and underground water will be managed and monitored. If during drilling operations, any artesian water is encountered, the drill hole will be securely sealed utilizing a down hole plug and cemented to prevent any uncontrolled escape through the drill casing/drill hole to the surrounding environment. Waste Water (Grey water, Sewage, Other) 25. Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant): Sewage A honey bucket collection system will be utilized at the drill, during bulk sample operations and during the mob and demob of material to and from the project site along the overland Cat train trail. Waste will be disposed of at an approved disposal site located in Rankin Inlet. Camp grey water. N/A Combustible solid waste All combustible solid waste material will be sealed in appropriate containers and backhauled to an approved disposal site located in Rankin Inlet. Paper, untreated wood, natural fibres and cardboard may be burned in a vented base burning barrel. Non-combustible solid waste, including bulky items/scrap metal Efforts will be taken to reuse or repurpose any materials before disposal is considered. Material that cannot be recycled on site will be stored in appropriate containers until they can be removed from site for recycling, treatment and/or disposal at an accredited facility. Hazardous waste or oil All hazardous waste will be placed in sealed containers until they can be backhauled for recycling or disposal at an accredited Contaminated soils/snow Any contaminated soil or snow will be cleaned up in accordance with the Kahuna Diamond project's Spill Prevention and Response Plan. All contaminated snow and soil will be placed in 2051 steel drums and stored in a hazardous waste storage area to await backhaul to a registered hazardous waste receiver. Empty barrels/ fuel drums Empty containers will be stored in a designated area and returned to the supplier. Alternatively, drums may be drained, air dried and backhauled to a recycling facility. Any residual fuels drained will be collected into drums and backhauled to a registered hazardous waste receiver. Any other waste produced Waste management operations at the Kahuna Diamond Project comprise a number of activities with the common goal of reducing the amount of waste generated on site and to ensure that any wastes created are re-used, recycled or disposed of in a responsible manner. 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. N/A

## **Fuel**

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 used during the spring and summer operations will be cached in quantities of up to 80120 drums of diesel and 5075 drums of Jet B. Drum capacity is 205 litres. The fuel will be separated into two three fuel cache locations, the coordinates of which are provided in Appendix A: Detailed Project Description and Work Plan. Fuel drums will be stored lying on their sides in an Arctic Grade insta- berm containment facility with bungs oriented at the 3 and 9 o'clock locations and rain drains. All fuel caches will have spill kits supplied and are located at least 31 metres from the normal high water mark of any nearby water body. 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. Arctic Insta-berms (or similar) with rain drains will provide secondary containment. 29. Describe the method of fuel transfer and the method of refuelling. Fuel will be transferred from barrels resting on fuel trays by hand held pump or grounded electric pump directly from fuel drum to helicopter, drill etc. Spill kits and firefighting equipment will be located at each fuel cache site. See Dunnedin's Spill Prevention and Response Plan. Smoking will be prohibited during fuel transfer and within the vicinity of any stored fuel. 30. Describe spill control measures in place. No drilling will be performed, sump created or fuel and/or hazardous chemical storage will be created within 31 metres of the normal high water mark on any surrounding body of water. All hazardous material will be placed in secondary containment. Appropriate spill kits and emergency equipment will be located proximal to any hazardous material. During operations inspection of the storage facilities will be conducted daily. All employees and contractors will receive training in emergency response and spill response as outlined in Dunnedin's Spill Prevention and Response Plan.

## **Chemical and Hazardous Material**

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. Please refer to the MSDS sheets in the Spill Prevention and Response Plan of the supporting documents for types, quantity and uses of hazardous materials used. Storage of these substances will be with the fuel cache within insta-berms described previously. All items will be stored in their original containers. All hazardous material will be transported to site by helicopter or along the winter trail. All containers storing hazardous materials will be inspected for dents, punctures etc prior to being moved from the insta-berm containment facility. Location of fuel cache sites and coordinates are provided in the supporting documentation Appendix A: Detailed Project Description and Work Plan. 32. Describe any secondary containment measures to be employed, including the type of material or system used. Containers will be stored at fuel caches within an Arctic Grade insta-berm containment facility. Spill kits will be placed at each fuel cache. At least one container of equal or greater quantity of the largest container will be placed at each cache in case a transfer is necessary. 33. Describe the method of chemical transfer. All chemical and hazardous materials will be brought to the site in their original containers via overland winter trail or by helicopter. The drill additives will be transferred according to the manufacturer's guidelines. Extreme care will be taken in the transferring of all chemicals/chemical solutions/fuels etc. Funnels will be utilized to direct small quantities of liquid to reduce the potential for spillage. Spill mats will be in place while re-fuelling and spill trays will be placed under 45 gallon drums.

## **Workforce and Human Resources / Socio-Economic Impacts**

Workforce and Human Resources/Socio-Economic Impacts 35. Discuss opportunities for training and employment of local Inuit

beneficiaries. Dunnedin Ventures Inc. will conduct their base of operations from Rankin Inlet and as such, purchases goods and services from local suppliers will be made whenever possible, thereby supporting or creating indirect employment. Dunnedin Ventures hires locally when possible and contractors are encouraged to do the same. Wildlife monitors will be hired from the Aqigiq Hunters and Trappers Organization in Chesterfield Inlet for each field season. 36. Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site. Crews will be mobilized to the site and from site to site by helicopter on a daily basis. The annual work period will run from March to September. As per WCB regulations, no worker will remain onsite for more than 42 days (6 weeks). Cat train operations will occur in early March to initiate the bulk sampling program. 37. Discuss, where relevant, any specific hiring policies for Inuit beneficiaries. N/A Dunnedin and its contractors will hire qualified and available local persons whenever possible. Members of the Aqigiq Hunters and Trappers Organization will be hired as wildlife monitors for each field program to provide advice on wildlife timing, movements and ensure the safety for field crews.

## **Public Involvement / Traditional Knowledge**

Public Involvement/ Traditional Knowledge 38. Indicate which communities, groups, or organizations would be affected by this project proposal. The communities of Chesterfield Inlet and Rankin Inlet as well as the Kivalliq Inuit Association in Chesterfield Inlet, the Hamlet of Chesterfield Inlet, and the Aqigiq Hunters and Trappers Organization. 39. Describe any consultation with interested Parties which has occurred regarding the development of the project proposal. Prior to this permit application the project was considered grass root in nature and only preliminary discussions have been held to date between Dunnedin Ventures Inc. and the Kivalliq Inuit Association. As the project moves forward, representatives of the company would anticipate meeting with representatives from Chesterfield and Rankin Inlet and any other interested parties to inform them of the company's plans for the current year and subsequent programs. Since April 2016 a number of meetings were held in Rankin Inlet and Chesterfield Inlet with invited, interested and available stakeholders. See attached Community Consultation Log. 40. Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns. No public consultations have yet taken place. Please see the attached Community Consultation Log. 41. Describe how traditional knowledge was obtained, and how it has been integrated into the project. Traditional Knowledge has not yet been obtained or integrated into the project and will be sought through consultation meetings with elders from the local communities of Chesterfield and Rankin Inlets. Was obtained through meaningful conversations and information sharing with the Aqigiq Hunters and Trappers Organization, Hamlet Council and Staff, the Kivalliq Inuit Association Director, Community Liaison Officer and Community Lands and Resources Committee Members, in addition to interested community members in Chesterfield Inlet. The information exchange is anticipated to be ongoing through the life of the project and is greatly appreciated by Dunnedin Ventures Inc. 42. Discuss future consultation plans. P.O. Box 1360 Cambridge Bay, NU, X0B 0C0 • PHONE: 867-983-4600 • TOLL FREE: 1-866-233-3033 • FAX: 867-983-2574 Updated July 23, 2010 10 of 33 Community consultations in nearby communities are planned for the spring of 2016 and in future years when the development potential of the mineral resource is more certain. Meetings were held in Chesterfield Inlet and Rankin Inlet beginning in April 2016 with a number of invited stakeholders including the local Members of the Legislative Assembly, Hamlet Councils and Staff, the Kivalliq Inuit Association's staff, Directors, Community Liaison Officers, Community Lands and Resources Committee Members, Hunters and Trappers Organization's Chairs, Managers and Directors as well as interested community members. The meetings were well attended and a good exchange of information took place. It is anticipated that meetings will be held on an ongoing basis both prior to the exploration programs, and post exploration programs for the life of the project. See attached Community Consultation Log.

## **SECTION A: Roads/Trails: Project Information**

### **SECTION A: Roads/Trails: All-Weather Road/Access Trail**

### **SECTION B: Mineral Exploration: Project Information**

The objective of the current project is to explore for economic diamond deposits in the Kivalliq 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). Previous exploration has defined the area to be prospective for diamond occurrences. More detailed exploration work, including diamond drilling, reverse circulation drilling and bulk sampling is justified. The project will be seasonal and results driven. Typically projects like this are intermittent with field seasons finished by early fall but could continue later as weather and results dictate. Depending upon results the same type of work may be carried out in subsequent field seasons under the terms and conditions of applicable permits. The initial location and number of drill holes will be determined after company personnel are able to carry out target area investigations on the ground. Subsequent drilling will depend upon results of initial drilling. Work programs will be between six weeks to several months duration. The precise length and duration of the exploration program will be based on results. There is no alternative to the project or alternate methods of carrying out the proposed work plan. 7. Provide a schedule for all project activities. Field based operations will commence in March/July each year the permit remains in good standing and will extend to September of each year at which time weather and available daylight hours will dictate the seasonal shut down of activities. The Cat Train portion of the program will commence in early March with bulk sample back hauls to Rankin Inlet as long as snow and ice conditions permit safe and environmentally sound overland travel prior to caribou migration and calving season.

### **SECTION B: Mineral Exploration: Exploration Activity**

B-2. Exploration Activity 2. Indicate the type of exploration activity: Bulk Sampling (underground or other) Surface Bulk Sampling Yes Trenching YES Pitting Test pitting, Yes, utilizing hand tools to collect samples from surface and near surface exposures. Test pits to be back filled. Preliminary Delineation drilling Yes Diamond Drilling and/or Reverse Circulation Drilling Exploration drilling Yes Diamond Drilling and/or Reverse Circulation Drilling Geophysical work (indicate ground and/or air) Yes ground Magnetic and

Gravity surveys Other: Prospecting, till and rock sampling, mapping. Soil sampling Yes till sampling On land drilling (indicate drill type) Core drilling (NQ) Diamond and/or Reverse Circulation Drilling On ice drilling (indicate drill type) Diamond and/or Reverse Circulation Drilling Water based drilling (indicate drill type) Overburden removal Yes Explosives transportation and storage Yes

## **SECTION B: Mineral Exploration: Geosciences**

Magnetic yes ground based surveys Gravimetric yes ground based surveys d. Electromagnetic yes, ground based surveys e. Other (specify) 5. Indicate the geological operation type: a. Geological Mapping Yes b. Aerial Photography c. Geotechnical Survey d. Ground Penetrating Survey e. Other (specify) 6. Indicate on a map the boundary subject to air and/or ground geophysical work. See figure 3, Pg 8, Appendix A: Detailed Project Description and Work Plan 7. Provide flight altitudes and locations where flight altitudes will be below 610m. Flights below 610m will only be conducted when safety is an issue arising from weather conditions.

## **SECTION B: Mineral Exploration: Drilling**

B-4. Drilling 8. Provide the number of drill holes and depths (provide estimates and maximums where possible). For 20167, a drill program of approximately 1,000 to 2,500 meters is estimated utilizing one heli-portable diamond drill and/or reverse circulation drill. The average hole depth is expected to be approximately 75 metres up to a maximum proposed depth of 200 metres. 9. Discuss any drill additives to be used. The exact drill additives are not known at this time, however, Dunnedin Ventures Inc will ensure the drill contractor maximizes the use of non toxic biodegradable additives. Dunnedin's Spill Prevention and Response Plan will be updated with appropriate MSDS sheets once any additional additives are determined. Until confirmed, the following additives may potentially be present at the drill site: • Hydraulic fluid Univis N32, N22, N68. • Unirex Lotemp Moly Grease • Epic EP Moly Grease. • Drill Rod Grease • Motor Oil • Hypoid Gear Lubricant • Antifreeze • Poly-Drill O.B.X., 133-X • Marvelube WR2 Grease • Fuel System Treatment See MSDS sheets in Dunnedin's Spill Prevention and Response Plan. 10. Describe method for dealing with drill cuttings. Drill cuttings will be disposed in a properly constructed sump or natural depression located beside the drill and will be no closer than 30 31 metres from the normal high water mark from any nearby water source. The drill sludge including drill cuttings, water and mud will be allowed to settle. The volume of drill waste created for a 100 metre hole is estimated to be only 0.14m<sup>3</sup>. 11. Describe method for dealing with drill water. Drill water will be collected in a hand dug collection sump or natural depression located beside the drill. The collection sump is located no closer than 30 31 metres from the normal high water mark of any surrounding water body, where direct flow into a water body is not possible and no additional impacts are created. All artesian drill holes will be documented, plugged and cemented in bedrock to prevent continued flow. 12. Describe how drill equipment will be mobilized. The drill, drilling equipment and accessories will be mobilized to the project site by either cat train winter trail or rotary aircraft (helicopter) from Rankin Inlet, a distance of approximately 54 kilometers. 13. Describe how drill holes will be abandoned. Refer to Dunnedin's Appendix C: Abandonment and Restoration Plans. All drill cuttings, water return and sludge will be disposed of in a properly constructed sump natural depression located beside the drill no closer than 30 3 1 metres from the normal high water mark of any surrounding water body. All casing will be pulled out or cut off at or below ground level. Any holes with artesian flow will be documented, plugged and cemented in bedrock. 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

## **SECTION B: Mineral Exploration: Stripping / Trenching / Pit Excavation**

B-5. Stripping/ Trenching/ Pit Excavation 15. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other) Any test pit excavations to be conducted will be completed using hand tools. For Bulk Sample collection techniques refer to Dunnedin's Appendix A: Detailed Project Description and Work Plan. Two types of extraction methods will be utilized. Test pits will be excavated by hand and bulk sample pits will be excavated by an excavator. For the bulk sample sites, once on site, the first stage of the excavation will involve the removal of the snow cover by excavator. An air drill will be required on site to initially drill a series of vertical holes to determine the depth of the overburden overlying the kimberlite intrusive. This will be accomplished by inspecting the drill cuttings. Once depth is determined, the air track will drill a series of holes through the frozen overburden to the bedrock contact and lightly loaded with explosives. Once blasted, the overburden will then be removed and stockpiled as previously described. The next step will require the air track drill to establish a series of blast holes to liberate the frozen kimberlite from the bounding wall rock and to fragment the kimberlite into a manageable size for shipment. The air track drill will establish blast holes in the kimberlite to a sufficient depth along the exposed strike length to liberate up to 500 tonnes of sample once blasted. No water is required for the air track drill as it operates by compressed air. Blast mats will be used to minimize fly rock and contain the rock to the blast area. 16. Describe expected dimensions of excavation(s) including depth(s). For test pit excavations using hand tools the expected dimension of any excavation will be up to 2X3 metres by 1 metre deep. Please refer to the Bulk Sampling program described in Appendix A; Detailed Project Description and Work Plan. Bulk sample pits will be up to 2-3 metres wide, to a length varying from 15 to 30 metres and to depths of 2-3 metres. 17. Indicate the locations on a map. See attached figures Appendix A: Detailed Project Description and Work Plan. 18. Discuss the expected volume material to be removed. Hand dug test pits could extract up to 6m<sup>3</sup> 2.1 tonnes of material per pit. The Bulk sampling program may generate between 50 to 500 tonnes of kimberlite/site. 19. Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results. Rare negligible sulphide species present with kimberlite material, kimberlite is strongly calcareous. No ARD is anticipated as kimberlite is naturally acid neutralized and cannot generate acid.

## **SECTION B: Mineral Exploration: Underground Activities**

n/a

## **SECTION B: Mineral Exploration: Waste Rock Storage and Tailings Disposal**

n/a

## **SECTION B: Mineral Exploration: Stockpiles**

n/a

## **SECTION B: Mineral Exploration: Mine Development Activities**

n/a

## **SECTION B: Mineral Exploration: Geology and Mineralogy**

N/A

## **SECTION B: Mineral Exploration: Mine**

N/A

## **SECTION B: Mineral Exploration: Mill**

N/A

## **Description of Existing Environment: Physical Environment**

The Kahuna Diamond Project is located within the Maguse River Upland Ecoregion within the Southern Arctic Ecozone. This ecoregion is an area that is often referred to as the “barren lands.” This name reflects the largely treeless nature of the Ecozone as most of it lies to the north of the tree line. Glaciation released a huge volume of soil and rocks debris creating a bouldery moraine and long sinuous eskers which may extend up to 100km. Occurring less frequently are outwash aprons of crudely sorted sand and gravel and raised beaches along pre-existing shorelines. The resulting undulating terrain is studded with abundant interconnected lakes and ponds. Local relief varies between 80 and 240 metres above sea level. Permafrost occurs continuously throughout the Southern Arctic Ecozone. Lying sometimes just a few centimeters below the surface, permafrost acts as a dam that stops the downward flow of water. Even though there is little precipitation, the soils are often waterlogged or frozen. Repeated freezing and thawing of these soils create surface features such as cell like polygons, bulging hummocks and bare mud boils where the soil is so active that no plants can take root. Intense frost heaving often splits apart the underlying bedrock and forces large angular boulders to the surface. Occasionally emerging through the thick mantle of glacial till is the Canadian Shield. The current limits of the Kahuna claim group lie almost exclusively within the west trending metasedimentary paragneiss belt consisting of metasedimentary rocks including semipelite/psammite with garnet + biotite +/- aluminosilicate schist/paragneiss and the weakly to well foliated, biotite-muscovite Leucogranite unit made up of biotite-muscovite Leucogranite, in part contains xenocrystic garnet and includes layered tonalite gneiss and garnet-kyanite-sillimanite schist paragneiss. Water, soil and air quality remain in a pristine state, affected only by global factors. There are no national, territorial or wildlife parks or sanctuaries within or closely bounding the boundaries of the Kahuna Diamond project. Of special interest to the communities of Chesterfield Inlet and Rankin inlet is the Char bearing habitat of Josephine Lake located in the northeast quadrant of the Kahuna claim group. Josephine Lake is the only lake within the claim group which is deep enough to supply fresh water during the winter months and is one of only a few lakes within the claim group that does not freeze to bottom. Although this area is typically characterized by long, cold winters and continuous permafrost, climate change is rapidly altering the arctic environment. In the future climate in the north will likely could continue to trend towards warmer temperatures and absence decrease of summer ice.

## **Description of Existing Environment: Biological Environment**

Biological Environment Vegetation within the Southern Arctic Ecozone is adapted to short, cold growing seasons; high persistent winds and acidic soils over permafrost. The Ecozone is bounded to the south by the tree line, a broad ecological division between the taiga forest and the treeless arctic tundra. Low precipitation and extremely low winter temperatures are among the factors that discourage tree growth. The near continuous blowing of cold, dry winds and the presence of permafrost also restricts plant growth. Low shrubs such as the Shrub Birch, Willow and Labrador Tea are well adapted to these conditions. On the most exposed sites, low shrubs give way to mats of lichens, mosses, and ground-hugging shrubs such as Mountain Cranberry and Least Willow. Low biological productivity, a short growing season, and extremely cold long winters are demanding on wildlife so those found in the area are well adapted to arctic living. Wildlife includes Muskox, Caribou, Wolf, Barren Land Grizzly Bear, Polar Bear (Coastal Regions), Arctic Fox, Wolverine, Arctic Ground Squirrel and Brown Lemming. The Kahuna project is within range of the Beverly and Qamaniruaq Caribou and Lorillard herds but is not within their traditional calving grounds. According to Key Migratory Bird Terrestrial Habitat Sites in the Northwest Territories and Nunavut (2008), published by the Canadian Wildlife Service, there are no critical migratory paths or nesting areas within the Kahuna project area. Freshwater aquatic species common to the Kivalliq Region of Nunavut include Arctic Char, Lake Trout and Arctic Grayling. The network of lakes and rivers provide abundant habitat for fish. The Species at Risk Act protects certain listed mammals, reptiles, amphibians, molluscs and plants on federal lands and certain listed birds

and fish on all lands of Canada. Species that are legally protected under SARA are those listed as endangered or Threatened and are listed in Schedule 1 of the act.

### **Description of Existing Environment: Socioeconomic Environment**

The centre of the Kahuna Diamond project is located 54 kilometers to the northeast of Rankin Inlet and 37 kilometers to the southwest of Chesterfield Inlet. There are no roads in the project area, minimizing the potential for local or regional traffic except during the winter months. Transportation in remote areas such as the Kahuna Project area is conducted by fixed wing or helicopter access and during the winter months by skidoo. The remote location of the property minimizes current land and resource use. It is possible that subsistence harvesting and trapping occurs in the area. Tourism and guiding are not known to be present. Local employment opportunities are generally with the Government of Nunavut, local Hamlets, the Northern Store, the Co-op as well as with Agnico Eagle's Meadowbank gold mine near Baker Lake and their Meliadine project near Rankin Inlet. No human health factors are known for this region. There are no known archaeological sites within the confines of the property boundary. Dunnedin Ventures contracted Golder and Associates to conduct a preliminary archaeological assessment for the purpose of identification, avoidance and planning purposes, including the winter trail route and is aware of the culturally significant arctic char fish habitat located at Josephine Lake utilized by the communities of Chesterfield Inlet and Rankin Inlet. Dunnedin will not be establishing a remote camp on site as operations at this time and will be conducted from the community of Rankin Inlet. In doing so, Dunnedin will be supporting the local economy by utilizing local businesses for goods and services and utilizing local labour to assist in the company's exploration efforts where possible.

### **Identification of Impacts and Proposed Mitigation Measures**

The activities listed under Construction in Table 1 will be short lived and localized therefore noise levels of mobilizing equipment to the site, fuel cache emplacement and fuel extraction are the only aspects that are non-mitigatable. The operational activities are all considered mitigatable as they will have no or very little impact to the environment and local wildlife. Non evasive activities include mapping, prospecting, till sampling and ground geophysics, test pit sampling. The drilling component will be short lived as the drill will only be on each drill site for 3 to 6 days and all sites will be restored as near as possible to their original state. Noise levels of the diamond drill, water pump, helicopter and proposed cat train winter trail and bulk sampling program will be the only activities that will be non-mitigatable. Dunnedin believes by utilizing a winter cat train to mobilize fuel and equipment to site, that there will be less impact to the environment and wildlife during a timewhen the ground is frozen and lakes and streams are covered by ice well before the caribou calving season and arrival of migratory fowl. 3. Discuss potential socioeconomic impacts, including human health. Dunnedin will not be establishing a remote camp on site at this time as operations will be conducted from the community of Rankin Inlet. In doing so, Dunnedin will be supporting the local economy by utilizing local businesses for goods and services and utilizing local labour to assist in the company's exploration efforts where possible. A strict "no drugs or alcohol" policy will be enforced and all efforts will be made to hire local employees with knowledge and experience on the land and with the mineral exploration industry. Dunnedin maintains a current Emergency Response Plan including a Spill Prevention and Response Plan that all employees and contractors are required to adhere to. 4. Discuss potential for transboundary effects related to the project. N/A 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. Please see the attached document Appendix D: Environment and Wildlife Management Plan. All efforts will be made to avoid ALL wildlife contact. 6. Discuss proposed measures to mitigate all identified negative impacts. All of the potential environmental effects associated with this project are minor localized effects which can be mitigated. No significant residual impacts are expected to occur as a result of the implementation of this program. Dunnedin Ventures Inc. is committed to implementing the proposed programs on the Kahuna Diamond project in an environmentally responsible manner to protect and sustain the environment and cultural resources of the project area. Water usage at the Kahuna project will be minimal as the proposed drill program is the only activity requiring the use of water at a rate of 50m<sup>3</sup>/day 100m<sup>3</sup> day/drill. Drilling operations will be conducted in a safe and environmentally friendly manner. Fuel caches will be established to support the bulk sampling and diamond drilling programs utilizing portable Arctic Grade insta-berms for fuel barrel storage and checked on a daily basis for any potential leakage. The total estimated footprint of surface disturbance resulting from the diamond drilling program is estimated to be less than 0.7ha/year. Drill cuttings from the drilling operation will be directed to a hand dug sump or natural depression located at least 30 31 metres from the normal high water mark of any surrounding water body. It is estimated that a 100m drill hole will generate a minimal amount of drill cuttings of approximately 0.14m<sup>3</sup>. The bulk sampling program will be initiated in early March with the mobilization of fuel and bulk sampling equipment. The timing of the program will minimize surface disturbance while ground conditions are frozen. A winter program will prevent the slumping and sloughing of sidewall material into the excavation as well as the ponding and inflow of water. The kimberlite bodies targeted for the bulk sampling program lie approximately 2m below surface and vary up to 2 metres in width. The surface disturbance generated per site from the bulk sampling program will vary from 0.03ha to a maximum of 0.15ha in size. The separation of topsoil and surface organics, sand and gravel and bedrock into separate temporary stockpiles beside the excavation will allow the replacement of the rock and overburden in reverse order such that the surface can be re-contoured with replaced organics and topsoil. The benefit of a winter bulk sampling program and the utilization of a cat train w i n t e r a i l to mobilize fuel and equipment to site is that its timing is such that it will not conflict with any migrating or calving caribou and is well in advance of bird migration and nesting. The route will utilize frozen water bodies as much as possible along route to minimize travel over the frozen and snow covered tundra. Aquatic species will not be harmed as a minimum of 5 feet of ice is required for safe ice travel. The only negative aspect of these programs which cannot be mitigated would be the sound from the heavy equipment which at this time of year would have no effect on nesting fowl or calving caribou. Helicopter support will be utilized for the proposed drill and bulk sampling programs. The use of helicopters to support diamond drill programs has been the standard practice of exploration companies now and in the past with no minimal impact to wildlife or the environment. Pilots will be instructed to avoid wildlife during operations All garbage, fuel drums and equipment will be removed from each work site at its completion. Photographs will document each of the operations before, during and after completion; GPS recordings will document the size and location of each work site. The water protection measures set aside by the governing bodies of the KIA, AANDC and NWB clearly outline procedures to be followed during drilling and bulk sampling operations, emplacement of collection sumps and the

establishment of fuel cache sites. Additional mitigating measures will be conducted at the Kahuna Diamond project to reduce, control or eliminate potential environmental effects by:

- Following the Caribou protection measures, specifically not working in any core calving areas.
- Using only lake water for drilling operations.
- Following the recommended environmentally acceptable minimum flight restrictions.
- Avoiding low level flights over areas of nesting waterfowl to a minimum altitude of 610m above ground level.
- If artesian flow is encountered, drill holes are to be plugged and permanently sealed.
- All trench, pits and sumps will be backfilled and re-contoured at the completion of the operation.
- Only environmentally acceptable and approved muds and additives will be used during drilling operations.
- Fuel caches will be located a minimum distance of 30 31 metres from the normal high water mark of any surrounding water body.
- Spill kits will be present while transporting fuel and equipment along the overland trail, at all fuel cache sites and at each operating drill and bulk sample site.
- Provide necessary controls to prevent sedimentation of water bodies and erosion of adjacent land.
- Equip all intake water hoses with the appropriate measures to prevent fish entrapment.
- All drill cuttings will be directed to and contained within either a natural depression or hand dug drill sump located beside the drill which is at least 30 3 1 metres from the normal high water mark of any surrounding water body. No drill cuttings or return drill water will be allowed to directly enter any body of water.
- Any archeological sites encountered will not be disturbed. If a previously unknown site is encountered during operations, work will cease, a 30m buffer zone around the site will be established, the site photographed and its location recorded and reported to the Department of Culture, Language, Elders and Youth and Heritage.
- Dunnedin Ventures maintains a current Emergency Response Plan, Abandonment and Restoration Plan, Environment and Wildlife Management Plan and a Spill Prevention and Response Plan that all employees and contractors are required to follow. An orientation program will be provided for all employees and contractors prior to starting work including the terms and conditions of licences and permits.

## **Cumulative Effects**

All potential environmental effects associated with this project are considered minor, localized effects that can be mitigated. No significant residual impacts to the environment are expected to occur as a result of the implementation of this program. While individually no significant effects are anticipated, consideration should be made to the combination of all existing or planned activities within the vicinity of the project area. Some cumulative effects can be positive, such as the establishment of diamond mines in the NWT Agnico Eagle's Meadowbank gold mine in the Kivalliq Region, more residences are finishing high school and earning higher wages. Other positive cumulative effects can be an increase in the employment rate, infrastructure and potential for investment in local communities by government. Cumulative effects may also be negative and attention should be given to the potential for these to occur in advance of project growth. Cumulative effects on the land might include changes to the number of wildlife, increases in non-native plant species or the melting of permafrost. Currently, the Kahuna diamond project is in the early stages of exploration. Any effects of this proposed program on the local or regional environment will be both negligible and mitigable. Any cumulative effects at this stage will also be minor or negligible.

IMPACTS

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

CONSTRUCTION																							
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-
OPERATION																							
Mineral Exploration		-	-	-	-	M	-	-	M	M	-	-	M		M	M	M	-	-		P	-	-
DECOMMISSIONING																							
Mineral Exploration		-	-	-	-	P	-	-	P	P	-	-	P		P	P	P	-	-		-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)