

## APPENDIX D

### ENVIRONMENT & WILDLIFE MANAGEMENT PLAN

**Kahuna Diamond Project**

**Dunedin Ventures Inc.**

**November 2015**

**MODIFIED October 2016**

Appendix D Environment and Wildlife Monitoring Plan	Section 1.1	Exploration internal environmental policy	Emphasized orientation	Oct 13, 2016
Appendix D Environment and Wildlife Monitoring Plan	Section 2.1	General	Provided information on commitment to hire Aqigiq HTO members annually as wildlife monitors	Oct 13, 2016
Appendix D Environment and Wildlife Monitoring Plan	Section 2.2	Authorizations	Minor modifications/clarification, added additional regulatory instruments	Oct 13, 2016
Appendix D Environment and Wildlife Monitoring Plan	Section 3.1	Wildlife	Modification, clarification and reinforcement of commitments	Oct 13, 2016

## 1.1 EXPLORATION INTERNAL ENVIRONMENTAL POLICY

Dunedin Ventures Inc. is committed to the protection of the environment during its exploration activities, through the application of the following principles.

- Deal proactively with environmental issues by identifying potential impacts and implementing preventative actions, measures to mitigate and effective contingency plans.
- Strictly adhere to and comply with all applicable environmental legislation and regulations and the Terms and Conditions of the Licences and Permits.
- Identify and evaluate all environmental aspects and possible impacts of exploration activities, and develop procedures for minimizing, as much as is reasonably achievable, the environmental impacts while carrying out these activities.
- Facilitate clear and effective communication of Dunedin's environmental requirements to employees and contractors to encourage their participation and compliance.
- Provide effective training **including orientation of terms and conditions of all licenses and permits**, conduct internal assessment/inspections and periodically review procedures during weekly meetings.

## 2.1 GENERAL

Environmental protection ultimately rests with the company having authorization from the environmental agencies to conduct exploration activities. Environmental awareness and a good knowledge of environmental protection measures help to avoid or reduce adverse exploration impacts. Front line field personnel and contractors must know and follow the applicable work conditions established by the environmental regulatory agencies.

**Prior to annual exploration activities, representatives from the Hamlet of Chesterfield Inlet, the KIA and the Aqigiq Hunters and Trappers Organization (HTO) will be invited to accompany Dunnedin personnel to the proposed exploration sites. Advice will be sought as to timing of activities, wildlife movements and suggested avoidance measures. In addition, Dunnedin has committed to the Aqigiq HTO to contract wildlife monitors to accompany annual field crews for the purpose of monitoring wildlife, providing advice on avoidance and to ensure the safety of field crews.**

Dunnedin Ventures Inc. expects all personnel and contractors operating on its behalf will recognize and respect the rights of other land users.

Dunnedin Ventures through its permits and licences requires:

- That all personnel, contractors, consultants and visitors to the project area respect the land, the waters and the local wildlife.
- The rules, regulations, terms and conditions of the applicable laws, licences and permits are to be strictly adhered to.
- The use of environmentally friendly agents where readily available, and discourages the use of non-environmentally friendly products except where absolutely necessary (i.e. no efficient alternative exists, safety/health considerations etc.)
- All garbage and litter to be removed from all field sites **(including cigarette butts)**.
- Practicing preventive maintenance activities will reduce the likelihood of failure resulting in an environmental impact.

## 2.2 Authorizations

Dunnedin Ventures Inc. must apply and comply with the terms **and conditions** of a number of authorizations in order to conduct exploration activities as follows:

- AANDC (Aboriginal Affairs and Northern Development Canada) – Land Use Permit (LUP). This permit allows Dunnedin to conduct approved activities on those portions of Crown Land that falls within the companies claim boundaries. Dunnedin currently holds a Class A Land Use Permit (N2015C0019) for the purpose of completing prospecting, till and rock sampling. Dunnedin Ventures ~~is submitting a request for an extension and~~ **has applied for**

an amendment to its permit to include diamond **and reverse circulation** drilling, trenching, ground geophysical surveys, bulk sampling and the establishment of an overland winter trail.

- KIA (Kivalliq Inuit Association) – Land Use Licence (LUP). Dunnedin currently holds a Class 1 Land Use Licence ((KVL115B02) for the purpose of prospecting and preliminary exploration work. The Land Use Licence allows Dunnedin Ventures to conduct approved activities on Inuit Owned Lands (IOL), more specifically Surface Land Only Parcel CI-15. Dunnedin ~~is submitting~~ **has applied** to the KIA an application for a Class 3 Land use permit to complete diamond drilling, trenching, ground geophysical surveys, bulk sampling and the establishment of an overland winter trail.
- NWB (Nunavut Water Board) – Water Licence. Dunnedin Ventures is submitting to the NWB an application for a **Class B** Water Use Licence for the use of water during diamond drilling operations and the subsequent collection of waste water from the drilling operations in an approved drill sump.

Dunnedin Ventures Inc. is bound by the terms and conditions set out in the each of the licences and permits while conducting any of its permitted exploration activities. In addition, there are a number of Acts, Regulations, Guidelines and Recommendations the company must also follow which includes (but are not limited to):

- Fisheries Act
- **Caribou and Muskox Protection Measures included in Appendix H of the Keewatin Land Use Plan**
- **Migratory Birds Convention Act and Migratory Birds Regulations**
- **Nunavut Act**
- **Aeronautics Act**
- **Fisheries and Oceans Canada (DFO) Guidelines for the use of Explosives in or near Canadian Fisheries Waters**
- **Nunavut Archaeological and Paleontological Sites Regulations**
- Department of Fisheries and Oceans Operational Statements and Guidelines.
- Nunavut Waters and Nunavut Surface Rights Tribunal Act.
- Territorial Lands Act and Land Use Regulations
- Nunavut Land Claims Agreement
- Environmental Protection Act and Canadian Environmental Protection Act
- Nunavut Wildlife Act and Species at Risk Act
- Guide to Spill Contingency Planning and Reporting.
- Transport Canada-Transportation of Dangerous Goods Act
- Public Health Act
- CCME Canada-wide Standards for Dioxins and Furans.

### 3.1 WILDLIFE

Dunnedin acknowledges that exploration programs have the potential to temporarily impact wildlife and wildlife habitat, and thus commits to adhere to monitoring and mitigation strategies as well as legislated avoidance. All terms and conditions of licences and permits will be strictly adhered to including the recommendations in the Caribou Protection Measures.

Potential impacts to wildlife and wildlife habitat include displacement/avoidance from habitat, habituation/attraction to personnel and/or unintentional interactions/disturbance. It is recognized that the Lorillard and Quaminariaq herds are particular sensitivity in the regional project area; Dunnedin will work with stakeholders to develop strategies to minimize potential negative effects through a focused monitoring and mitigation measures.

This plan has been designed to address specific wildlife species (inclusive of caribou), species group and their critical habitats. Selected species, species groups and their critical habitats that are the focus of this Plan are;

- Those that occur within and immediately adjacent to the project site or along project flight paths during project operations,
- Those that are important harvestable species, and
- Those with special conservation Status.

The species or species groups of most concern are provided in Table 1:

Species or Species Group	Species or Species Group
Barren-ground caribou - specifically, Beverly, Quaminariaq and Lorillard herds	Waterfowl and Waterbirds (and their nests)
Muskox	Peregrine Falcon (and their nests)
Arctic fox (and their dens)	Other Raptors (and their nests)
Wolf (and their dens)	
Grizzly Bear (and their dens)	
Wolverine (and their dens)	
Polar Bear	

**Approaching and feeding wildlife is strictly prohibited.** Dunnedin Ventures Inc. understands the impacts to wildlife through human interaction including harassment and disturbance and will insure its contractors and employees follow the terms and conditions as set out by the regulatory authorities. ~~Immediate and appropriate measures will be taken by the company to reprimand any individual(s) involved in any such activities.~~ **There are absolutely no exceptions to this rule.**

If wildlife are present in the area, all employees and contractors are to avoid any contact with wildlife.

Harassment and disturbance of wildlife is prohibited. If any employees and contractors are approaching a work site where migrating caribou, caribou cows and calves, muskoxen nurse groups or other wildlife are in the area, this work site will be avoided until the animals have moved on a distance of 2-5 km from the site.

If employees and/or contractors encounter wildlife at any time, every effort should be made to stay out of sight of wildlife or redirect travel away from wildlife where possible, to avoid impact to the wildlife.

**Sightings of wildlife are to be recorded.** This is a condition for conducting exploration activities in the Kivalliq Region of Nunavut. This information is compiled and submitted to all regulatory agencies in the company's annual reports.

**Firearms may be carried for safety reasons,** but only if such firearms are properly registered and stored in accordance with applicable legislation **and will only be used by individuals with current permits.** All firearm discharges must be documented and reported immediately to the Project Manager.

**Hunting of wildlife, while conducting business on behalf of Dunnedin Ventures Inc., is strictly prohibited by all Dunnedin employees, contractors and consultants.**

**Low level aircraft and helicopter flights must make every efforts to avoid areas which are crucial nesting and denning habitats.** ~~Helicopters will not land in any area where wildlife are present unless under an emergency situation. Should an emergency arise, the event will be documented and reported to the appropriate agency.~~ **In areas where migrating caribou, caribou cows and calves, muskoxen nurse groups or other wildlife are presents, there will be no landings unless under an emergency situation. Helicopters will not land in any area where wildlife are present unless under an emergency situation. In the event of bad weather or an emergency, when low level flights are required, these instanced will be recorded and reported to the Kivalliq Inuit Association.**

**Flight altitudes must be strictly observed and recorded. Unless there is a specific requirement for low level flights, fixed wing aircraft and helicopters will maintain a minimum altitude of 610 meters above ground level in places where there are migrating caribou, caribou cows and calves, muskoxen nurse groups and other wildlife. In areas where there are colonies of birds observed, the flight levels will be restricted to a vertical distance of 1000 metres and a horizontal distance of 1500 metres from birds.**

**Helicopter pilots will be instructed that they are not to fly over wildlife in a way to cause them to change behavior, run or flee at any time, within or outside of migration. If such an interaction**

should occur incidentally, helicopter pilots will be instructed to divert and/or change altitude as quickly as safely practicable.

**Nuisance wildlife is to be reported immediately.** Proper food storage, the handling of food waste and removal from the field will mitigate wildlife encounters.

**The Kahuna Diamond project is within range of the Qamanirjuaq and Lorillard Caribou Herds** and special considerations are required so as to avoid disturbance of migrating and calving herds. Dunnedin Ventures will cease activities when caribou are present and will not resume activities until the caribou have safely moved out of the area. **Wildlife monitors from the Aqigiq HTO will be contracted annually to accompany Dunnedin field personnel at all times for the purpose of monitoring for wildlife and provide advice on avoidance and mitigation as well as to ensure the safety of the field crews.** This includes the **Activities such as** driving of snowmobiles and ATV's, drilling, mapping, prospecting, blasting and overflights by aircraft at any altitude of less than ~~300~~ **610** m e t e r s above ground level, **will not be conducted when caribou are present.** No drilling will be conducted within 5km of a designated caribou crossing.

**All human-bear interactions are to be reported immediately** to the project manager, who will then contact the KIA, The government of Nunavut-Department of Environment, Environment Canada, HTO's and the Government of Nunavut Wildlife Biologist **and the Aqigiq HTO.**

A copy of the Bear Safety material will be available on site and at the offices of Dunnedin Ventures Inc. **All employees and contractors will receive Bear Safety Training. Bear safety information and material will be kept in a binder on site. The Government of Nunavut published the "Bear Safe in Nunavut". This document will be referred to in the safety orientation that all personnel, contractors and consultants receive when they arrive at site. A copy of the manual will be kept at the site headquarters and in the Vancouver head office (<http://www.gov.nu.ca/environment/information/resources>).** If bears are present in the area, work will cease until the bears have safely moved out of the area.

**Breeding birds are not to be disturbed.**

**No eggs or nests are to be disturbed by any activities.** If an employee or contractor comes across any active nests, they are to cease all activities immediately to ensure that the nest is not disturbed. Coordinates are to be recorded on the wildlife sighting sheets. Work will not resume until the nest is no longer occupied. Moving or disturbing the nest of a migratory bird is in contravention of the *Migratory Birds Convention Act.*

**The Peregrine Falcon has been identified as a species of Special Concern by COSEWIC. If any nests are found, a buffer must be maintained. A 1.5 km buffer is recommended for the Peregrine Falcon. Any nests discovered will be recorded and the GPS coordinates provided to the KIA, Government of Nunavut Department of Environment and the Aqigiq HTO.**

**Den sites will be avoided.** All denning sites are to be avoided. If a den site is located, its UTM coordinates are to be recorded so that the den site can be avoided. The coordinates are forwarded to the appropriate regulatory authorities. Any exploration activities will cease immediately

The following buffers are provided (by the Government of the Northwest Territories) for active dens between the den and all exploration activities between May 1 and July 15.

- Wolves            800m buffer
- Grizzly Bear    300m buffer
- Wolverine       2km buffer
- Fox                150m buffer

**Species at Risk.** Environment Canada and COSEWIC has indicated that there may be Species at Risk within the Kahuna Diamond project. A list of the species at risk in Nunavut can be found in Schedule 1 of SARA (Species at Risk Act). The SARA registry can be found at [www.sararegistry.gc.ca](http://www.sararegistry.gc.ca). Schedules of SARA are amended on a regular basis so it is important to periodically check the registry for updates. If any of the listed species are sighted on the Kahuna Diamond project, the information will be recorded.

**Bear incidents and/or interactions, and wolf or fox den sighting will be reported immediately to: Bear sightings/incidents and larger herd sightings will be reported to:**

Vicki Sahanatien, GN Wildlife Deterrent Specialist <a href="mailto:Vsahanatien@gov.nu.ca">Vsahanatien@gov.nu.ca</a>	867-934-2191
Environment Canada	
Craig Bearsall, KIA Environmental Technician, <a href="mailto:cbearsall@kivalliqinuit.ca">cbearsall@kivalliqinuit.ca</a>	867-645-5754
Aqigiq HTO	867-898-9063

**The predicted impacts to wildlife due to the presence of the Kahuna Diamond project include:**

- **Attracting wildlife,**
- **Habitat disturbance**
- **Unintentional disturbances**

Wildlife can be naturally inquisitive and some species are attracted to areas that are occupied by humans due primarily by scents and smells. Dunnedin will discourage this by minimizing all waste and the proper storage of these attractants until such time they will be removed from the site. At no time will it be permitted by any personnel, contractors or consultants to feed or to use food

products to entice wildlife closer to activities. All active work sites will be kept clean of all food waste and will be properly stored in sealed containers.

Habitat disturbance during exploration programs are temporary. Dunnedin will act proactively to complete site reclamation and remediation immediately following the completion of the work ie at drill sites, bulk sample sites etc. Habitat disturbance on the Kahuna Diamond project will result to some extent from diamond drilling and bulk sample activities. The effects of habitat disturbance at drill sites are very temporary and in most cases it would be unlikely that an individual would be able to locate the previous season's drill collar or sump.

Despite best efforts and practices, unintentional disturbances can occur. As an example, every effort will be made to avoid nest and den sites. However, should a field crew happen upon nests or dens, the coordinates will be recorded and the crew will immediately vacate the area. These areas will be avoided until they are no longer being inhabited. These encounters will be immediately reported to the Government of Nunavut and the Kivalliq Inuit Association. All unintentional disturbances, no matter what the nature, will be reported immediately and will be documented in the annual report.

**Monitoring** is an important component to the exploration program. Exploration is dynamic and continually changing. Every field season is unique, exploration activities are conducted in different areas from year to year. All drill sites and field crews will have wildlife sighting sheets used to document the species sighted, date, time of sighting, GPS location, number of species and activities. These locations will be provided each year as part of the Work Plan that is submitted annually by January 31.

#### **4.0 AQUATIC LIFE**

Work in and around water bodies must be done in such a manner as to not disturb any aquatic habitat or life.

**Fishing while conducting business on behalf of Dunnedin Ventures Inc is strictly forbidden.**

**The drill foreman is responsible for ensuring safe working conditions at the drill site which includes measuring ice thickness before moving heavy equipment across the ice or drilling from the ice surface.**

**Waterlines must be properly placed and screened** in accordance with the "Freshwater Intake End-of-Pipe Screen Guideline" (DFO).

**No waste is to enter any body of water.**

**All sumps, fuel caches and camps must be located at least 31 meters from the high water mark** of any body of water unless otherwise approved by the appropriate regulatory authority.



## 5.0 Archaeology

**No work will occur in any area where a known archeological site has been located.** If any employee or consultant finds an archeological site, work must cease immediately, the GPS coordinates are recorded and the finding is reported immediately to the Project Manager who in turn will report its location to the Government of Nunavut, Aboriginal Affairs and Northern Development Canada and the Kivalliq Inuit Association. Handling of any archeological artifact is strictly prohibited.

## 6.1 Internal Inspections

Internal inspections are to be completed by the project manager or it's designate on a monthly basis. In addition to this, daily inspections of the individual work, storage and staging areas allows for a timely response to potential impacts affecting the surrounding environment. All employees and contractors are responsible for maintaining a clean and safe workplace.

Some points to consider from a Land Use Inspector or a community visitors point of view:

When flying to the work site.

- Is there any garbage lying around?
- Has any garbage flown away and can be seen lying on the Tundra? ➤ Are items stored in a neat and tidy manner?

Drips and Leaks

- While walking around the work sites, keep aware of potential sites for leaks or drips.
- In areas of potential leaks, place a drip pan or a collection device underneath the area.
- In areas where potential leaks and drips may occur, keep absorbent pads easily accessible.
- Report all leaks and drips to the Project Manager.

Fuel Storage areas

- Make sure that the fuel drums are stored according to code and best practices. ➤ Keep the fuel storage site tidy and neat.
- Visually inspect the fuel storage area on a regular basis to ensure there are no leaking or damaged drums and that all barrels are stored in the 3:00 and 9:00 o'clock position.