Jericho Diamond Mine

Wildlife Monitoring and Mitigation Plan

Submitted to the Nunavut Impact Review Board

March 4, 2005

Submitted by:

Tahera Diamond Corporation

On behalf of

Benachee Resources Inc.

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1.0 INTRODUCTION

Tahera Diamond Corporation (Tahera) on behalf of Benachee Resources Inc. (a wholly owned subsidiary of Tahera Diamond Corporation) plans to commence mining at its Carat Lake site 30 km north of the Lupin Gold Mine in Nunavut in 2006. Mobilization of material and construction is planned to occur throughout 2005. The complete transition from the construction phase to full-scale operations is expected in the first quarter of 2006.

This document is intended to provide information regarding wildlife monitoring and mitigation for the planned mining operation. The current mine plan is based on environmental baseline studies/designs and experience gained by our personnel or contractors at the Jericho site and other northern diamond mining operations.

The current plan is based upon open pit mining methods and underground mining later in the mine life. A final decision regarding underground mining will be required to be made during the operational phase. The contractor for the earthworks and mining is Nuna Logistics; a majority owned Inuit Company with experience at other northern diamond mines.

See the Property Location figure.

2. Location and General Mine Plan

Tahera Diamond Corporation has actively explored for diamonds in Nunavut for the past seven years (prior to 1999 as its predecessor company, Lytton Minerals). The development would take place in the "Barren Lands", a tundra environment north of the tree-line and about 60km south of the Arctic Circle within the zone of continuous permafrost. Unlike the Lac De Gras kimberlites, the Jericho kimberlite pipe is land-based in permafrost.

2.1 Property Location

The Jericho Project is located approximately 420 km northeast of the city of Yellowknife, 200 km southeast of Kugluktuk, and 350 km south of Ikaluktutiak (Cambridge Bay) Nunavut. The site is accessible by air 12 months of the year and by winter road from January to April.

The coordinates of the mine site are 65^{o} 59' 50" N Latitude, 111^{o} 28' 30" W Longitude. All property work is based on the National Topographic Survey NAD83 survey datum.

Tahera's subsidiary Benachee Resources Inc. is the registered holder of the property and has mineral tenure on the property held with Indian and Northern Affairs Canada (INAC). The Company has a water license held with the Nunavut Water Board, and land leases

with INAC who are the administrator of the crown lands and leases with the Kitikmeot Inuit Association for Inuit Owned surface rights.

2.2 Climate

There are 26 years of regional climate data from Environment Canada weather stations at Lupin Mine / Contwoyto Lake. Tahera has supplemented this information by collecting site-specific data for five years. Mean Annual Runoff (MAR) for the site is 190mm per annum with Total Annual Precipitation at 246mm. Evaporation rates are similar to those seen at Ekati or Diavik.

Air temperatures range from about +20^{o}C during the summer to -30^{o}C in the winter months. The mean annual temperature is -11.8^{o} C. Wind direction and speeds are variable but tend to favour a NE-SW orientation.

2.3 General Mine Layout

The diamond deposit is contained in a multiple-phase land-based kimberlite pipe that is located about 1km to the northeast of the proposed mining camp and processing plant.

One creek (commonly known as stream C1) will need to be diverted around the northwest corner of the open-pit. The C1 diversion will control freshet flows from C1 and C2 lakes to the west of the pit. The waste dump is to the east of the pit, with runoff collection ponds considered if there is any leachate problem noted.

Overburden will be stockpiled separately, and its viability for reclamation determined. Ongoing progressive reclamation and research is planned, and a proposed Closure Plan is in place.

Mined kimberlite will be processed on site by the use of heavy media separation. The nominal ore feed rate is approximately 1000-2000 tonnes per day, with the upper limit dependent on the conversion of certain inferred resources into economic reserves. Kimberlite coarse rejects will be trucked to a land dump or utilized for site use, while fines will be pumped to Long Lake immediately to the south of the process plant.

The mining area and site facilities are shown on the accompanying site layout plan (see Staged figures at back of Report)

3. Wildlife Baseline Data

Baseline studies at the Jericho site have collected a large amount of information on wildlife in the Jericho area. The Company will utilize this information to locate many of the survey areas at the site. Baseline data collected includes information on caribou, raptors, muskox, grizzly bear, nesting birds, foxes, and wolverines. This data can be found as part of the Final Environmental Impact Statement for the Jericho Project that was submitted and approved by the NIRB.

4. Construction Phase

As previously noted mobilization of the project will occur during February to April of 2005. Mobilization will be via the annual winter road from Yellowknife to the Jericho site all on seasonal winter roads. The schedule below outlines the general planned schedule for the construction phase of the project.

4.1 SCHEDULE

January – March 2005	Receive Water License and Land Leases to mobilize on winter road
March – April 2005	Begin Jericho starter pit pre-strip for site Infrastructure (use of waste rock for pads and roads)
March – April 2005	Phase 1 of Fuel Farm
April – August 2005	Building of site pads and roads
May 2005	Begin development of Waste Dump 1
May 2005	Camp accommodations completed and Process Plant construction started (project process plant to be completed by Nov. 05)
May – June 2005	Causeway Construction
July – August	Phase 2 of Fuel Farm
September 2005	Dewatering of Long Lake
October 2005	Development of PKCA Divider Dyke
November 2005 – March 2006	West and East Dam Construction
December 2005	Process Plant commissioning. Full-scale mining commences.

January-March 2006	Start and build up to full production begins.
June – July 2006	Stream C1 Diversion
January 2007	Begin development of Waste Dump 2
April 2009	Open pit development projected to be completed
Summer 2009	Proposed Commencement of Underground Mining
Summer 2011	Completion of Underground Mining
2011 – 2013	Processing of stockpiled ore
2014	Proposed beginning of closure activities

4.2 Mitigation During Construction

The ability to implement mitigation measures during construction largely has occurred through the development of the mine plan and through modifications made throughout the Environmental Assessment (EA) process. In addition, the Company has initiated many community meetings where wildlife have been discussed and concerns expressed by community residents that were related to wildlife. Meetings have been conducted in the Kitikmeot Communities of Kugluktuk, Cambridge Bay, Gjoa Haven, Bathurst Inlet and Omingmoktok. The majority of concerns expressed at the community level are related to the well being of caribou and thus Tahera has given significant consideration to developing a mine plan that takes caribou protection as a high priority.

Tahera has collected significant baseline date for the Jericho site (ref. Environmental Baseline Report 1999 and 2000 and Environmental Effects Assessment of Wildlife, Final EIS submitted to NIRB) and will continue to collect wildlife data throughout the life of the mine. Through the studies conducted at the site and with the experience gained at other northern diamond mines, the Company has developed a mine plan that reflects the importance of wildlife and in particular the protection of caribou. In particular the Company has made specific design modifications to the waste rock stockpiles, roadways, open-pit, and site rules in consideration of wildlife.

Waste rock stockpiles have been designed to allow the migration of caribou to occur through the site if the herd were to choose this as a route. Caribou will have the ability to easily avoid any entrapment associated with the waste rock stockpiles. Generally, any caribou migration that occurs through the site will see the caribou pass through the site within a few days as observed through the collection of baseline data. The selection of the location of the waste rock piles has also taken into consideration the use of the area by nesting birds in order to limit any disruption to their habitat. It is anticipated that waste rock piles will also provide future habit for nesting birds and small rodents.

Roadways will be required to be built at the mine site, but will be kept to a minimum in order to limit interactions with wildlife. If roadways need to be constructed near caribou

crossings ramps will be built periodically along the roadways to allow caribou to easily cross. This method has been observed to successfully work at other northern mines.

The open pit has been designed to include the construction of a rock berm around the perimeter of the open pit to limit the ability of animals to access the pit area. The use of the rock berm has proven to be useful at other northern diamond mines compared to the use of fencing, which has the ability to trap animals. The Nunavut Water Board (NWB) along with input from the KIA have determined that Inukshuks should be built and used in conjunction with the berm to direct animals around the pit.

Specific mine site rules have also been developed with wildlife in mind and these include such rules as all vehicles and personnel being required to give right-of-way privileges to wildlife during all activities including construction, drilling, and blasting. This will be particularly important during caribou migration season and will be strictly adhered to.

The environmental effects of blasting activities will be minimized to not affect wildlife and in particular to not affect migrating caribou. During periods where caribou migration is occurring blasting will cease until the herd has passed through the mine site and are no longer at risk.

Given the time of season when mobilization and the beginning of construction is occurring, it is likely that few interactions with wildlife will occur during this time. It is expected that wildlife activity will increase with the warming of the weather and the onset of spring and summer at which time construction will be well underway.

As a matter of safety, there is no hunting allowed on the Jericho Mine site nor will hunting be allowed with in 500m of the project area. The Company will make every attempt to encourage local hunters to adhere to this rule.

Tahera endorses the strategy of adaptive management for the Jericho Project. The Company will adopt improved mitigation measures if they can be shown to be implemented practically and improve wildlife habitat.

4.3 Monitoring During Construction

Tahera will have on site environmental personnel who will be responsible for the day-to-day requirements of environmental work including wildlife monitoring and mitigation. Presently it is anticipated that two full time environmental personnel, one of which will be the Environmental Coordinator, will be in place to manage the environmental activities. The environmental staff will be responsible for the collection of environmental data, and their work will be supplemented with that of consultants as required.

Specifically, wildlife logs will be kept at the site to record all wildlife sightings and or encounters. These logs have been kept over the years during the exploration phase and

will continue to be kept. All personnel at the mine site will be encouraged to report wildlife sightings to the environmental staff for recording and reporting purposes.

Monitoring activities specific to caribou will include the ongoing recorded updates of caribou migration routes that shall protect caribou migration routes where possible. Maps of caribou migration routes will be posted at the mine site and will also be provided to the NIRB, KIA, and GN.

The majority of data collection will be done during the summer period (approx. June through to August) of 2005. Environmental personnel or consultants will conduct surveys at the site and record the presence of key wildlife, such as caribou and grizzly bear. Wildlife monitoring will occur within the footprint of the Jericho site, but may also go beyond the footprint if it helps to better understand the activities of specific wildlife.

Specific monitoring and protection of nesting birds shall occur within 500m of the project area (i.e. footprint). Nesting bird occurrences will be identified and reported both on site and with in the 500m perimeter area. A general area survey of the site and the 500m-perimeter area will be conducted by the Company's environmental personnel to identify nesting locations and to report their findings to operations personnel at the site. Nesting sites should be marked in a fashion (i.e. flagged) that will not disturb nesting birds. This process will insure that minimal losses of eggs and nests will occur. The data and results of the nesting survey will be provided to the NIRB monitoring agent for review and comment. It is anticipated that the first opportunity to conduct such surveys would be during the spring / summer of 2005 when the ground is visible for such observations to be made. The surveys would then be conducted annually during the operations phase of the project.

5. Operations

5.1 Mitigation During Operations

Mitigation measures during operations will be based on observations or monitoring results that show areas where adaptive management should be implemented. During this period it is anticipated that most wildlife mitigation will come as the result of encounters. The method of handling wildlife encounters will be of the utmost importance and therefore the Company will ensure that site personnel are made aware of the proper way to avoid and deal with wildlife encounters.

The Company retained the services of Bearwise (Andy McMullen) to develop a mitigation plan for the operations phase. This complete plan is attached as an Appendix.

5.2 Monitoring During Operations

Monitoring will continue to occur over the life of the mine, which is currently estimated to be 8 years of operations. This does not include the monitoring to be conducted during the construction phase, which is estimated at one year, nor does it include monitoring during closure.

Monitoring during the operations phase will occur on an annual basis and will include key wildlife such as caribou, muskox, nesting birds, and grizzly bear. Ongoing logs will be kept during the operations phase, but larger site-specific surveys will be conducted annually and reported.

6. Closure Phase

6.1 Mitigation During Closure

It is currently estimated that the mine will enter its closure phase in 2013. A preliminary closure plan has been tabled for the project both in the NIRB and the NWB processes. A final closure plan will be tabled in the coming months as part of the requirements of the NWB water license. This closure plan will have to be finalized and accepted prior to closure activities beginning.

The current closure plan takes into consideration the potential long-term effects on wildlife. The site will be restored to as natural of a setting as possible to invite wildlife to utilize the immediate mine site footprint as habitat. Acceptable restoration will be accomplished by the contouring of waste rock piles to emulate a natural hill setting. Waste rock piles will be built with this concept in mind and therefore will undergo very little final contouring (i.e. disruption) during the reclamation period.

All facilities such as buildings and equipment will be removed from the site, which will ensure that foreign materials do not disturb wildlife in the future. The Company will have security deposits in place with the NWB, INAC, and the KIA to ensure that reclamation work is completed.

All roads and pads will be remediated or scarified as part of the reclamation plan. The open pit will have a permanent berm with Inukshuks placed surrounding it to ward off any approaching caribou.

If no third parties show interest in the airstrip at the Jericho site, the airstrip will be removed. However, there has been public interest expressed in leaving the airstrip in place for emergency purposes at the end of the mine life. The Company will work with the required

regulators to find a long-term solution for the airstrip prior to the filing of the final reclamation plan.

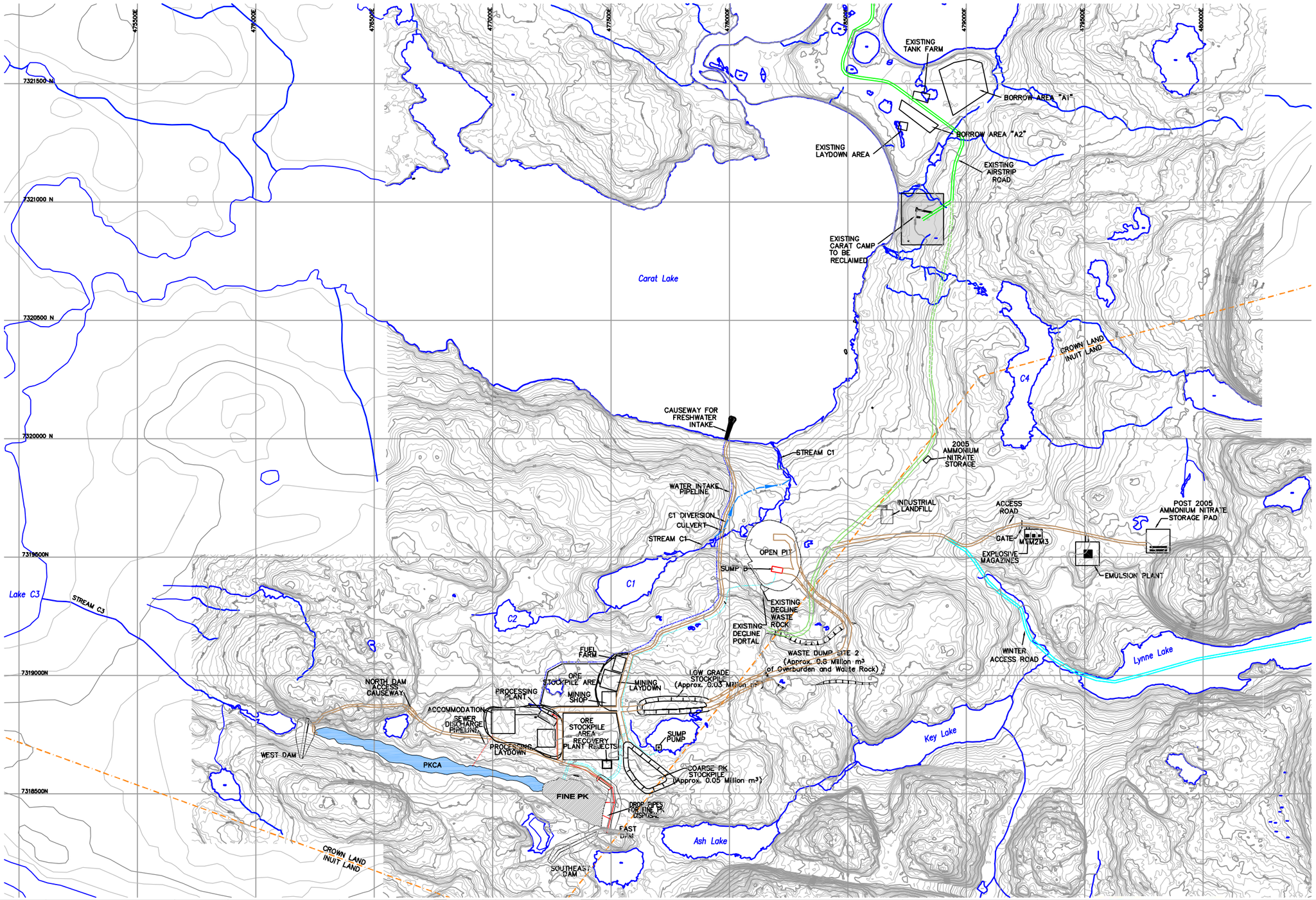
6.2 Monitoring During Closure

Wildlife monitoring will continue at the reclaimed site annually for a period of 5 years following the completion of mining. These monitoring activities will be combined with other monitoring and data collection activities required for the project. As environmental personnel will not be on site on a permanent basis at this time closure monitoring will be done seasonally, likely in the summer season, when wildlife activity in the region is greatest. In particular, caribou data collection will continue during this time and the information will be reported to the NIRB, KIA, and GN.

7.0 Reporting

Wildlife data that has been collected annually will be provided to the NIRB and to other interested parties (including the KIA and Government of Nunavut). The Company proposes that an annual report be submitted to all parties on February 1st each year, which would allow interested parties to review the materials and comment prior to the upcoming season. In providing wildlife information related to the Jericho mine, the company will significantly benefit the current data ba such as the NIRB, the KIA, and the Government of Nunavut.

Separately, from the annual reporting process, and in the event that problem encounters with wildlife occur, the Company will report these occurrences immediately to the NIRB monitoring agent, the KIA and the GN. Input will be sought specifically from the regional wildlife officer and a course of action will be taken that will ensure safety to mine employees and conservation to wildlife.



LEGEND

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- EXISTING ROAD (APPROXIMATE LOCATION)
- ROAD REQUIRED BY YEAR 1
- WINTER ROAD
- FRESH WATER PIPELINE
- MINE WATER PIPELINE
- FINE PK DISCHARGE PIPELINE
- RECLAIM PIPELINE
- SEWER PIPELINE
- DITCH

NOTES:

1. LAYOUTS ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL SIZE AND FOOTPRINT LOCATIONS
2. SHOULD THE GRADE OF THE LOW GRADE MATERIAL BE FAVORABLE, THIS MATERIAL MAY GET PROCESSED WHICH WOULD LEAD TO A REDUCTION IN THE SIZE OF THE STOCKPILE
3. THE EAST AND SOUTHEAST DAMS WILL, AT A MINIMUM BE CONSTRUCTED TO PROVIDE STORAGE FOR A FULL YEAR OF PKCA INFLOWS.
4. THE TIMING OF THE CONSTRUCTION AT THE NORTH DAM, AND THE COMPLETION OF OF THE EAST AND SOUTHEAST DAMS WILL BE REVIEWED ANNUALLY UNTIL THE DAMS ARE CONSTRUCTED OR OPERATIONS CEASE.
5. SUMP PUMPS SHOWN DISCHARGE TO THE PKCA.
6. THE FINAL LAYOUT OF THE C1 DIVERSION WILL BE FIELD FIT IN ORDER TO OPTIMIZE THE REQUIRMENTS FOR FISH HABITAT AND FISH PASSAGE

TAHERA CORPORATION
JERICHO LAKE SOUTHWEST EXTENSION

Date of Photography August 5, 1995.
Scale of Photography 1:10 000
Survey control supplied by Commerce Geological Ltd.
Survey control tied to UTM Projection, NAD 27, Zone 12
Compiled by The ORTHOSHOP, Calgary, October 1995.
NO 7423

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DRAWING G-9	AMMONIUM NITRATE STORAGE LAYOUT											
DRAWING G-8	BORROW AREAS PLAN & SECTION											
DRAWING G-7	TERRAIN EVALUATION MAP											
DRAWING G-6	BEDROCK GEOLOGY MAP											
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REFERENCE DRAWINGS				REVISIONS					ISSUE AUTHORIZATION			

WATER LICENSE APPLICATION

SRK Consulting Engineers and Scientists

DESIGNED BY: CCS	DRAWN BY: JM
DATE: JULY 2004	DATE: JULY 2004
CHECKED BY: CCS	DISCIP. ENGR.
DATE: JULY 2004	DATE:
PROJ. MGR:	PROJ. ENGR.
DATE	DATE

SRK PROJECT NUMBER: 1CT004.06

Tahera Diamond Corporation

JERICHO PROJECT

GENERAL ARRANGEMENT AT END OF APRIL 2006

DRAWING NUMBER: 1CT004.06 – G10

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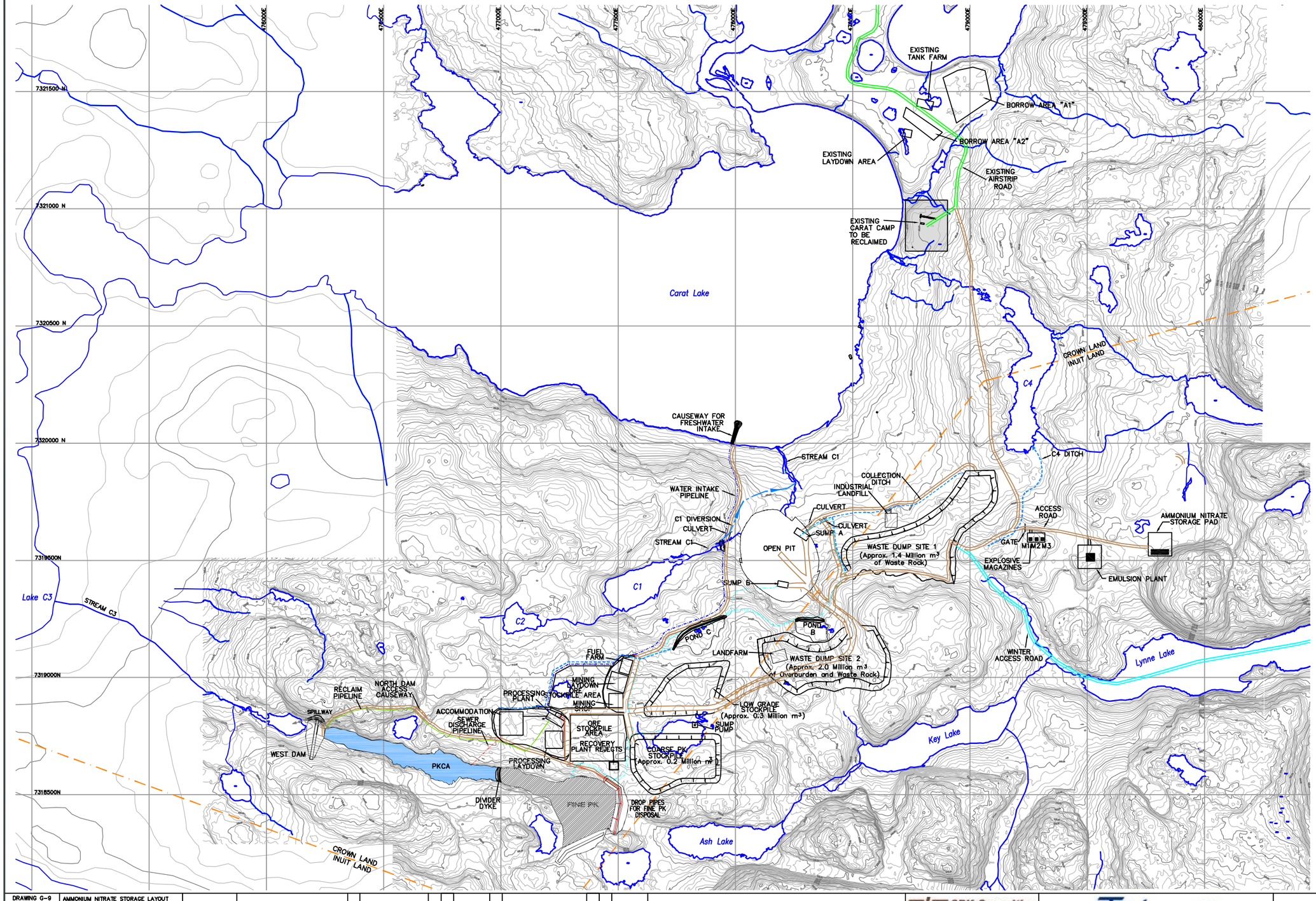

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- WINTER ROAD
- FRESH WATER PIPELINE
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TAHERA CORPORATION
JERICHO LAKE SOUTHWEST EXTENSION

Date of Photography August 6, 1998.
Scale of Photography 1:10 000
Survey control supplied by Cameron Geological Ltd.
Survey control based on: UTM Projection, NAD 27, Zone 12
Compiled by The ORTHOSHOP, Calgary, October 1998.
WO 7433

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DRAWING G-8	BORROW AREAS PLAN & SECTION												
DRAWING G-7	TERRAIN EVALUATION MAP												
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REFERENCE DRAWINGS				REVISIONS					ISSUE AUTHORIZATION				

WATER LICENSE APPLICATION

SRK Consulting
Engineers and Scientists

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DATE: JULY 2004	DATE: JULY 2004
CHECKED BY: CCS	DISCIP. ENGR.
DATE: JULY 2004	DATE:
PROJ. MGR:	PROJ. ENGR.
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Tahera Diamond Corporation

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GENERAL ARRANGEMENT AT END OF APRIL 2007

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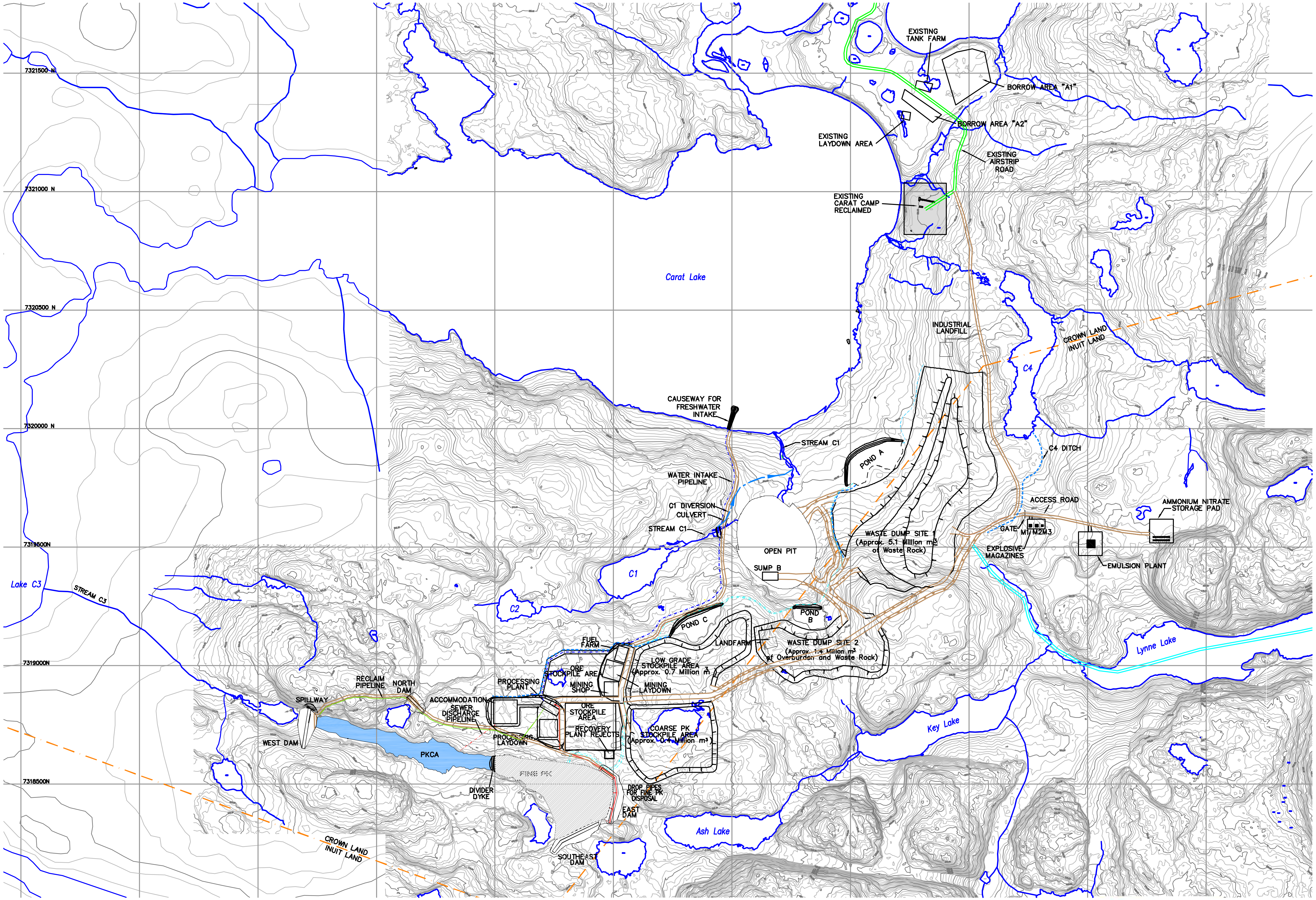

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LEGEND

- EXISTING ROAD
- EXISTING ROAD (APPROXIMATE LOCATION)
- ROAD REQUIRED BY YEAR 3
- WINTER ROAD
- FRESH WATER PIPELINE
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5. STOCKPILE FOR CENTRAL AND NORTH KIMBERLITE LOBES SHOW MAXIMUM LIMITS. ACTUAL FOOTPRINTS MAY VARY.

TAHERA CORPORATION
JERICHO LAKE SOUTHWEST EXTENSION

Date of Photography: August 5, 1995.
Scale of Photography: 1:10 000
Survey control supplied by: Conamara Geological Ltd.
Survey control based on: UTM Projection, NAD 27, Zone 12
Compiled by The ORTHOSHOP, Calgary, October 1995.
WO 7423

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Tahera Diamond Corporation

JERICHO PROJECT

GENERAL ARRANGEMENT AT END OF APRIL 2008

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1CT004.06 – G12

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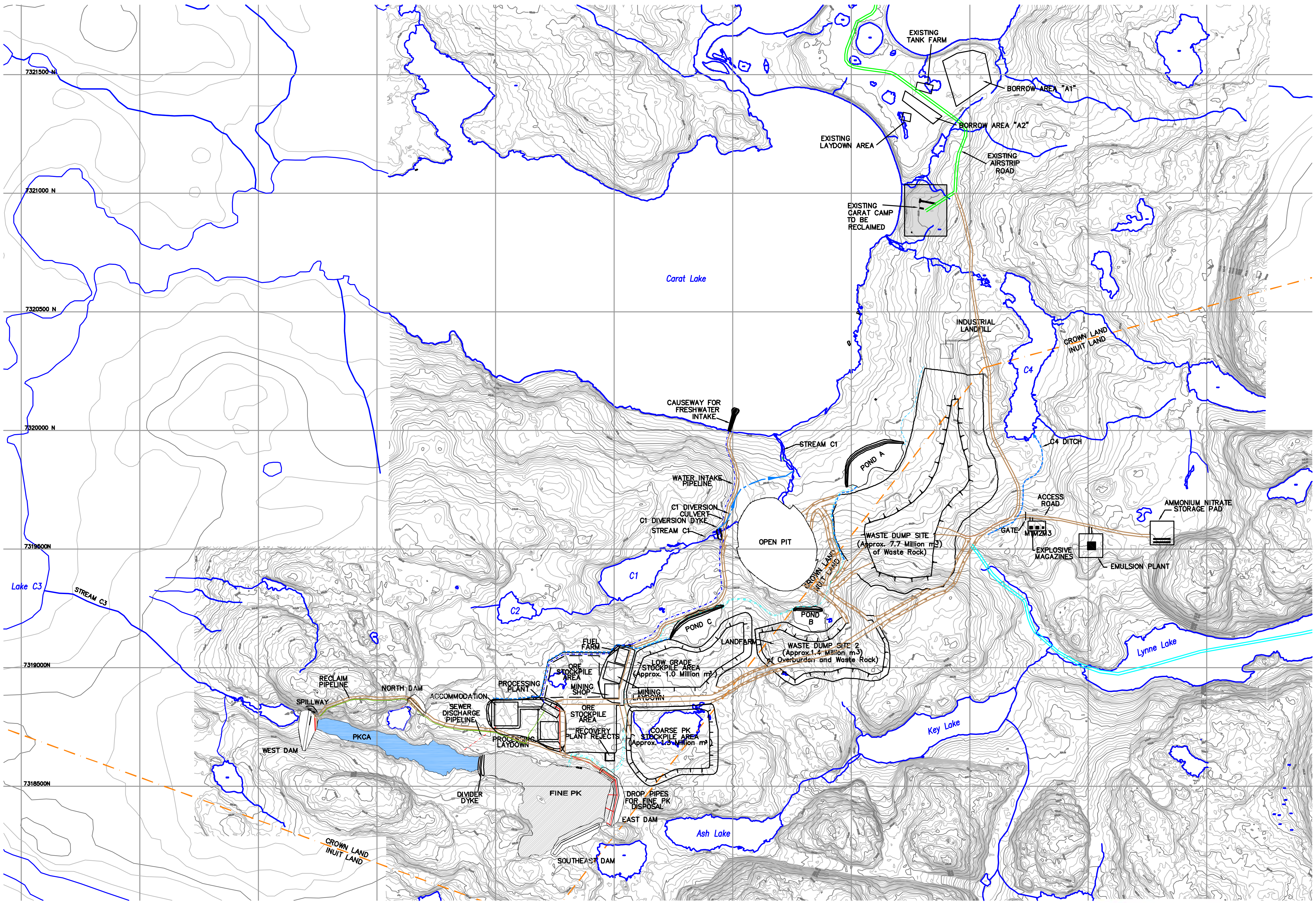

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TAHERA CORPORATION
JERICHO LAKE SOUTHWEST EXTENSION

0 100 200 300 400 500 METRES
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SRK PROJECT NUMBER: 1CT004.06	

Tahera Diamond Corporation

JERICHO PROJECT

GENERAL ARRANGEMENT AT END OF DECEMBER 2013

DRAWING NUMBER: 1CT004.06 – G13

REV. A

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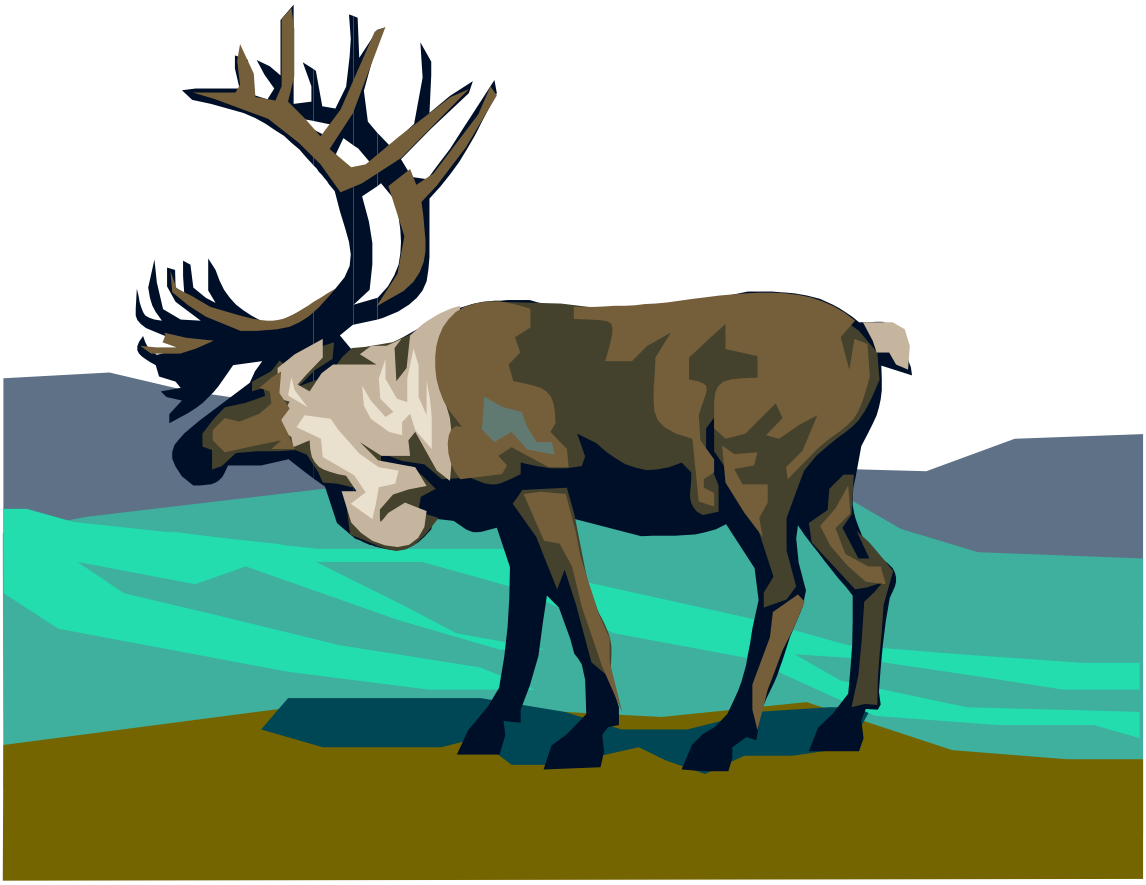
WILDLIFE MITIGATION PLAN
JERICHO DIAMOND PROJECT



Prepared for:

Tahera Corporation
Toronto, Ontario
April 2004

Prepared by:

Andy McMullen's
BEAR*WISE*
14 Tees Court
Yellowknife, NT X1A 3L5

WILDLIFE MITIGATION PLAN JERICHO DIAMOND PROJECT

1. INTRODUCTION

This wildlife mitigation plan is organized in subject specific modules. Each pertains to certain elements of the overall plan objective to ensure the safety of both personnel on site and animals that may frequent the Project area.

Wildlife encounters may occur at any time and it is everyone's responsibility to ensure the safety of people and animals on site. The plan includes general procedures that should be reviewed by **ALL** personnel who work at the Jericho Diamond Project as well as procedures to be followed by specific project personnel.

Key Considerations

Tahera must assign overall accountability, recording and reporting responsibility to designated on-site personnel if the Plan is to be effective. These individuals need to have responsibility for the entire site in order to effectively plan, implement and monitor mitigation measures. The Wildlife Agreement will contain monitoring plans set out to evaluate the effectiveness of mitigation measures.

Whenever it is necessary to deter or herd wildlife off or away from project infrastructure, the deterrent action will be conducted by the Wildlife Response Team (WRT). All members of the WRT will receive specialized training in deterrent use and herding techniques including the setting up of temporary deflection fencing. Tahera will consult with environmental and area managers to determine the actual make up of the WRT. Security personnel will be the only on-site personnel to have access to a firearm; therefore it is critical that at least one member of the security team be on the WRT.

Food wastes are the strongest wildlife attractant on site. The location of the incinerator and handling and disposal of garbage is another key component of the Wildlife Mitigation Plan. The effective management of food and associated waste is critical to prevent wildlife from being attracted to the project footprint. The fewer steps between the generation of waste and final disposal, the greater the confidence in the success of this mitigation measure. Details of the recommended food waste management and mitigation procedures are found in the following sections of the Wildlife Mitigation Plan:

- Section 14: Handling and Disposal of Food Wastes and
- Appendix A: Consolidated Impact Resolution – Direct and Indirect Mortality from Attraction to Project Footprint. (pg. 8)

These measures are aimed at preventing food wastes from ever getting outside and reducing the time and resources required to effectively deal with them.

This wildlife mitigation plan was prepared by:
Andy McMullen at BEAR*WISE* of Yellowknife, NWT

2. MITIGATION PROCEDURE: WILDLIFE SAFETY TRAINING PLAN

PURPOSE

To ensure that all personnel at the Jericho Diamond Project are provided guidance on how to respond in a manner that is safe to both humans and wildlife should they encounter wildlife on or around the site.

SCOPE

This wildlife safety training guide outlines the recommended levels of training that specific groups of people at the Jericho Project site should receive. Training starts from the general to the specific and provides an opportunity for any one on site to become more aware of the wildlife and wildlife safety issues in the Jericho Project area.

OVERVIEW

The Jericho Diamond Project area provides both year-round and seasonal habitat for wildlife species. It is important that human activity at the Jericho Diamond Project site does not result in wildlife encounters that put people or wildlife at risk. All personnel on site have a role to play in ensuring human safety, conservation of wildlife, and documenting wildlife activities in the Project area.

PROCEDURE

WILDLIFE AWARENESS

Site Orientation to include:

- General site rules regarding wildlife.
- No Feeding Wildlife policy
- Wildlife have the Right of Way
- No Littering policy
- Relevant sections of the Waste Management Plan
- Reporting Wildlife
- Encountering Wildlife
- Bear Encounters

General wildlife awareness training is self directed learning where people are able to obtain and view the educational materials dealing with wildlife found in the Jericho area.

- Species to include are grizzly bear, caribou, muskox, wolverine, fox and wolf.
- Printed publications will be stocked and made available in recreation areas.
- Videos can be signed out from the Environment office for private or group viewing in the TV lounges.

Wildlife Awareness training can be supplemented with presentations by guest speakers who are knowledgeable about wildlife in the area.

Bear Awareness Training will be mandatory for anyone working outside or participating in leisure activities outside i.e. joggers, walkers, hikers, photographers etc.

- Training can be self directed by viewing the video Staying Safe in Bear Country or by attending a bear awareness presentation when available.
- Both the video viewing and presentation options will include the completion of a multiple choice test.

WILDLIFE SAFETY

Bear Safety Training provided by qualified contractor or Wildlife Officer to include:

- Bear ecology
- Behaviour
- Human / Bear encounters
- How to react in a bear encounter
- Prevention
- Detection
- Deterrents
- Field Worker Safety

Carnivore Safety Training provided by qualified contractor or Wildlife Officer to include:

- Ecology and behaviour of Wolf, Fox and Wolverine
- Wildlife / Human encounters
- How to react in a wildlife encounter
- Prevention
- Rabies
- Detection
- Waste Management Plan

Deterrent Training provided by qualified contractor or Wildlife Officer to include:

- Ecology and behaviour of Caribou, Wolf, Fox and Wolverine
- Wildlife / Human encounters
- How to react in a wildlife encounter
- Prevention
- Detection
- Waste Management Plan
- Wildlife Deterrent Plan
- Detailed Deterrent training

TRAINING	WHO
SITE ORIENTATION	EVERY EMPLOYEE, CONTRACTOR AND VISITOR
GENERAL WILDLIFE AWARENESS	EVERY EMPLOYEE, CONTRACTOR AND VISITOR
BEAR AWARENESS	EVERY EMPLOYEE, CONTRACTOR AND VISITOR WORKING OUTSIDE
BEAR SAFETY TRAINING	ENVIRONMENT STAFF WILDLIFE RESPONSE TEAM EXPLORATION CREWS SURFACE SURVEYORS
CARNIVORE SAFETY TRAINING	ENVIRONMENT STAFF WILDLIFE RESPONSE TEAM EXPLORATION CREWS SURFACE SURVEYORS
DETERRENT TRAINING	WILDLIFE RESPONSE TEAM
WASTE MANAGEMENT PLAN	ENVIRONMENT STAFF WILDLIFE RESPONSE TEAM EMPLOYEES RESPONSIBLE FOR FOOD, FOOD WASTE, AND NON-FOOD WASTE HANDLING.

RESPONSIBILITY

The Environment Department is responsible for:

- Ensuring that all employees, contractors and visitors at the Jericho Diamond Project site receive wildlife safety training appropriate to their roles and responsibilities.

DEFINITIONS

Food Waste: Includes and food remains, wastes, or any packaging that contained food.

REFERENCES AND RELATED POLICIES

Jericho Diamond Project General Site Rules

Operational Procedure: Wildlife Sighting and Activity Log (See Section 3.)

Operational Procedure: Bear Encounters (See Section 8.)

Operational Procedure: Wildlife Response Team – Bear Response (See Section 9.)

Operational Procedure: Reporting Bear Sighting (See Section 4.)

Operational Procedure: Encountering Wildlife Carcasses (See Section 13.)

3. MITIGATION PROCEDURE: WILDLIFE SIGHTING & ACTIVITY LOG PROCEDURES

PURPOSE

To ensure that all personnel at the Jericho Diamond Project are aware of the need to complete the Wildlife Sighting and Activity Log.

SCOPE

Applies to all employees, contractors and visitors at the Jericho Diamond Project.

OVERVIEW

Recording wildlife sightings and activity provides Tahera Corporation with a historical record of wildlife use of the area and can be used by the wildlife response team to predict timing of potential wildlife encounters.

PROCEDURE

- Whenever wildlife is spotted within the area of the Jericho Project the sighting is to be recorded in the Wildlife Sighting and Activity Log on return to camp.
- The information to be recorded includes:

  Date

  Recorder's name.

  Location of wildlife observed

  The type and number of wildlife.

  A general description of the animal's behaviour i.e. moving north, feeding, bedding etc.

TRAINING

- Initial Orientation Program for all employees, contractors, and visitors will focus on the need to report wildlife sightings in the Jericho Project area.

RESPONSIBILITY

Every individual is responsible for:

- Reporting and / or recording wildlife sightings.

The Jericho Diamond Project Environmental Manager is responsible for:

- Ensuring that all employees, contractors and visitors understand this policy and procedure.
- Ensuring that the wildlife Sighting and Activity log is posted in a location accessible by all employees.
- Maintaining the Wildlife Sighting and Activity Log book and ensuring its accuracy.
- Compiling monthly summaries of the data from the log sheets.

REFERENCES AND RELATED DOCUMENTS

DEFINITIONS

REFERENCES AND RELATED POLICIES / PROCEDURES

Induction Program

Operational Procedure: Wildlife Encounters (See Section 7.)

Operational Procedure: Reporting Bear Sightings and Encounters (See Section 4.)

Wildlife Safety Training Plan (See Section 2.)

4. CONTINGENCY PROCEDURE: REPORTING BEAR SIGHTINGS AND ENCOUNTERS

PURPOSE

To ensure that all personnel at the Jericho Diamond Project are aware of the procedure for reporting the sighting of bears and bear / human encounters.

SCOPE

This applies to all personnel who see a bear in the Jericho Project area, including all exploration crews.

OVERVIEW

Grizzly Bears are active in the Jericho Project area from early May to late October. There is potential risk to human safety, from all bears attracted to camp or encountered at close range. It is important that all sightings or encounters with bears be reported immediately. Early detection of bears allows camp personnel time to take actions to prevent the presence of a bear from becoming a risk to human safety or property. For the purposes of determining Wildlife Response Team (WRT) response, the following definitions will be used:

Sighting: A Bear greater than 1 kilometre from camp perimeter, and greater than 100 metres from area of human activity.

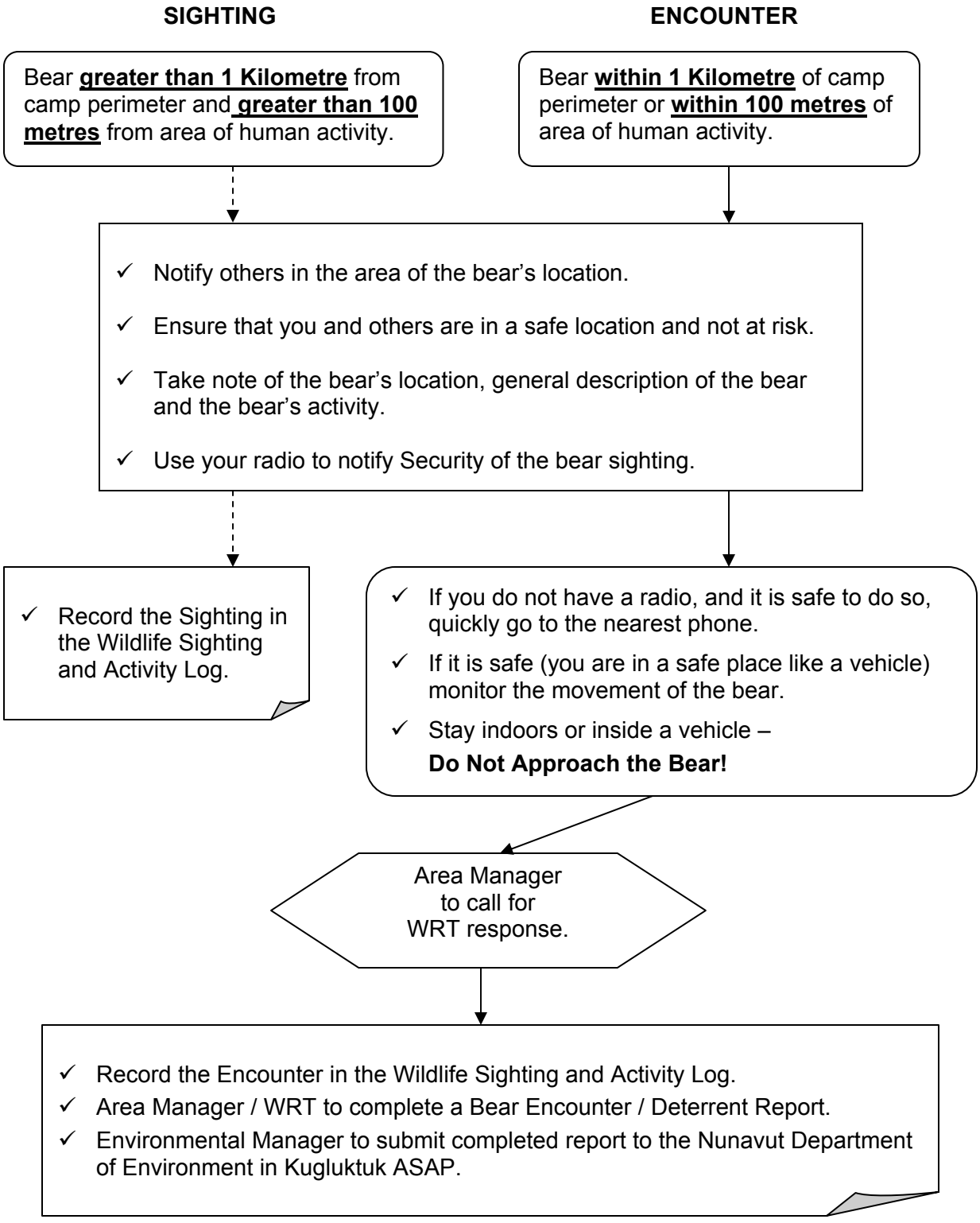
Encounter: A Bear within 1 kilometre of camp perimeter or within 100 metres of area of human activity.

PROCEDURE

See procedure decision tree on the following page.

PROCEDURE

If you see a bear the following procedures apply:



TRAINING

- Site safety training is required.
- Bear safety awareness.

RESPONSIBILITY

Every individual is responsible for:

- Recording wildlife sightings in the Wildlife Sighting and Activity Log.
- Reporting the wildlife encounter to the Area Manager.

The Area Manager is responsible for:

- Alerting WRT
- Providing the resources and assistance required by the WRT to respond appropriately.
- Reporting the bear encounter to the Nunavut Department of Environment.

DEFINITIONS

Sighting: Bear greater than 1 kilometre of camp perimeter and greater than 100 metres from area of human activity.

Encounter: Bear within 1 kilometre of camp perimeter or within 100 Metres of area with human activity.

REFERENCES AND RELATED POLICIES / PROCEDURES

Operational Procedure: Wildlife Response Team – Bear Response (See Section 9.)

Operational Procedure: Bear Encounter (See Section 8.)

Operational Procedure: Wildlife Deterrent Report (See Appendix D.)

Operational Procedure: Wildlife Sighting & Activity Log Procedures (See Section 3.)

5. MITIGATION / CONTINGENCY PROCEDURE: TRAFFIC MANAGEMENT

PURPOSE

The purpose of the traffic management procedures is to reduce the risk of wildlife / vehicle collisions and the potential disturbance of wildlife from vehicle and aircraft traffic in the Jericho Diamond Project area.

SCOPE

Traffic management procedures apply to anyone operating vehicles or aircraft in the Jericho Diamond Project area during all phases of the Jericho Project. The procedure addresses:

- recommended traffic speeds;
- vehicle and aircraft operators' directions regarding the presence of wildlife on or near roads and the airstrip; vehicle and aircraft operators' notification of sensitive wildlife habitat to avoid.

OVERVIEW

Project Sites of Concern:

The Jericho Diamond Project will include approximately 10.4 kilometres of all-weather service and haul roads and a 1,200 m all-weather airstrip.

- Pit to Contwoyto Lake: 3.5 km long, 9 m wide
- Pit to Process Plant: 1.5 km long, 18 m wide
- Processing Plant to PKCA: 2.1 km, 9 m wide
- Pit to Dump 1 SE: 300 m long, 18 m wide
- Dump 1 SE to Exploration Camp: 1.2 km long, 6 m wide
- Exploration Camp to Airstrip: 1.5 km long, 6 m wide
- Pump House access road: 300 m, 6 m wide, links to the main road.
- Airstrip: average 1 to 3 flights per week for the life of the project.

Vehicle traffic on these roads, and aircraft landing and taking-off from the airstrip present the potential for accidental wildlife mortality due to vehicle / wildlife collisions. Vehicle and aircraft traffic may also cause a disturbance to wildlife in the vicinity of the project site.

NOTE: Vehicle traffic on roads is predicted to be the largest source of dust. Controlled traffic speeds combined with watering of roads will mitigate dust generation from site roads.

PROCEDURE

General:

- Wildlife are to have the right-of-way when crossing or attempting to cross roads or the airstrip.
- All vehicles are to be restricted to designated roads and prepared work areas within the designed footprint of the mine.
- Recreational use of off-road vehicles is to be prohibited.

Air Traffic:

- Aircraft are to maintain a minimum flying altitude of 300 m above ground level (AGL) or greater except during landings and take-offs.
- Aircraft are not to approach closer than 500 m from a raptor nest, waterfowl nesting area or caribou water crossings when any of these sites are active.
- Caribou will be herded off the runway prior to aircraft landings and takeoffs. Herding techniques are described in "Herding Guidelines".

Surface Vehicle Traffic Speeds:

- Camp and Processing Plant pad – 20 km/hr
- Main road connecting pit, waste dumps, stock piles and processing plant :
  - light vehicles 30 km/hr
  - haul trucks 30 km/hr
- Pump House access road – 30 km/hr.
- PKCA service road – 40 km/hr.
- Contwoyto access road to Explosives magazines
  - light vehicles 40 km/hr
  - winter road rules apply to all traffic during winter road season
- Contwoyto Lake access road from explosives magazines to Contwoyto Lake
  - light vehicles 40 km/hr. Restricted use outside winter road season.
  - winter road rules apply to all traffic during winter road season.
- Contwoyto Lake road to Airstrip – 40 km/hr

Wildlife Advisory System:

The goal of the wildlife advisory system is to alert all Jericho Diamond Project employees and contractors that wildlife are on, or close to roads or the airstrip so that appropriate precautions are to be taken.

Wildlife sightings:

- Any wildlife sighted in the Jericho Project area is to be recorded in the "Wildlife Sighting and Activity Log".
- Any bear sighted **< 1 km** from the project footprint will be considered an encounter and the "Reporting Bear Sighting and Encounters" procedure will be followed.
- Wildlife **< 1km and > 500 m** from roads or the project footprint and moving towards project roads or infrastructure:
  - Reported to the Environment Department or designate via radio.
  - Environment Department will notify vehicle operators working in the area.
  - Sighting recorded in the "Wildlife Sighting and Activity Log". (Wildlife type, numbers etc.)
- Wildlife **< 500 m** from roads or the project footprint:
  - Reported to the Environment department, via radio.
  - When notified Environment personnel will be dispatched to the location to monitor the situation.

- Based on monitoring of the wildlife, the Environment department will advise Area Manager of appropriate action(s) to be taken.
- Each sighting is to be recorded in the “Wildlife Sighting and Activity Log”.
- If appropriate, Area Manager to implement a Caribou / Muskox Watch.

Caribou / Muskox Watch:

Experience at other Nunavut and Northwest Territories mine sites shows that caribou or muskox are the species most likely to come into conflict with vehicles and aircraft at the Jericho Diamond Project. Based on this, extra precautions will be taken when dealing with these species.

For instance a “Caribou / Muskox Watch” system, based on the Caribou Advisory system currently in use at Diavik Diamond Mine in the Northwest Territories, will serve as a communication tool to alert vehicle and equipment operators of the presence of caribou or muskox on or near the project infrastructure. This advisory system will include the use of radio broadcasts and roadside signage to alert drivers of presence of caribou or muskox and what mitigation measures are to be put into effect.

Traffic or activity controls that may be put into place to minimize the risk of vehicle / wildlife conflict include, but are not limited to:

- reduced traffic speed.
- traffic rerouting or stoppage.
- construction and operations activities controlled or stopped.
- cancel or reschedule flights.
- herding or deterrent action.

Traffic or activity controls will remain in effect until monitoring by Environment personnel determines that the risk of vehicle / wildlife collisions has either been reduced or increased. Controls will be adjusted appropriately.

Advisories and specified actions are shown in the chart below. Codes and warning signs are to be posted at key areas on site.

JERICHO DIAMOND PROJECT CARIBOU / MUSKOX WATCH			
CODE		TRIGGER	ACTION
GREEN	NO CONCERN	NO CARIBOU OR MUSKOX WITHIN 500 M OF THE JERICHO PROJECT INFRASTRUCTURE.	POSTED TRAFFIC SPEEDS REMAIN IN EFFECT IN ALL AREAS.
YELLOW	BE AWARE	CARIBOU OR MUSKOX < 500 M BUT >100 M OF THE JERICHO PROJECT INFRASTRUCTURE.	TRAFFIC SPEED REDUCED TO 30 KM/HR WITHIN 1 KM OF REPORTED WILDLIFE. POSTED TRAFFIC SPEEDS REMAIN IN EFFECT IN ALL OTHER AREAS.
ORANGE	CAUTION	CARIBOU OR MUSKOX <100 M OF THE JERICHO PROJECT INFRASTRUCTURE.	TRAFFIC SPEED REDUCED TO 20 KM/HR WITHIN 1 KM OF REPORTED WILDLIFE. TRAFFIC RESTRICTIONS MAY BE IN PLACE, GO TO CHANNEL? FOR INSTRUCTIONS.
RED	ALERT	CARIBOU OR MUSKOX ON ROADS OR PROJECT INFRASTRUCTURE.	TRAFFIC RESTRICTIONS IN PLACE, GO TO CHANNEL? FOR INSTRUCTIONS.

In addition to presence, the numbers of animals and their behaviour will have a bearing on the level of alert implemented and the mitigation measures to be put into effect.

YELLOW	**LARGE HERDS OF CARIBOU WITHIN THE JERICHO PROJECT AREA.**	**AIRCRAFT PILOTS NOTIFIED AND IF POSSIBLE THE AREAS ARE TO BE AVOIDED.**
ORANGE	**HERDS OF CARIBOU > 500 M FROM PROJECT INFRASTRUCTURE BUT DIRECTION OF TRAVEL IS TOWARDS PROJECT INFRASTRUCTURE.**	**TRAFFIC SPEEDS TO BE REDUCED.**
RED	**ANY NUMBER OF CARIBOU OR MUSKOX CROSSING OR ATTEMPTING TO CROSS A ROAD OR THE AIRSTRIP.** **TRAFFIC OR ACTIVITY IN THE AREA IS STRESSING THE ANIMALS PREVENTING THEM FROM CROSSING.**	**TRAFFIC OR ACTIVITY WILL BE STOPPED.** **HERDING ACTION MAY BE IMPLEMENTED IF ANIMALS STALL ON ROAD OR AIRSTRIP.**

Wildlife / Vehicle Collisions:

In the event that wildlife is injured or killed as a result of a collision with a vehicle at the Jericho Diamond Project site, the Nunavut Department of Environment (NDE), Kugluktuk will be contacted immediately.

- Injured wildlife will be put down as quickly and humanely as possible.
- Information and samples will be collected as outlined in the “Encountering Wildlife Carcasses” procedures.
- NDE will be asked to provide direction on disposal of carcass.

TRAINING

- Orientation program.
- Vehicle and equipment operators will be provided a detailed briefing by their supervisors.

RESPONSIBILITY

Vehicle and aircraft operators are responsible for:

- Reporting wildlife sightings.
- Keeping informed of traffic advisories, both radio and signage.
- Immediately complying with advisories.
- Following the directions of Environment personnel at the scene.

Environment Department Personnel will:

- Monitor wildlife.
- Advise the Area Manager of wildlife activity.
- Recommend mitigation action(s).
- Record animal presence, behaviour, mitigation measures taken and the results.
- Provide NDE with reports as required by NDE.

Airport Personnel will:

- Inform helicopter pilots to maintain a minimum flying altitude of 300 m AGL and not approach within 500 m of active caribou water crossings, raptor nests and waterfowl nesting areas.
- Inform pilots of the location of these sites and other sensitive wildlife habitat.

The Area Manager will:

- Ensure that the traffic management procedures are implemented and enforced.
- Broadcast traffic advisories and direct site services to change advisory signage.
- Directs Wildlife Response Team (WRT) to implement mitigation measures.

DEFINITIONS

NDE: Government of Nunavut Department of Environment.

REFERENCES AND RELATED POLICIES / PROCEDURES

Operational Procedure: Wildlife Encounters (See Section 7.)

Operational Procedure: Reporting Bear Sighting or Encounter (See Section 4.)

6. MITIGATION / CONTINGENCY PROCEDURE: MIGRATORY BIRD MITIGATION

GOAL:

To reduce and prevent potential disturbances to migratory birds from mining and human activities at the Jericho Diamond Project site.

OBJECTIVES:

1. To list mitigation / contingency procedures within the Wildlife Mitigation Plan that are applicable to migratory birds at the Jericho Diamond Project site.
2. To detail mitigation / contingency procedures specific to migratory birds.

OVERVIEW:

MIGRATORY BIRDS IN THE JERICHO DIAMOND PROJECT STUDY AREA:

Based on range maps of bird species of northern Canada and field observations sixty seven bird species can be expected to be observed in the greater area of the Jericho Diamond Project. Three of the observed species, bald eagle, northern harrier and greater scaup, are considered transients, as the Jericho area is outside the known breeding range for these species. Since 1995 forty-two species of birds have been observed in the project area.

- None are listed as “endangered” or “vulnerable” by the Committee on the Status of Endangered Wildlife in Canada.
- None have been observed to be breeding in concentrations that would place special significance on the habitat in the Project area for any of the bird species observed.
- None of the lands required for the project are designated to be “Key migratory bird habitat” or “wildlife areas of special interest.”
- There is no known waterfowl staging areas close (within 10’s km) to the Jericho site.

Almost all birds of the Jericho Diamond Project study area are migrants, but there are a few notable exceptions: two species of ptarmigan, gyrfalcons, and the snowy owl. These species may undertake short local migrations for periods of the winter but do not go to predictable wintering areas as do true migratory birds like waterfowl.

Water fowl are relatively uncommon. Canada and White Fronted Geese have been observed in the area but no breeding pairs or broods were observed within the footprint of the Jericho Project site in either 1999 or 2000. None of the lands suitable for “grazing” by geese showed the characteristic signs of grazing by geese. Moulting birds have not been observed on the small lakes in the project area over the five years of environmental monitoring.

No nesting water fowl were noted on the shores of Long Lake in either 1999 or 2000 during searches of the entire shoreline. Waterfowl nesting occurrences on the ponds near the airstrip have not been observed but on the 9th of August 1999 a brood of old squaw ducks (two adults with six ducklings) was seen on the pond adjacent to the road immediately south of the airstrip. On July 3rd 1999 a pair of red-breasted mergansers was observed on the lowland pond immediately east of the airstrip.

During the summer of 1999 a pair of long tailed jaegers nested near the outflow of Carat Lake and a pair of arctic terns and two red throated loons were frequently sighted in the same area.

Gull and shorebird nests were not present in areas planned for Project developments, habitat loss or alteration are not expected for shorebirds.

MIGRATORY BIRDS CONVENTION ACT

The Migratory Bird Convention (MBC), signed in 1916 between Great Britain (Canada) and the United States, was established to stop the widespread decline in populations of migratory game birds and insectivorous birds, as well as to stop the indiscriminate slaughter of these populations by market hunters for the food and feather industry. In Canada the Migratory Bird Act and the Migratory Bird Regulations are the legal instruments for implementing the MBC.

The migratory bird act and regulations provides protection to the majority of bird species that use the Jericho Project area. The sections of the migratory bird regulations most relevant to operations at the Jericho Diamond project site are:

Section 6.

Subject to subsection 5(9), no person shall

a) disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird, or

b) have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird

except under authority of a permit therefore. SOR/80-577, s. 4.

Section 35.(1)

Subject to subsection (2), no person shall deposit or permit to be deposited oil, oil wastes or any other substances harmful to migratory birds in any waters frequented by migratory birds.

The operators of the Jericho Diamond Project are aware of their responsibilities and role in protecting migratory birds within the project area and are taking steps to mitigate to the greatest extent possible any disturbances to nesting or breeding birds and their habitats.

WILDLIFE MITIGATION PLAN AND MIGRATORY BIRDS:

Although the Jericho Diamond Project Wildlife Mitigation Plan is not written specifically for migratory birds, the majority of the proposed wildlife mitigation / contingency measures contained in the plan will be applicable to migratory birds.

Consolidated Impact Resolutions:

Appendix A of the Jericho Diamond Project Wildlife Mitigation Plan contains the Consolidated Impact Resolutions (CIR's) which summarize the proposed mitigation measures for each of the potential wildlife impacts contained in the Nunavut Impact Review Board environmental assessment terms of reference for the Jericho Diamond Project. Listed below are the Consolidated Impact Resolutions which are applicable to migratory birds.

Potential Impact of the Jericho Diamond Project on Wildlife:

Habitat Loss or Alteration from:

- Project Footprint
- Dust
- Walking / Driving
- Exhaust / Emissions

Direct or Indirect Mortality from:

- Attraction to Project Footprint
- Direct mortality from wildlife-human interactions
- Direct mortality from vehicle / aircraft collisions
- Toxic Spills
- Increase in legal and illegal hunting and trapping from increased access due to causeway and roads

Displacement and Disruption of Movement from:

- Attraction of wildlife from adjacent areas
- Impediment or disruption of movement
- Displacement of wildlife
- Exhaust / Emissions

MITIGATION / CONTINGENCY MEASURES SPECIFIC TO MIGRATORY BIRDS:

General Mitigation:

- Project facilities will be built during winter when migratory birds are absent.
- Minimize the area of surface disturbance, particularly wet meadow and esker habitats.
- Minimize disturbance of beach shorelines adjacent to water bodies.
- Aircraft are to maintain a minimum flying altitude of 300m above ground level (AGL) or greater except during landing and take-off.
- Personnel and equipment to avoid occupied waterfowl nesting areas, raptor nests and any other active nests.

ENVIRONMENT CANADA (EC) CONCERN:

If construction occurs during the nesting season there is a high probability that eggs and nests of migratory birds will be destroyed.

<u>Nesting Season</u>:

The exact dates when migratory birds nest in the Jericho Diamond Project area are difficult to predict but can be estimated based on when the species arrives in the project area. The majority of migratory birds arrive in late May to early June. Canada Geese arrive slightly earlier around mid May.

Shortly after arrival in the project area birds will begin to set up territories and build nests. Then they will lay eggs that are incubated for a certain time period. The time between when the eggs hatch and when the young leave the nests varies greatly between species and can range from 24 hrs to 24 days.

Mitigation:

The project construction phase has the greatest potential for conflict with nesting birds; appropriate design criteria and construction scheduling will significantly reduce the potential for destruction of eggs or active bird nests. Examples of project scheduling that will reduce conflicts with nesting migratory birds include:

- Winter road activities will be completed before migratory birds return.
- Mine site construction clearing will occur in February - March.
- Pre-stripping and starter pit development will be completed in the first quarter of year one.

- Construction of all building and stockpile pads and roadways will be completed during the winter months when the ground is completely frozen to preserve the integrity of the permafrost.

ENVIRONMENT CANADA (EC) CONCERN:

Additionally, the potential for contact between migratory bird nests and infrastructure and / or personnel also exists.

Nesting on Infrastructure:

Tank farms, overburden & low grade ore stockpiles, pit walls, camp and mining infrastructure all present potential perching or nesting opportunities for some migratory birds. However cliffs, dikes and outcrops in the Jericho area provide an abundance of natural perching and nesting habitat.

Migratory birds likely to nest on mining infrastructure are smaller species that will have little effect on mining operations; however changes in activity levels near the nest may have an impact on the birds.

Mitigation:

- Anyone finding a nest is to report it to their supervisor immediately. The supervisor will report the finding to the Environmental manager.
- Nests will not be disturbed during the nesting period unless the nests or the birds affect operations.
- If the nests or birds using them affect operations or pose a safety risk, EC will be consulted. A permit to move or destroy the nest may be required.
- Bird nests on mining infrastructure can be removed following the breeding season and appropriate deterrents installed to prevent birds form nesting at these sites again.
- Prior to post-stockpiling disturbance of the overburden and low grade ore stockpiles a survey will be conducted to determine whether migratory birds are nesting on these sites. If nests are found they will be avoided if possible.

Airport and Aircraft Controls

Aircraft collisions with the larger migratory birds such as ducks, geese and gulls present the greatest risk to humans from migratory birds. Aircraft traffic can also negatively impact on nesting migrtory birds and raptors.

Mitigation:

The Wildlife Mitigation Plan sets out the procedures to be followed when herding or deterring wildlife from the airstrip. These can also be applicable to deterring migratory birds such as ducks, geese and gulls. More detailed and specifically relevant information can be found in the following publications available from the aviation branch of Transport Canada:

Transport Canada - Sharing the Skies Manual (TP13549 E)
http://www.tc.gc.ca/CivilAviation/Aerodrome/WildlifeControl/tp13549/menu.htm

Transport Canada – Wildlife Control Procedures Manual TP 11500
http://www.tc.gc.ca/CivilAviation/Aerodrome/WildlifeControl/tp11500/menu.htm

The Environmental and Airport managers will review these documents and determine the best options for the safe operation of the Jericho airstrip and to ensure that wildlife responders are trained in the techniques chosen.

Aircraft associated with the Jericho Diamond Project will be subject to minimum altitude restrictions and pilots will be informed of areas to avoid, such as nesting waterfowl or raptor sites.

ENVIRONMENT CANADA (EC) CONCERN:

Migratory birds can gain access to contaminated melt water from contaminated snow.

Access to Contaminated Water

Experience from mine sites in the Northwest Territories has shown that failure to effectively monitor and clean-up the melt water from contaminated snow can result in harm to migratory birds.

Many fuel spills are minor and cleanup easily done with the use of absorbent materials designed for collecting fuels and oils. During the winter snow is a natural absorbent for effectively soaking up fuel. Collected snow can be temporarily stored in drums with locking lids or, if the volume of snow is not too great, it can be placed in the incinerator and the fuel or oil burned off.

It may be more difficult to deal with volumes of snow produced by a larger spill. Then it is necessary to temporarily store the snow in engineered or large portable containment berms. When the snow melts, the fuel is released and collected from the surface of the water. Since it can take a long time for the contaminated snow to completely melt and all the fuel to collect in the sump, there is a period of time that the contaminated water presents a risk to migratory birds and other animals. However steps can be taken to prevent access.
As well other potential sources of contaminated water include:

- Sumps within land farms and tank farms.
- Trenches or sumps created for capturing fuel as a result of a spill during snow free period.

The following mitigation measures can be used for all of the situations noted above. Proper mitigation can also prevent small mammals from being exposed to the contaminated water.

The mitigation measures listed below will be incorporated into the Spill Prevention, Countermeasures & Control Plan.

Mitigation:

Past experience at mine sites in the Northwest Territories shows that it is difficult to constantly monitor contaminated snow storage areas and remove the contaminated water produced from melt. The oil industry has significant experience in preventing birds and small mammals from gaining access to waste oil pits and they have concluded that the most effective way to ensure that migratory birds do not have access to the pits is to use physical barriers. Applications in the Arctic require barriers that are portable and easily installed and removed.
Netting: The Canadian Wildlife Service website migratory birds environmental; assessment guidelines section links to the U.S. Fish and Wildlife Service web site where it is stated that, “Netting appears to be the most effective method of keeping birds from entering waste oil pits.”

US Fish and Wildlife Service Region 6 Environmental Contaminants
Oil Field Waste Pits
http://www.r6.fws.gov/contaminants/contaminants1c.html

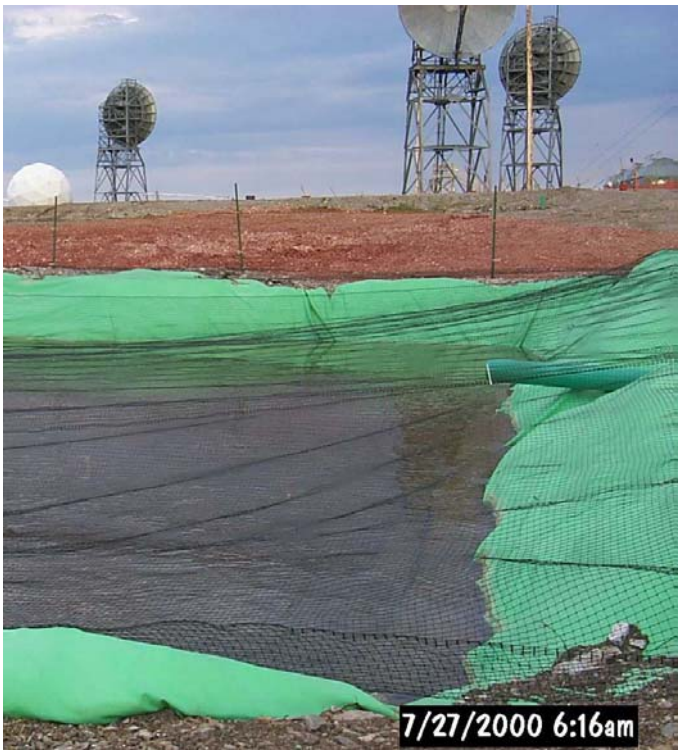
Polypropylene Netting:

The Polypropylene netting technique is applicable to northern situations and was used successfully as part of the cleanup operation of the Lady Franklin DEW Line fire. Birds were prevented from gaining access to contaminated snow and melt water.

Properly installed netting can be used to cover small areas such as a sump within a berm to large ponds. Areas for potential use of netting at the Jericho Diamond Project site include:

- Storage berms for contaminated snow.
- Land farm and tank farm sumps.
- Interception trenches and sumps.

The effectiveness of netting to exclude birds and other wildlife depends on its installation. Snow-loading and the prevention of ground entry by small mammals must be considered in the installation design. This is done by suspending polypropylene netting with a maximum mesh size of 1 ½" over top of the contaminated water and extending it down the sides of the support frame (U.S. Fish and Wildlife Service). The netting must be supported to prevent the net from sagging onto the surface of the water.



Lady Franklin DEW line contaminated water collection pond.
(Source: Andy McMullen)

Example of netting installed at a waste oil pit.
(Source: US Fish and Wildlife Service Region 6)

Proper monitoring and maintenance are necessary to prevent wildlife and migratory birds from accessing the contaminated water. Any signs of digging and any damage to netting must be repaired immediately. It may be necessary to re-stretch the netting or to adjust or add supports to keep the netting above the surface of the water.

CONTINGENCY MEASURES:

Construction during Nesting Season

Project scheduling of construction show initial construction of roads, building pads, tailings dams etc. completed prior to the arrival of nesting birds on the study area. However remote there is a possibility that some construction activity may take place during the nesting season. In order to reduce negative impacts on nesting birds and prevent costly delays in project development contingencies must be planned and agreed to ahead of time.

Ground Surveys:

Prior to construction of project infrastructure, during the nesting season, a ground survey will be conducted to search for nests. If nests are found, they will be recorded and observed to determine if they are being used (active nests). If active, nests will be marked and operators will be instructed to avoid these areas until the nesting season is over.

Deterrents:

The size of the boundaries around protected nest sites will be site specific and may be difficult to determine and discussions with regulators time consuming. If construction is to take place during the nesting season, it is more difficult to schedule activities as the discovery of an active bird nest could bring the planned construction activity to a halt. The agricultural and aviation industries used deterrent devices to prevent migratory birds from moving into certain areas. Use of these at planned construction sites for a period of time may deter birds from nesting in the area.

In the Jericho Diamond Project area no habitat has been listed as either key or critical and there is an abundance of suitable habitat outside and close by the proposed construction sites. Therefore deterrence may be acceptable; Environment Canada should be consulted in specific cases.

A number of deterrent devices are commercially available. These range from visual to acoustic devices. The exact choice of deterrent should be determined in consultation with Environment Canada prior to the arrival of migratory birds on the Jericho Diamond Project study area.

Deterrent methods should only be applied for a short time starting prior to the predicted arrival of the species most likely to nest in the type of habitat at the construction site. The deterrent season can be tailored to the species most likely to use the habitat or it could be a maximum period of early May to late June.

If the construction is already underway prior to arrival of migratory birds, human activity in the area may be the only deterrent needed.

Airport Safety

In the event that migratory birds become a safety risk to aircraft using the Jericho Diamond airstrip the company may apply to Environment Canada for an airport permit. Section 28. (1) of the regulations states, “The Minister may issue a permit to kill on the airport migratory birds that are considered by such manager, commanding officer or nominee to be a danger to aircraft operating at such airport.” Application for an airport permit would be a last resort.

RECORDING & REPORTING:

- Bird sightings are to be recorded in the wildlife sighting log.
- Any nests are to be reported to Environmental Department via direct supervisor.
- All spills are to be reported as per the Spill Prevention, Countermeasures and Control Plan.

TRAINING:

- Induction Program for all employees, contractors, and visitors will include information on reporting and avoiding active nest sights.
- Job specific training will be provided to airport staff and WRT members.
- Spill response team members will be instructed in the proper disposal and storage procedures for contaminated soils and snow.

RESPONSIBILITIES:

All Employees must:

- Record bird sightings in the wildlife sighting log.
- Report the finding of nests to supervisor.
- Avoid active nests.

The Environmental Manager must:

- Ensure that all employees are aware of migratory bird concerns.
- Ensure that Wildlife Response Team members receive deterrent procedure training.
- Ensure that the Spill Response Team members are aware of and receive training in migratory bird mitigation techniques to be used to keep birds out of contaminated water.

Airport Manager:

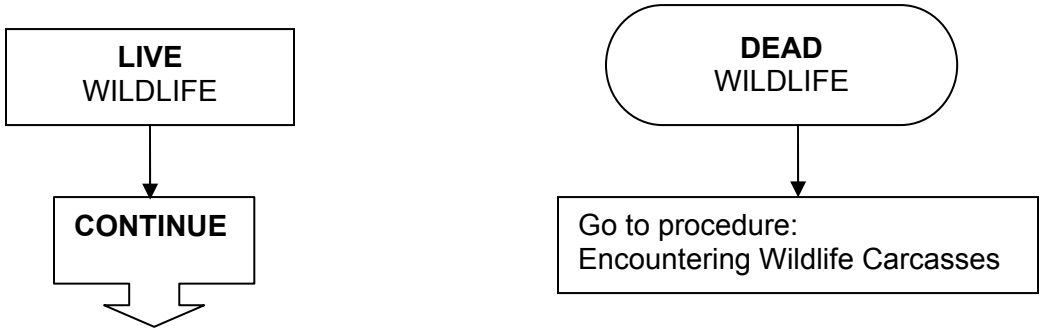
- In consultation with the Environmental Manager and Environment Canada select the most appropriate deterrent action for preventing bird / aircraft collisions.
- Ensure that staff is trained in the techniques selected.

DEFINITIONS:

REFERENCES AND RELATED POLICIES:

- Migratory Bird Act ad Regulations
- Wildlife Mitigation Plan
- Consolidated Impact Resolution Summaries (See Appendix A.)
- Spill Prevention, Countermeasures & Control Plan
- Environmental Management Plan
- Project Description – Earth Works

7. CONTINGENCY PROCEDURE: WILDLIFE ENCOUNTERS



PURPOSE

To ensure that all personnel at the Jericho Diamond Project are provided guidance on how to respond in a manner that is safe to both humans and wildlife should they encounter wildlife on or around the site. Remember, wildlife has the right-of-way.

SCOPE

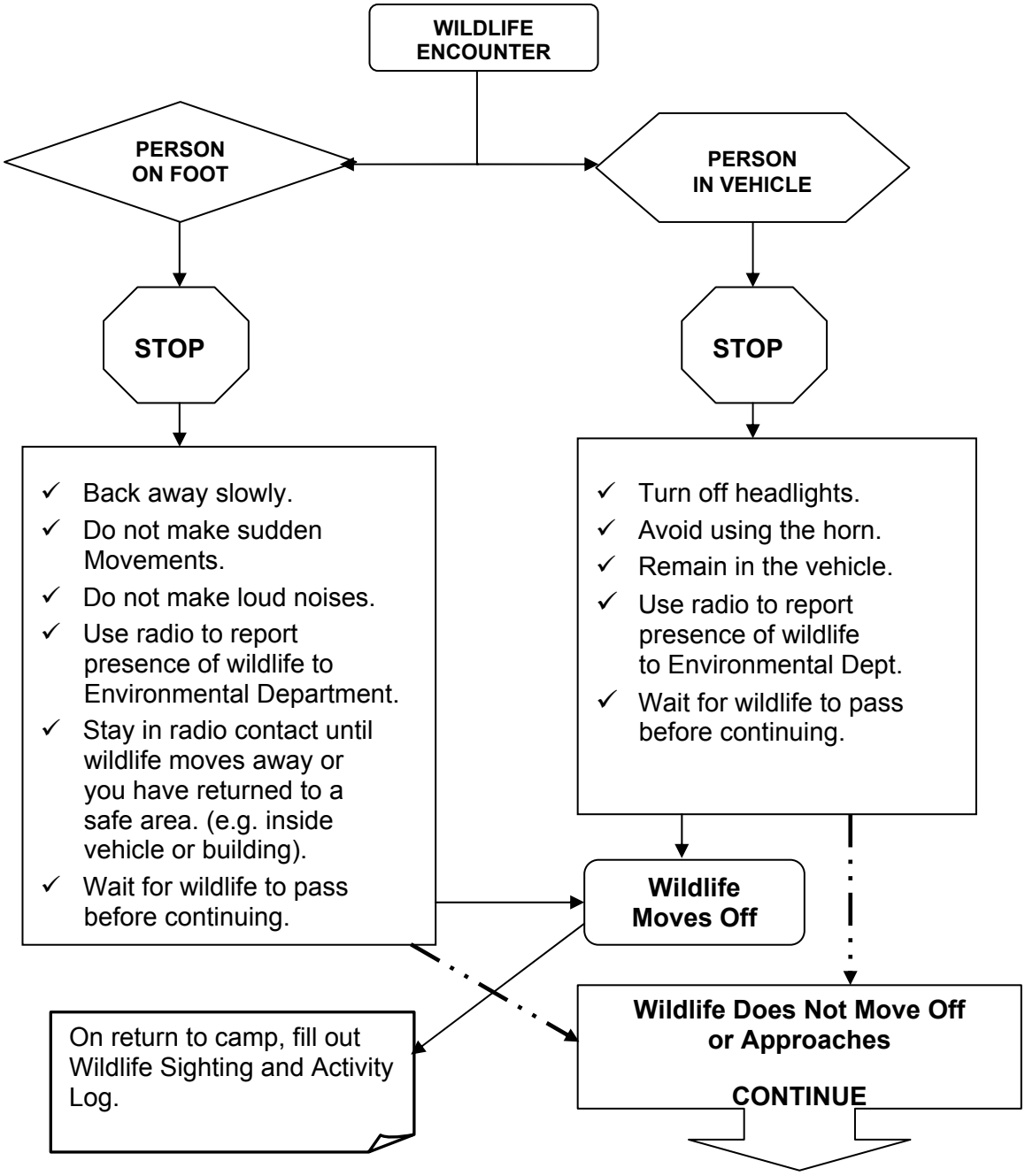
This Operation Procedure applies to all personnel at the Jericho Diamond Project, including project personnel at Carat Lake Exploration Camp, who encounter wildlife on or around the site.

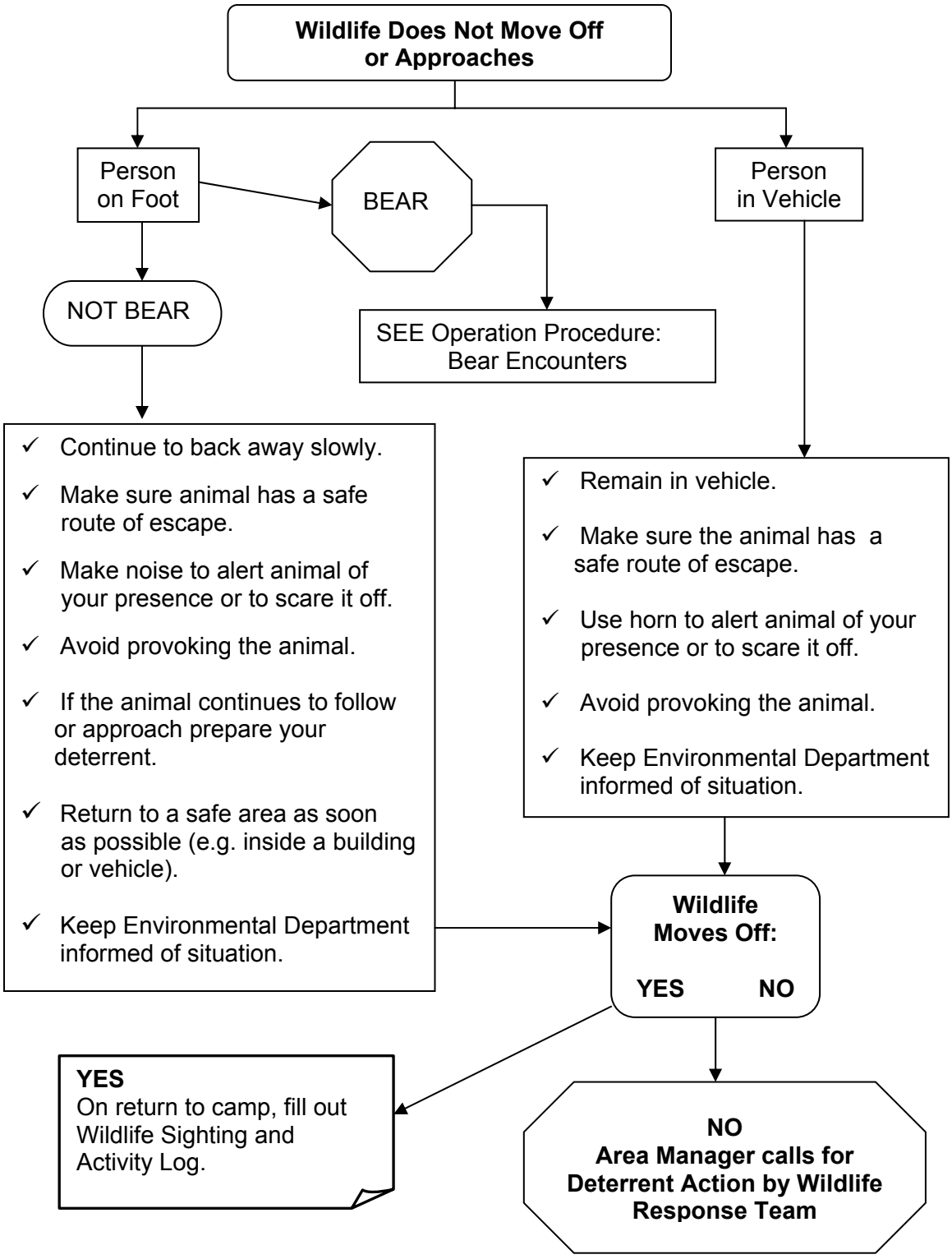
OVERVIEW

The Jericho Diamond Project area provides both year-round and seasonal habitat for wildlife species. It is important that human activity at the Jericho Project site does not result in wildlife encounters that put people or wildlife at risk. All personnel on site have a role to play in ensuring human safety, conservation of wildlife, and the documentation of wildlife activities in the area.

PROCEDURE

See following pages.


WILDLIFE ENCOUNTER
PERSON ON FOOT
PERSON IN VEHICLE
STOP
STOP
✓ Back away slowly.
✓ Do not make sudden Movements.
✓ Do not make loud noises.
✓ Use radio to report presence of wildlife to Environmental Department.
✓ Stay in radio contact until wildlife moves away or you have returned to a safe area. (e.g. inside vehicle or building).
✓ Wait for wildlife to pass before continuing.
✓ Turn off headlights.
✓ Avoid using the horn.
✓ Remain in the vehicle.
✓ Use radio to report presence of wildlife to Environmental Dept.
✓ Wait for wildlife to pass before continuing.
Wildlife Moves Off
Wildlife Does Not Move Off or Approaches
CONTINUE
On return to camp, fill out Wildlife Sighting and Activity Log.


Wildlife Does Not Move Off or Approaches
Person on Foot
BEAR
Person in Vehicle
NOT BEAR
SEE Operation Procedure: Bear Encounters
✓ Continue to back away slowly.
✓ Make sure animal has a safe route of escape.
✓ Make noise to alert animal of your presence or to scare it off.
✓ Avoid provoking the animal.
✓ If the animal continues to follow or approach prepare your deterrent.
✓ Return to a safe area as soon as possible (e.g. inside a building or vehicle).
✓ Keep Environmental Department informed of situation.
✓ Remain in vehicle.
✓ Make sure the animal has a safe route of escape.
✓ Use horn to alert animal of your presence or to scare it off.
✓ Avoid provoking the animal.
✓ Keep Environmental Department informed of situation.
Wildlife Moves Off:
YES NO
YES
On return to camp, fill out Wildlife Sighting and Activity Log.
NO
Area Manager calls for Deterrent Action by Wildlife Response Team

RESPONSIBILITY

Every individual is responsible for:

- Recording the sighting on the Wildlife Sighting and Activity Log.
- Reporting the sighting / encounter to the Environmental Department.

The Environmental Department is responsible for:

- Completing Wildlife Encounter / Deterrent Report
- Reporting the sighting / encounter to NDE.
- Calling for Wildlife Response Team action.

DEFINITIONS

NDE: Government of Nunavut Department of Environment

REFERENCES AND RELATED POLICIES

Jericho Diamond Project General Site Rules

Operational Procedure: Wildlife Sighting and Activity Log (See Section 3.)

Operational Procedure: Bear Encounters (See Section 8.)

Operational Procedure: Wildlife Response team – Bear response (See Section 9.)

Operational Procedure: Reporting Bear Sighting (See Section 4.)

Operational Procedure: Encountering Wildlife Carcasses (See Section 13.)

8. CONTINGENCY PROCEDURE: BEAR ENCOUNTERS

PURPOSE

To ensure that personnel understand the steps to take if they inadvertently encounter a bear.

This does not replace appropriate levels of bear safety training.

SCOPE

This applies to bear encounters for all personnel working at the Jericho Diamond Project site including exploration crews.

OVERVIEW

The Jericho Diamond Project is located within know range of the Barren-Ground Grizzly Bear. Grizzly bears are active in the area from late April to late October. Grizzly bear sightings in the Jericho area are a yearly occurrence. Most bears avoid encounters with humans if they detect them in time. However if cornered, threatened or surprised, a bear can be aggressive.

PROCEDURE

Prevention:

- Be alert at all times.
- Respect all bears – they can be dangerous.
- Never approach a bear for any reason.
- Never feed bears or other wildlife.
- Make sure someone knows where you are going and when you plan to return.
- Always carry a portable radio or other communication device to contact the main site.

Encounter:

There is always a possibility you may surprise a bear at close range, or encounter a bear unafraid of people. Though there is no guaranteed formula for reacting to a bear encounter, each one being unique, the following tips may help.

- Stop, stand still and stay calm.
- Assess the situation.
- Slowly back away keeping your eye on the bear. Do not run.
- If the bear is aware of you, help the bear identify you as human by talking in a low voice and slowly waving your arms. Moving upwind will help the bear get your scent.
- Go to a safe location i.e. inside a building or vehicle.
- Use your radio to alert Environmental Department of your situation.

TRAINING

- Site safety training is required.
- Bear safety awareness.

RESPONSIBILITY

Every individual is responsible for:

- Reporting the Encounter to the Environmental Department.
- Recording the Encounter in The Wildlife Sighting and Activity Log

The Environmental Department is responsible for:

- Completing the Wildlife Encounter Report
- Reporting the Encounter to NDE, Kugluktuk.
- Dispatching vehicle or helicopter to remove persons to a safe location.
- Dispatching Wildlife Response Team if required.

Wildlife Response Team is responsible for:

- Providing deterrent action if encounter is within the mine footprint.

DEFINITIONS

NDE: Government of Nunavut Department of Environment

REFERENCES AND RELATED POLICIES / PROCEDURES

Operational Procedure: Reporting Bear Sighting and Encounter (See Section 4.)

Operational procedure: Wildlife Sighting and activity Log (See Section 3.)

9. CONTINGENCY PROCEDURE: WILDLIFE RESPONSE TEAM - BEAR RESPONSE

PURPOSE

To ensure that all on-site personnel assigned responsibility for responding to bear sightings, encounters and bears in camp, understand the appropriate procedures for dealing with these situations.

SCOPE

This procedure applies to all Jericho Diamond Project Wildlife Response Team (WRT) members and designated individuals, who are responsible for dealing with bear encounters or a bear in the camp. The number of people on-site and the levels of activity will fluctuate during the construction, operation and decommissioning phases of the project and there will not always be a Wildlife Response Team available; alternatives must be assigned that role by the Environmental Manager.

OVERVIEW

There are a number of reasons why bears and people might encounter each other. The bear may be attracted to the facilities, food or garbage odours, or it may be curious. What ever the reason for the encounter, it is important to deal with the situation quickly and efficiently to ensure the safety of people and bears.

For the purposes of this procedure any time a bear approaches within 100 m of an area of human activity, a WRT response will be initiated. “Area of Human Activity” - means any area within the project footprint where people are active. The size of this area will increase and decrease based on the level and location of activity on site. For example when there are only a few people in camp and no one is working outside of the camp area, there will be no need to deter a bear on or near the runway. However there will also be areas of the project where bears will not be allowed regardless of the level of activity on site. These areas include:

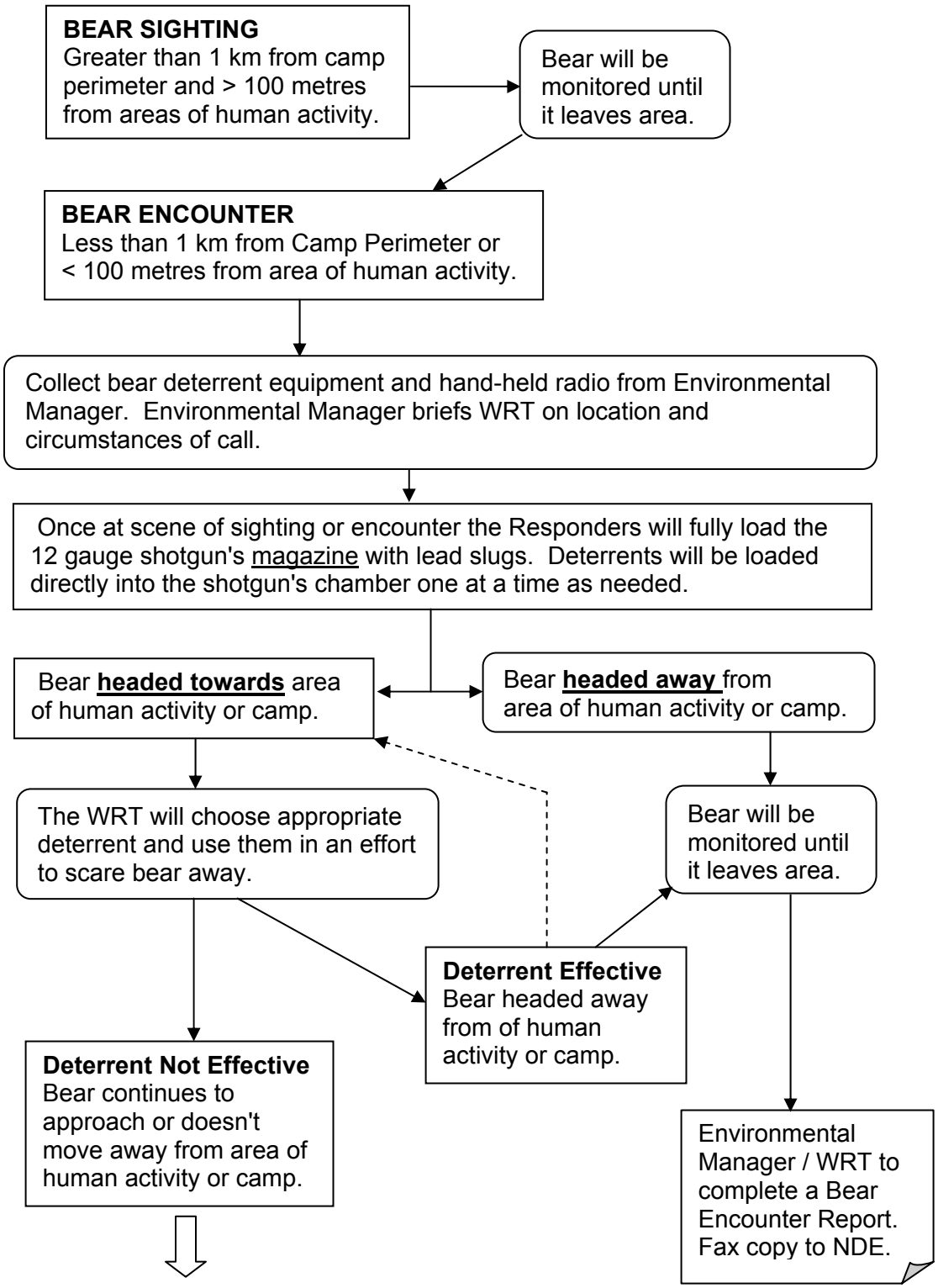
- the accommodation complex including the dorms, kitchen, office, dry, first aid, sewage plant, and incinerator.
- the mining infrastructure, including open pit, explosive storage, mining shop, tank farm, processing plant, land fill, laydown areas, and other areas that could present a risk to the bear.

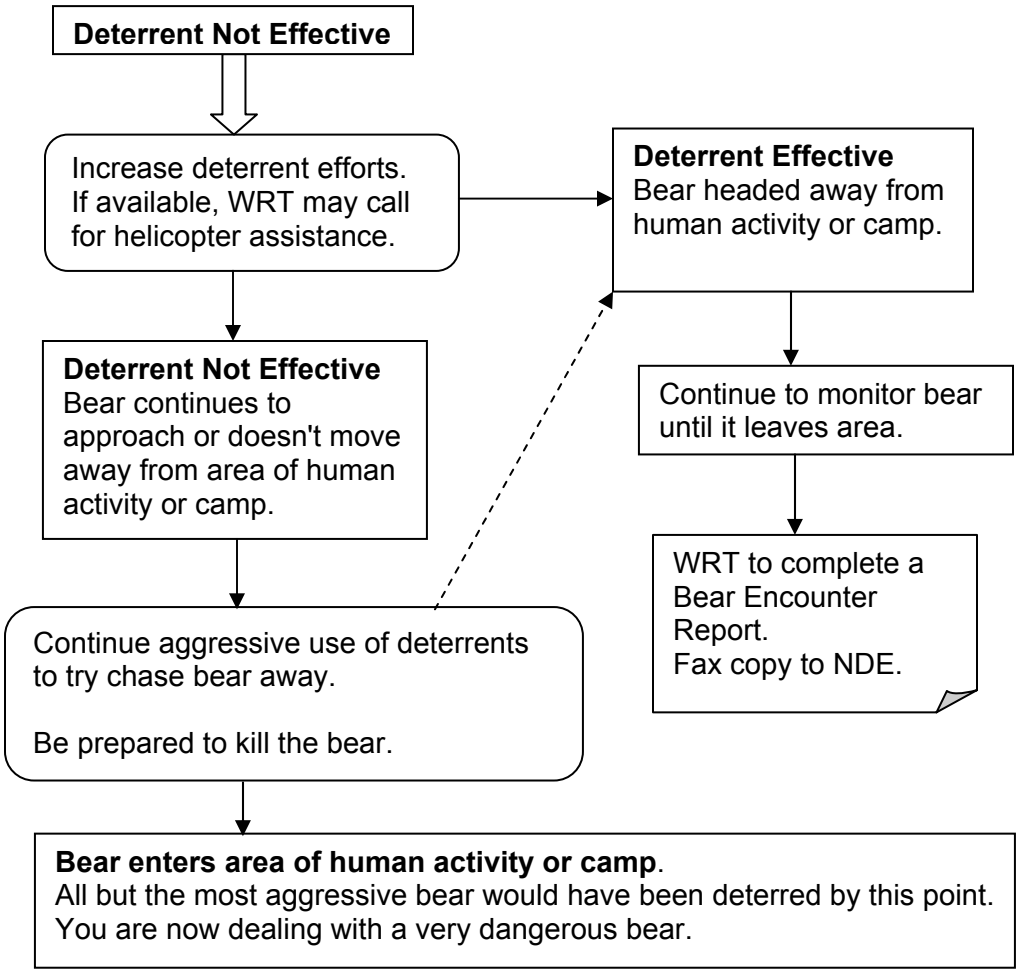
The intent is to:

- prevent risk of injury to humans.
- prevent bears from becoming habituated to the site and its infrastructure.
- prevent bears from seeking refuge around buildings or in equipment storage or laydown areas.
- prevent bears from gaining access to areas or substances that could be harmful to the bear, i.e. fuel and chemical storage.

PROCEDURE FOR BEAR ENCOUNTER

WARNING: When responding to a bear encounter or a bear in camp there should be a minimum of two responders.



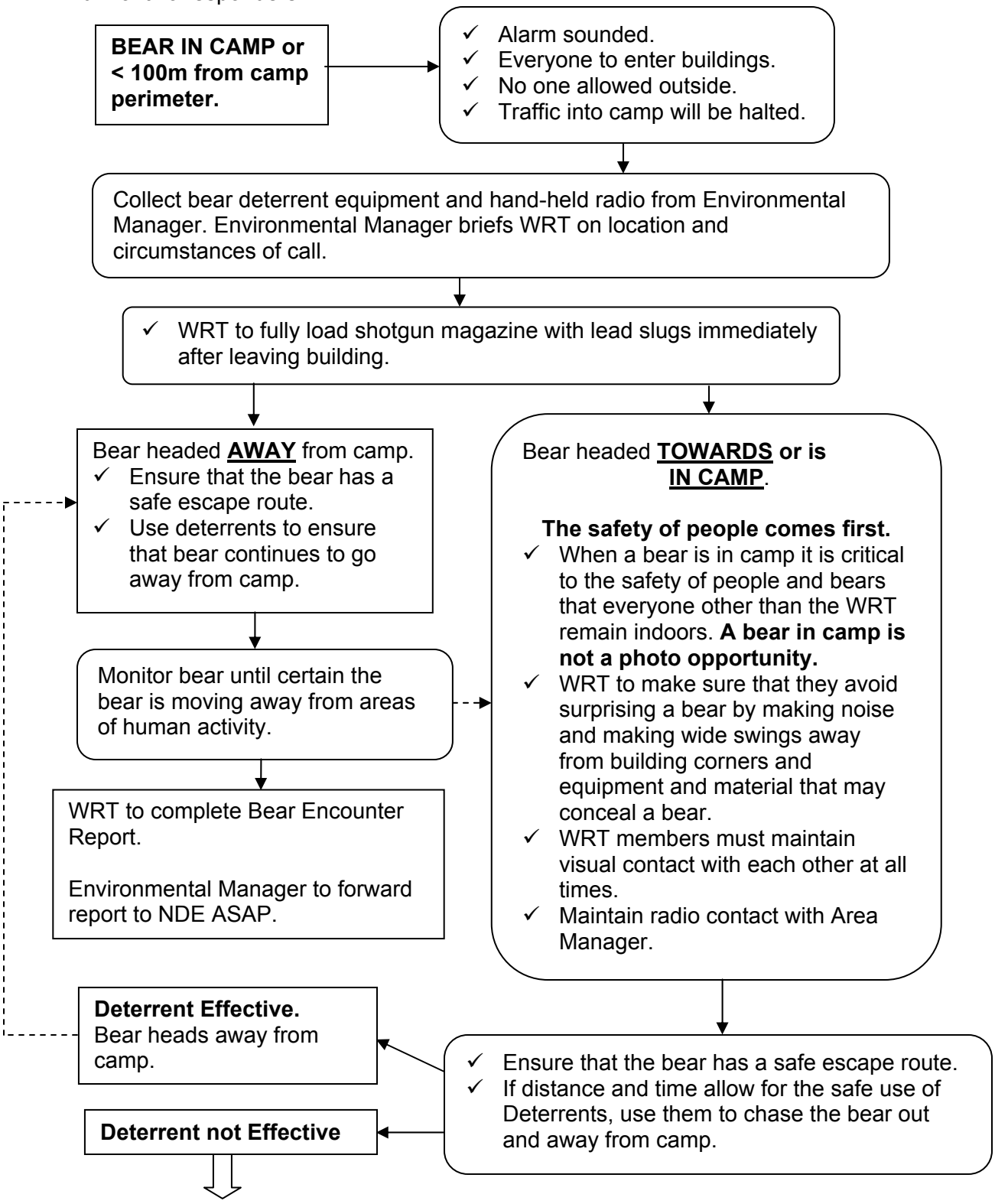


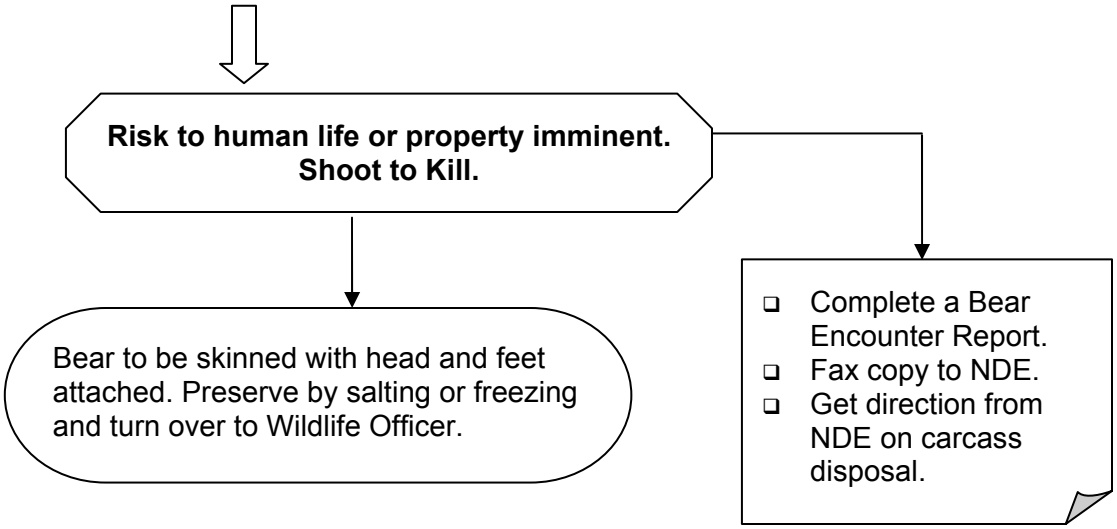
Any time a bear approaches or enters areas of human activity, do a site investigation to try determine why the bear was attracted to the site. Record findings in bear encounter report.

If attractant found, deal with it immediately.
Failure to deal with the attractant will only lead to more problems.

PROCEDURE FOR BEAR IN OR NEAR CAMP

WARNING: When responding to a bear encounter or a bear in camp, there should be a minimum of two responders.





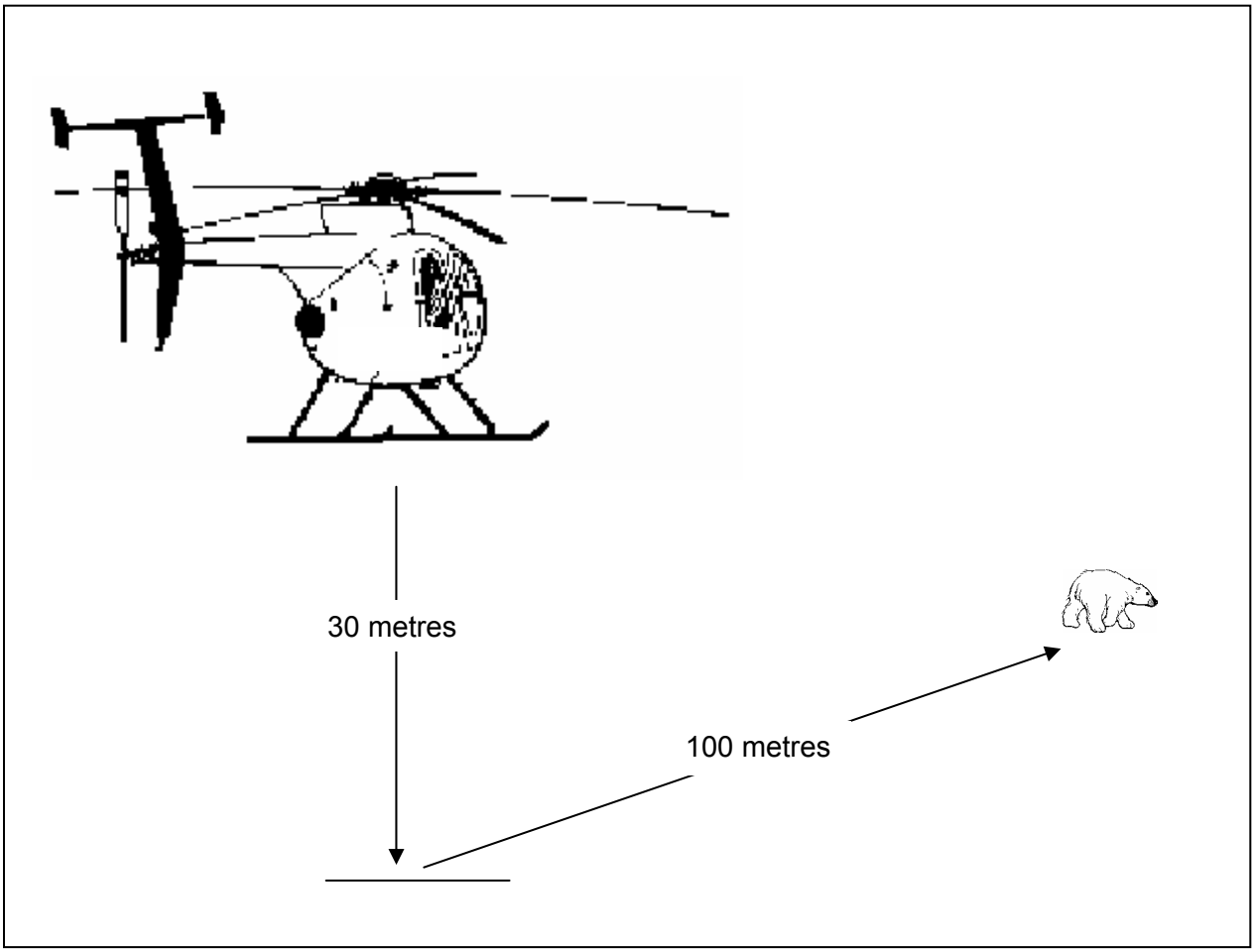
Any time a bear approaches or enters areas of human activity do a site investigation to determine why the bear was attracted to the site. Record findings in bear encounter report.

If attractant found, deal with it immediately.
Failure to deal with the attractant will lead to more problems.

Using a Helicopter to Deter a Bear – if / when available

It is illegal to harass wildlife with aircraft. However, occasionally, and only for reasons of human safety, it may be necessary to "push" a bear using a helicopter. When using a helicopter to deter a bear from the Jericho Diamond Project site, the following procedures must be followed:

- At least one member of the WRT must be on board the helicopter. They will be responsible for the safety of the bear and will provide instructions to the pilot. The pilot is responsible for his aircraft and the safety of the people on board; he has final say.
- The pilot must maintain radio contact with WRT members on the ground.
- To stress the bear as little as possible, the pilot must keep the helicopter well back from the bear. The minimum distance between the helicopter and the bear is 100 metres back and 30 metres up.
- The pilot should only get close enough to get the bear to move, not fly over it. A bear moving at a fast walk can cover a lot of ground quickly and efficiently. There is no need to have the bear running; a running bear may become overheated and injure itself.
- The pilot must keep the bear in visual contact. However the pilot is to take the helicopter to a higher altitude rather than get closer than the minimum distances.
- The pilot must keep the helicopter between the bear and the site to prevent pushing the bear into camp.



Helicopter minimum chase distance

DO NOT push a bear for more than ten minutes or 3 km (2.2 miles).

- Once the WRT member is satisfied that the bear is moving away, he will direct the pilot to stop pursuing the bear even if they are within the 10 min / 3 km zone. He will direct the pilot to take the helicopter up to an altitude where they can continue to monitor the bear to ensure that it is not returning.
- Once satisfied that the bear presents no further risk, the helicopter will return to camp.

Destroying a Problem Bear

Deciding exactly when to shoot a bear is a difficult decision to make and is wholly dependent on the prior experience and training of the WRT. For this reason there is no set distance at which to pull the trigger.

The bear must be shot when personnel are in immediate danger of attack, or if the bear can not be deterred without endangering human life.

Before You Shoot

Always consider what is beyond the bear as the slug may pass through the bear or you may miss your target.

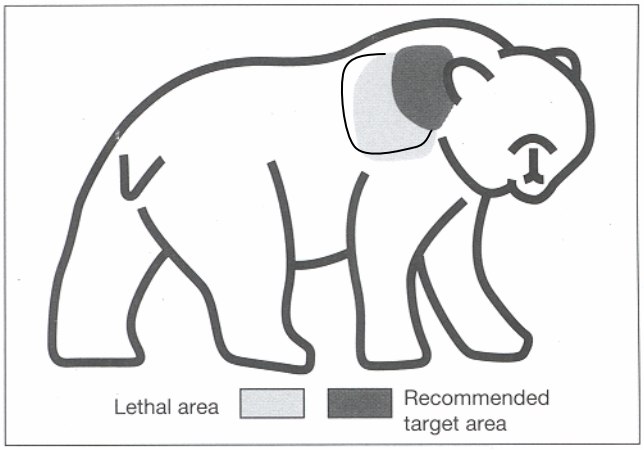


Figure 5. Area of instant kill or disabling shot.

It is very difficult to kill a charging bear. The first shot is intended to stop or knock down the bear not kill it.

If the bear is standing sideways – shoot at the large shoulder and into the chest area.
When the bear is facing head on, shoot into the neck and top of the shoulders. Once the bear is stopped or down, use the remaining lead slugs to kill the bear. A minimum of two shots must be made into the vital areas.

Do not approach the bear until you have reloaded the shotgun and you are sure it is dead.

The hide must be removed, with the claws and the head attached, and kept from spoiling by salting or freezing. The hide and skull must be turned over to a NDE Wildlife Officer ASAP.

The carcass will be disposed of under the direction of NDE.

If a bear is shot, return to camp and report to the Environmental Manager. The WRT and Environmental Manager will complete Bear Encounter Report. The Environmental Manager will report the incident to NDE immediately.

NDE Contacts:

Allen Niptanatiak, Wildlife Officer II, or
Colin Adjun, Wildlife Officer I
Nunavut Department of Environment, Kugluktuk 867-982-7450
Kitikmeot Regional Office 867-982-7440

All cases of the WRT driving a bear off or which involve shooting a bear must be reported immediately.

TRAINING

- Wildlife Response Team members and designated individuals will be required to hold a valid Canadian Possession-Acquisition Firearms Licence.
- Advanced Bear Safety Training is required. This training will include sessions on bear biology, bear behaviour, and bear human encounters, what to do in an encounter, prevention, detection and deterrents. Training will also include sessions on the proper use of deterrents, bear response planning and reporting procedures.

RESPONSIBILITY

The Wildlife Response Team is responsible for:

- Recording the sighting on the Wildlife Sighting and Activity Log.
- Recording encounters and kills on Wildlife Encounter Report.
- Skinning and preserving bear hide complete with claws and skull.

The Environment Manager is responsible for:

- Reporting the bear encounter or kill to NDE.
- Forwarding all Wildlife Encounter Reports to NDE via Fax.
- Contacting NDE for direction on carcass disposal.
- Ensuring that the carcass is handled properly, and the skin and head are delivered to NDE in a timely manner.

DEFINITIONS

NDE: Nunavut Department of Environment

Area of Human Activity: Includes any area within the project footprint where human activities are taking place.

REFERENCES AND RELATED POLICIES

Operational Procedure – Bear Encounters (See Section 8.)

Operational Procedure – Reporting Bear Sightings & Encounters (See Section 4.)

Operational Procedure – Encountering Wildlife Carcasses (See Section 13.)

Bear Deterrents (See Appendix B.)

Bear Deterrent Summary Tables (See Appendix C.)

Deterrent Report (See Appendix D.)

Wildlife Safety Training Plan (See Section 2.)

10. MITIGATION / CONTINGENCY PROCEDURE: WILDLIFE DETERRENT PLAN

GOAL:

Respond to wildlife situations in ways that keep both humans and wildlife safe using humane wildlife control methods.

OBJECTIVES:

3. To provide direction to the Wildlife Response Team (WRT) members on techniques and procedures to be used to deter wildlife where wildlife may pose a threat to itself, people or property.
4. To provide background information on the various deterrent devices that may be applicable for deterring wildlife that is likely to be encountered at the Jericho Diamond Project.
5. To promote cooperative efforts that help industry, public agencies, and governments share and integrate information related to wildlife deterrent efforts.

GUIDING PRINCIPLES:

1. As a first priority WRT members will take mitigation actions.
2. All deterrent actions taken will start with the least intrusive methods, and then increase in intensity up to the point that wildlife may be relocated or destroyed.
3. Contingency measures will be taken to remove wildlife from:
    - Service roads during a medical or environmental emergency.
    - Airstrip prior to landings and take-offs.
    - Inside exclusion fencing.
    - Potentially hazardous sites and activities.
4. The Wildlife Deterrent Plan actions are set out from methods that are least intrusive to those that are most intrusive. Animal behaviour and level of threat to humans or wildlife will guide Wildlife Response Team personnel in selecting the initial deterrent action.

    These are guidelines; not rules to be followed blindly.

1. When contingency measures are necessary, actions will be taken to analyze and report the problem and find a solution.

2. Deterrent actions taken should minimize interruption to construction, mining and other operational activities while still ensuring human and wildlife safety.

DETERRENT ACTION:

Mitigation activities are taken to lessen the likelihood that wildlife will:

- Become habituated to the site and its infrastructure.
- Obtain a food reward.
- Find shelter around buildings or in equipment storage or lay-down areas.
- Gain access to areas or substances that could be harmful to it, i.e. fuel and chemical storage.
- Be injured, i.e. collision with vehicle.
- Damage mine property.

Contingency measures are taken to remove wildlife from roads, airstrip, inside exclusion fencing and potentially hazardous sites and activities. Sites and activities potentially hazardous to wildlife include:

- Anywhere on the gravel pad on which the camp complex and mill facilities are located
- Remote sites, i.e. Explosive Magazine
- Open pit
- Fuel or chemical storage areas
- Container storage and lay-down areas
- Land Fill
- Land Farm
- Quarries and the "Safe Zone" of any surface blasting.

The only goal of deterrent actions is to ensure the safety of both humans and wildlife. Each deterrent action will stop as soon as the animal moves away from the potentially hazardous site or activity. The intensity of the contingency measure should increase only if the animal is not doing what it is intended to do.

Before taking any deterrent action, the Wildlife Response Team must first:

- Ensure that a safe avenue of escape is obvious and available to the animal.
- Establish and maintain radio contact with the appropriate managers to ensure that:
    - Traffic and other activities do not put the wildlife at additional risk.
    - Safe escape routes for the animal are protected or created.
    - People working in the area are warned of the planned deterrent action and told what to do, i.e., enter buildings or remain indoors.

Wildlife should be relocated or killed only as a last resort. Relocation of wildlife is to be done by the Government of Nunavut's Department of Environment (NDE). If the wildlife is not an immediate threat to human safety, the decision to kill the animal must be made only in consultation with NDE.

Additional deterrent guidance specific to situations and certain species follows in:

- Wildlife Response Team Response to a Bear on Site
- Deterring Wolverine, Wolf and Foxes
- Herding Caribou

TRAINING:

Knowledgeable, trained personnel will select deterrent actions based on each wildlife situation. Wildlife control personnel must:

- Consistently increase skills,
- Evaluate the use of various deterrent techniques in specific situations, and
- Persist with actions to deter wildlife.

All Wildlife Response Team members and designated individuals will be required to hold a valid Canadian Possession-Acquisition Firearms Licence.

All Wildlife Response Team members will be required to take Advanced Bear Safety and Wildlife Deterrent Training specific to caribou, muskox, wolverine, wolf and foxes. This training will include sessions on:

- Wildlife ecology and behaviour,
- Prevention of wildlife-human encounters,
- Contingencies for wildlife human encounters,
- Proper use of deterrents,
- Recording and reporting procedures.

INVESTIGATION:

Following every deterrent action the Wildlife Response Team will try to determine why the animal was there or how it got inside a hazard area. Steps will be taken immediately to ensure practical corrective measures are implemented.

RECORDING & REPORTING:

Every deterrent action is to be recorded on a Wildlife Deterrent Report and submitted to the Environmental Manager for forwarding to NDE.

RESPONSIBILITY

The Environment Manager is responsible for:

- Appointing a Wildlife Response Team and ensuring that the WRT members receive appropriate training.
- Reporting the bear encounter or kill to NDE.
- Forwarding all Wildlife Deterrent Reports to NDE via Fax.
- Contacting NDE for direction on carcass disposal.
- Ensuring that the carcass is handled properly, and the skin and head are delivered to NDE in a timely manner.

The Wildlife Response Team is responsible for:

- Deterring wildlife that is either endangering itself, humans or property.
- Recording the sighting on the Wildlife Sighting and Activity Log.
- Recording encounters and kills on Wildlife Deterrent Report.
- Skinning and preserving bear hide complete with claws and skull.

DEFINITIONS

NDE: Government of Nunavut Department of Environment.

Area of Human Activity: Includes any area within the project footprint where human activities take place.

REFERENCES AND RELATED POLICIES

Operational Procedure – Bear Encounters (See Section 8.)

Operational Procedure – Reporting Bear Sightings & Encounters (See Section 4.)

Operational Procedure – Wildlife Response Team - Bear Response (See Section 9.)

Operational Procedure – Encountering Wildlife Carcasses (See Section 13.)

Bear Deterrents (See Appendix B.)

Bear Deterrent Summary Tables (See Appendix C.)

Deterrent Report (See Appendix D.)

Wildlife Safety Training Plan (See Section 2.)

11. MITIGATION / CONTINGENCY PROCEDURE: CARIBOU HERDING PROCEDURES

INTRODUCTION

The Jericho Diamond is located on the Bathurst caribou herd summer range. Large concentrations of caribou with and without calves have been observed passing through the Jericho Project area travelling both north and south in summer months. Movement of caribou through the area during spring migration is significant but the observations made (Hubert and Associates Ltd., 2002) suggest that spring migration through the Project area is characterized by a steady stream of smaller herds (100's) as opposed to the summer observations which are either that of small numbers (<10) moving very little, or very large herds (>1,000) moving quickly.

Plans need to be in place to reduce the risk of injury to caribou that come into contact with the project site and its infrastructure. Additionally, plans need to be in place for dealing with large numbers of caribou encountering the Jericho Project site and associated activities. During periods of migration and summer movements, concentrations of up to 15% of the Bathurst Herd may be in the vicinity of the Project for brief periods of time as occurred June 30, 1996 (Gunn, 1996 observations, unpublished). Group sizes of more than five hundred caribou could be difficult to effectively herd away from roads or the airstrip. In these cases, the safest option would be to allow the caribou to move through the area.

Select a level of action appropriate to the situation and least intrusive to the caribou. Deterrent actions taken to herd caribou should be based on the number of caribou, the potential for risk to wildlife or human safety, and the potential for interruption to construction, mining and operational activities. For general guidance, see Deterrent Actions in the introduction section of the Deterrent Plan. This section guides actions to be taken for caribou at specific locations or hazards.

Before taking any herding action the Wildlife Response team must first:

- Ensure that a safe avenue of escape is obvious and available to the caribou.
- Establish and maintain radio contact with the appropriate site managers and Environmental Manager to ensure that:
    - Traffic and other site activities do not put the caribou at any further risk.
    - Safe escape routes for the caribou are protected or created.
    - People working in the area are warned of the planned herding action.

Large Numbers of Caribou (>500)

If it were absolutely necessary to take herding action with a large number of caribou, the Wildlife Response Team would need to recruit other site personnel to assist. The number of available personnel will dictate what action can be taken.

Caribou herding actions for large numbers of animals are intended to:

- Encourage the caribou to continue moving and decrease the time of exposure to potential risk, or
- Attempt to deflect the caribou around a hazard.

Recording and Reporting

Every herding action is to be recorded on a Wildlife Deterrent Report and submitted to the Environmental Manager who will send a copy of the report to NDE.

ROADS

In general:

- Caribou and other wildlife have the “right of way”.
- Caribou will not be blocked from crossing roads. If caribou are crossing or attempting to cross the winter road, eskers, or site roads, traffic will stop and wait for them to finish crossing.
- Caribou within 100 metres of the site service roads or winter road will be monitored. A herding action will only be taken if an immediate risk to wildlife or human safety exists.

WRT members will take a herding action on or adjacent to roads when:

- Caribou crossing the roads stall and appear to be ready to bed down or remain on the road surface.
- Caribou are on the road at the time of a medical emergency or toxic spill response that requires the use of the road.

Procedures for Caribou Herding

All herding actions begin with those that cause the least disturbance to the caribou. Each action starts at the lowest appropriate level and moves to the next level only if absolutely necessary. The aim is to deter the caribou from hazardous situations so that the risk of injury is decreased. Deterrent actions should not cause unnecessary stress to the animal.

Level 1.

- With the vehicle headlights on, approach the caribou slowly (<5 km/hr.) When the caribou start to move, stop and allow them to move off on their own.
- If the caribou stop moving, once again make a slow approach.
- Avoid using the horn.
- Avoid causing the caribou to run. While climbing or descending road embankments, an injury could occur.
- When the caribou leave the road, continue to monitor them until they have moved off to approximately 100 metres from the road.

Level 2.

- Slowly approach caribou on foot only to a distance close enough to get the caribou to move. Once they start to move, stop your approach.
- If the caribou stop moving, continue your approach.
- When the caribou leave the road, continue to monitor them until they have moved off to approximately 100 metres from the road.

Level 3.

- If caribou are not responding to close approaches by people on foot, it may be necessary to increase the disturbance to the animal(s). Continue to approach but make noise by clapping hands or shouting.
- If clapping and shouting do not cause the caribou to move off, use an air horn.

- Use noise making explosive type deterrents, only as a last resort.
- Only do what is necessary to get the caribou to move.
- Continue to monitor the caribou until they have moved off to approximately 100 metres from the road.

AIRSTRIP

In general:

Caribou will not be blocked from crossing the airstrip. If caribou begin to cross the airstrip, incoming aircraft will be notified to either enter a holding pattern until the caribou have completed their crossing, or divert to an alternate airstrip if necessary. In these situations herding action may be necessary to ensure that the caribou continue to cross and move away from the airstrip.

Wildlife Response Team members will take action to herd caribou in the vicinity of the airstrip when:

1. Any number of caribou are within 100 metres of the airstrip twenty minutes prior to aircraft arrivals or departures.
2. Any number of caribou are bedding on or using the airstrip for insect relief twenty minutes prior to aircraft arrivals or departures.
3. Caribou crossing the airstrip stall and appear to be ready to bed down or remain on the airstrip.

Procedures for Caribou Herding

Twenty minutes prior to aircraft landing, and immediately prior to aircraft takeoff, airport / security staff will slowly drive the entire length of the airstrip to search the airstrip and its immediate vicinity for caribou. If caribou are spotted on or within 100 metres of the airstrip, the airport staff should start a “Level 1” herding action.

Caution:

During landings and takeoffs caribou should not be closer than 100 metres from the edge of the airstrip. Caribou within this zone could become panicked by the noise of landing or departing aircraft. This panic could cause them to run onto the airstrip or injure themselves as they try to escape.

Level 1.

- With the vehicle headlights on approach the caribou slowly (<5 km/hr.) When the caribou start to move, stop and allow them to move off on their own.
- If the caribou stop moving, once again make a slow approach.
- Avoid using the horn.
- Avoid causing the caribou to run; they may injure themselves.
- When the caribou leave the airstrip, continue to monitor them until they have moved off to approximately 100 metres from the airstrip.
- If caribou do not move off the runaway, or remain within 100 metres of the airstrip, airport / security staff will contact the Wildlife Response Team to request further herding actions.

The airport staff will transport the Wildlife Response Team to where the caribou are located. This limits the number of vehicles on the airstrip but allows the Wildlife Response Team to

remain at the site during a landing or takeoff. Further actions may be necessary to prevent the caribou from attempting to get onto, or across, the runway.

The Wildlife Response Team will proceed with a "Level 2" herding action.

Level 2.

- Members of the Wildlife Response Team slowly approach caribou on foot only to a distance close enough to get the caribou to move. Once caribou start to move, stop the approach.
- If the caribou stop moving, continue the approach.
- Continue to monitor caribou until they have moved off to approximately 100 metres from the edge of the airstrip.
- If the caribou stop within the 100 metre zone, continue the approach. Keep the caribou moving until they are greater than 100 metres from the edge of the airstrip.
- If the caribou are reluctant to move off, or appear that they might try to return to the airstrip, the Wildlife Response team will remain on site positioned between the caribou and the airstrip until the aircraft has safely landed or taken off.

Level 3.

- If caribou are not responding to close approaches by people on foot, then it may be necessary to start making noise. Continue to approach but make noise by clapping hands or shouting.
- If clapping and shouting does not cause the caribou to move off, use an air horn. Only do what is necessary to get the caribou to move.
- If the caribou stop moving, continue your approach.
- If the caribou stop within the 100 metre zone, continue your approach. Keep the caribou moving until they are more than 100 metres from the edge of the airstrip.
- The herders should remain positioned between the caribou and the runway to prevent the caribou from returning prior to the safe landing or take-off of aircraft.
- Use noise making explosive type deterrents only as a last resort.

INSIDE EXCLUSION FENCING

Although exclusion fencing is designed to keep caribou and other wildlife out of areas where a hazard might exist, there is a potential that wildlife may get inside a fence and become trapped. The most likely cause will be from people not closing gates. Any number of caribou within an exclusion fence requires a herding action.

Procedures for Caribou Herding

Extreme care must be taken when dealing with caribou trapped within exclusion fencing. In order to free the caribou a person may have to come very close to open a gate or provide an escape route for the caribou. A panicked caribou might injure itself on the fencing or enter the hazard the fence was intended to surround.

In each case the WRT member will perform the following actions beginning at the lowest possible level appropriate to the situation. The aim is to get wildlife out of the hazardous situation without causing unnecessary stress or injury to the animal(s).

Level 1.

- Use binoculars to assess the situation from a safe distance and minimize any further stress to the caribou.
- One member of the WRT will approach the fence and open all gates starting with the one that provides the caribou with the shortest and safest escape route.
- Once all gates are open the WRT member will retreat to join the rest of the team.
- The WRT will monitor the caribou giving it enough time to find an opening and escape.
- If the caribou is unable to find the opening, or its movements inside the fence put it at any risk, the WRT will proceed to "Level 2".

Level 2.

- The WRT will approach the fence slowly from the direction that will cause the caribou to move towards the opening in the fence, but without driving it into the potential hazard. The WRT will remain on the outside of the fence and only approach close enough to get the caribou to move in the right direction.
- Once the caribou is outside the fence, the WRT will ensure that all gates are closed.

Level 3.

- If the caribou is unable to spot the opening, or is reluctant to go through the opening, make the opening larger if possible. Cut the chain link fasteners and peel back one or two sections of the fencing. *(If during construction, the fencing fabric is marked with fluorescent orange paint at joints or overlaps, this process will be quicker.)*
- Once a larger opening is made, move away from the fence so that the caribou can find the opening itself.
- If the animal still does not exit the fence, once again try to herd the caribou from the outside of the fence by making noise in an appropriate location.

Level 4.

- If the WRT is not able to direct the caribou from the outside of the fence, enter the fence at the opening that is furthest from the opening that the caribou should go out.
- Slowly approach the caribou to herd the animal(s) towards the nearest safe escape route.
- Use burlap and wooden stakes to construct a wing fence that will help direct the caribou to, and through, the fence opening.
- If necessary recruit other people to assist with the herding action.

POTENTIALLY HAZARDOUS SITE OR ACTIVITY

Potential hazardous sites or activity include:

- Anywhere on the gravel pad on which the camp complex and mill facilities are located.
- Remote sites i.e. tailings containment area.
- Open pit.
- Fuel or chemical storage areas.
- Laydown areas.
- Land Fill.
- Land Farm.
- Quarries and "Safe Zone" of any surface blasting.

If any number of caribou attempt to gain access to, or are found within, any potential hazard site or activity, herding action must be taken.

Procedures for Caribou Herding

Most potential hazardous sites are located in the areas of highest activity. For this reason it is critical to:

- Establish and maintain radio contact with the appropriate site supervisors and Environmental Manager. This ensures that:
  - Traffic and other site activities do not put the caribou at any further risk.
  - Safe escape routes for the caribou are protected or created.
  - People working in the area are warned of the planned herding action.

In each case the WRT member will perform the following actions beginning at the lowest possible level appropriate to the situation. The aim is to get wildlife out of the hazardous situation without causing unnecessary stress to the animal(s).

Level 1.

- Use binoculars to assess the situation from a safe distance and minimize any further stress to the caribou.
- Use a detailed site map to identify other risks in the area and the safest escape route for the caribou.
- Communicate what actions are required of Environmental Managers and managers to help facilitate the safe movement of the caribou away from the hazard.

Level 2.

- Once a safe escape route has been created and secured, slowly approach caribou on foot. The WRT only approaches close enough to get the caribou to move away from the hazard. Stay close enough to maintain visual contact.

Caution:

Avoid surprising caribou by alerting caribou to your presence by making noise, i.e. talking, clapping hands etc. from as far away as possible.

- If the caribou stop moving, continue the approach.
- Continue to monitor the caribou until they have moved at least 100 metres from the edge of the hazardous site or activity i.e. outside of a surface blast “safe zone”.
- If the caribou stop within the 100 metre zone, continue your approach. Keep the caribou moving until they are more than 100 metres from the edge of the hazard.

Level 3.

- If caribou are not responding to close approaches by people on foot then it will be necessary to start making noise. Continue approach making noise by clapping hands or shouting.
- If clapping and shouting does not cause the caribou to move off, use quick short bursts from an air horn. Again only do what is necessary to get the caribou to move.
- If the caribou stop within the 100 metre zone, continue your approach. Make noise and wave your arms. Keep the caribou moving until they are greater than 100 metres from the edge of the hazard.
- Use noise making explosive type deterrents only as a last resort and only when the caribou are beyond the maximum range of the previously selected noise maker.
- If the caribou are reluctant to move off, or appear that they might try to return to the hazard site, remain on site to monitor the caribou and take any further herding action that may be required.

When the caribou are clear of the hazard site the WRT will notify the Environmental Manager and have the "All-Clear" message broadcast.

TRAINING

- Wildlife Response Team members and designated individuals will be required to hold a valid Canadian Possession-Acquisition Firearms Licence.
- Advanced Bear Safety Training is required. This training will include sessions on bear biology, bear behaviour, and bear human encounters, what to do in an encounter, prevention, detection and deterrents. Training will also include sessions on the proper use of deterrents, bear response planning and reporting procedures.

RESPONSIBILITY

The Wildlife Response Team is responsible for:

- Recording the sighting on the Wildlife Sighting and Activity Log.
- Recording encounters and kills on Wildlife Encounter Report.

The Environment Manager is responsible for:

- Reporting the encounter to NDE.
- Forwarding all Wildlife Encounter Reports to NDE via Fax.
- Contacting NDE for direction on carcass disposal.

DEFINITIONS

NDE: Government of Nunavut Department of Environment

REFERENCES AND RELATED POLICIES

Operational Procedure – Bear Encounters (See Section 8.)

Operational Procedure – Reporting Bear Sightings & Encounters (See Section 4.)

Operational Procedure – Encountering Wildlife Carcasses (See Section 13.)

Bear Deterrents (See Appendix B.)

Bear Deterrent Summary Tables (See Appendix C.)

Deterrent Report (See Appendix D.)

Wildlife Safety Training Plan (See Section 2.)

12. MITIGATION / CONTINGENCY PROCEDURE: CARNIVORE DETERRENT PROCEDURES

INTRODUCTION

Wolverine, wolf and fox are relatively small and well camouflaged. This makes them difficult to spot. Signs such as tracks, scat, or diggings will often be the first indication that these animals are in the immediate area. A quick response to these early warning signs is critical in order to prevent negative wildlife / human encounters, property damage, or injury to the animal.

Whenever animal sign is spotted near areas of human activity or potential hazardous sites or activities, every attempt should be made to track or back track the animal to see what it is doing in the area. If the animal has gained access to shelter, a potential hazard, or food source, steps must be taken immediately to ensure that the animal is not able to gain access to these again. If the animal has found food, it will be back. The Wildlife Response Team must be prepared to deter every animal as soon as it is spotted.

Additional Deterrent Guidance:

For general guidance, see Deterrent Actions earlier in this Wildlife Deterrent Plan.

This section guides actions to be taken by the WRT to deter wolverine, wolf or fox at specific locations or potential hazards.

Caution:
Given the potential risk of injury to humans, the Wildlife Response Team must have a shotgun with them and be ready to use it any time a deterrent action is taken for wolverine, wolf or fox.

When approaching any fox keep a look out for signs of rabies.

If an animal is showing clear signs of being rabid and it is safe to do so, kill it by shooting it in the body, not the head (the brain is required for lab testing). Following the procedures contained in the Wildlife and Diseases and Parasites Manual obtain the required sample, cleanup the kill site and dispose of the carcass as instructed by NDE.

ROADS & AIRSTRIP

In general:

- Wildlife have the “right of way”.
- Wildlife will not be blocked from crossing roads. If wildlife is crossing or attempting to cross the winter road or site roads, traffic will stop and wait for them to finish crossing.

WRT members will take a deterrent action on or adjacent to roads and airstrips when a wolf, wolverine or fox is:

1. resting on the road surface or airstrip. If wolverine, wolf or fox are allowed to remain undisturbed, the risk of vehicle / wildlife collisions is increased. In these vicinities often a food reward may habituate them to the site.
2. on the road or airstrip at the time of a medical emergency or toxic spill response that requires these facilities.
3. loitering within 100 metres of the main haul roads or within 100 metres of the airstrip 20 minutes prior to aircraft landing or takeoff.

In each case the WRT member will perform the following actions beginning at the lowest possible level appropriate to the situation. The aim is to get wildlife to move away from hazardous situations without causing unnecessary stress or possible injury to the animal.

Level 1.

- With the vehicle headlights on approach the animal slowly (< 5 km/hr.). When the animal starts to move, stop and allow it to move off on its own.
- If the animal stops moving, once again make a slow approach.
- Use the vehicles horn to try scare the animal off.
- When the animal leaves the road / airstrip continue to monitor it until it has moved off approximately 100 metres from the road.

Level 2.

- If the wolverine, wolf or fox did not respond to the vehicle, slowly approach the animal on foot all the while maintaining a safe distance. Do only what is necessary to get the animal to move.
- Approach no closer than 50 metres. If the animal starts to move off, stop the approach.
- If the animal stops moving, continue the approach.
- If wolverine, wolf or fox do not respond to these approaches by people on foot, it is necessary to increase the disturbance to the animal. Continue to approach making noise by clapping hands or shouting.
- If clapping and shouting do not cause the animal to move off, use an air horn.
- When the wolverine, wolf or fox leaves the road / airstrip, continue to monitor them until they have moved off and are approximately 100 metres from the road or airstrip.

Level 3.

- If the WRT approaches to approximately 50 metres from the animal and it still has not moved off, the team will stop its approach.
- Use noise making explosive type deterrents to try to scare the animal off. During winter or night deterrent actions, use a noise maker that also emits light. This helps to illuminate the animal and provides another level of deterrence.
- If the animal is not responding to noise making deterrents at a distance, move to less than 50 metres and use the appropriate deterrent for the distance between the shooter and the animal. (See Deterrent Range Chart)
- When the animal begins to move away, stop your deterrent action.
- If the animal stops moving, resume the deterrent action.
- If the animal moves off, continue to monitor it until it has moved approximately 100 metres from the road or airstrip.

Level 4:

- If the animal does not respond to the close approach of people and deterrents, the animal may have become habituated to people and / or obtained food from them. As well the animal could be sick.
- If the animal does not respond to noise making deterrents, use non-lethal projectiles. Select the type of non-lethal projectile based on the species and the distance from the animal (See Deterrent Range Chart). Wherever possible use a non-lethal projectile round with marker dye so that the animal can be monitored and the effectiveness of the deterrent action evaluated.

- When the animal starts to move away, stop your deterrent action.
- If the animal stops moving, resume the deterrent action using non-lethal projectiles or noise makers.
- If the animal moves off, continue to monitor it until it is approximately 100 metres from the road or airstrip.
- If the animal refuses to move or becomes aggressive, it may be necessary to shoot the animal for safety reasons.

INSIDE EXCLUSION FENCING

Exclusion fencing is used to keep wildlife out of areas where a hazard might exist. However there is a potential that wildlife may get inside a fence and become trapped. This is likely to occur if people do not close gates.

Extreme care must be taken if wildlife is trapped within exclusion fencing. In order to free the animal, a person may have to come in very close to open a gate or provide an escape route for the animal. Close approach may panic the animal and cause it to become aggressive. The agitated animal may injure itself on the fencing or enter the hazard that the fence surrounds. In each case the WRT member will perform the following actions beginning at the lowest possible level appropriate to the situation. The aim is to get wildlife to move away from hazardous situations without causing unnecessary stress or possible injury to the animal.

Level 1.

- Use binoculars to assess the situation from a safe distance. This will minimize any further stress to the animal.
- Have one member of the WRT team approach the fence and open all gates. Start with the one that provides the wildlife with the shortest and safest escape route. Once all gates are open, retreat to join the rest of the team.
- Monitor the animal. Give it enough time to find an opening and escape.
- If the wildlife does not find the opening or its movements inside the fence put it at risk, proceed to “Level 2”.

Level 2.

- Proceed slowly towards the fence from the direction that will cause the animal to move towards the opening in the fence, but not drive it into the potential hazard. Remain on the outside of the fence and only approach close enough to get the animal to move in the right direction.
- Once the animal is outside the fence, ensure that all gates are closed.

Level 3.

- If the animal is unable to spot the opening or is reluctant to go through the opening, make the opening larger if possible. Cut the chain link fasteners and peel back one or two sections of the fencing*. (If during construction the fencing fabric is marked with fluorescent orange paint at joins or overlaps, this process will be quicker.)*
- Once a larger opening is made, move away from the fence so that the animal has the chance to find the opening itself.
- If the animal still does not exit the fence, once again try to direct the animal from outside of the fence by making noise in the appropriate location.

Level 4.

- If the animal still has not moved out by way of the opening, and the exclosure is large enough to manoeuvre the animal safely from within the exclosure, enter the fence at the opening furthest from the point that the animal's intended exit point.
- Proceed slowly on foot and attempt to direct the animal towards the nearest safe escape route.
- Recruit other people as necessary to assist with the herding action.

POTENTIAL HAZARDOUS SITES or ACTIVITIES

Potential hazardous sites or activities include:

- Anywhere on the gravel pad on which the camp complex and mill facilities are located.
- Remote sites, i.e. Causeway and Explosives Magazine.
- Mine portal and access road.
- Fuel or chemical storage areas.
- Container storage and lay-down areas.
- Land Fill.
- Land Farm.
- Emergency Tailings Dump Catch Basins, when in use.
- Quarries and the "Safe Zone" of any surface blasting

In each case the WRT member will perform the following actions beginning at the lowest possible level appropriate to the situation. The aim is to get wildlife to move away from hazardous situations without causing unnecessary stress to the animal or possible injury. Do only what is necessary to get the animal to move.

NOTE:
The Wildlife Response Team member needs to be as mobile as the animal they are trying to deter. As well the WRT member must maintain visual contact with the animal until it leaves the area. Therefore use of a vehicle is limited in deterring wildlife from potential hazardous sites. In those situations where the use of a vehicle is practical, refer to Level 1 response for Roads & Airstrip.

Caution:

- Before approaching wildlife make sure the animal is aware of your presence. From as far away as possible let the animal know where you are by making noise i.e. talking, clapping hands etc.
- When following wildlife be sure to make wide swings around corners and other visual obstructions to prevent sudden encounters with the animal.

Level 1.

- Slowly approach the animal on foot to no closer than 50 metres if possible. Get closer if necessary to establish or maintain visual contact with the animal.
- If the animal starts to move off, stop the approach but do not let the animal get out of sight.
- If the animal stops moving, continue your approach.
- If the wolverine, wolf or fox do not respond to earlier approaches by people on foot, increase the disturbance to the animal. Continue to approach but make noise by clapping hands or shouting.

- If clapping and shouting do not cause the animal to move off, use an air horn. The air horn is well suited for working in confined or congested areas where the WRT must closely approach the animal.
- When the wolverine, wolf or fox leaves the hazard area, continue to monitor the animal until it is approximately 100 metres from the hazardous site or activity.
- If the animal has not begun to move off if approached to about 50 metres, stop the approach.

Level 2.

- At about 50 metres, use noise making explosive type deterrents to try to scare the animal off. During winter or night deterrent actions, use a noise maker that also emits light. This helps to illuminate the animal and provides another level of deterrence.

Caution:
Explosive type deterrents present a fire risk and should never be used in areas where a fire hazard exists i.e. the fuel storage areas.

- If the animal does not respond to noise making deterrents at a distance, move to less than 50 metres and use the appropriate deterrent for the distance between the shooter and the animal. (See Deterrent Range Chart)
- When the animal begins to move away, stop your deterrent action.
- If the animal stops moving, resume the deterrent action.
- If the animal moves off, continue to monitor it until it is approximately 100 metres from the hazardous site or activity.

Level 3.

- If the animal does not respond to the close approach of people and noise making deterrents, the animal may have become habituated to people and / or obtained food from them. The animal could also be sick.
- If the animal does not respond to noise making deterrents, use non-lethal projectiles. Select the type of non-lethal projectile based on the species and the distance from the animal (See Deterrent Range Chart). Wherever possible use a non-lethal projectile round with marker dye so that the animal can be monitored and the effectiveness of the deterrent action evaluated.
- When the animal starts to move away, stop the deterrent action.
- If the animal stops moving, resume the deterrent action using non-lethal projectiles or noise makers.
- If the animal moves off, continue to monitor it until it is approximately 100 metres away from the hazardous site or activity.
- If the animal refuses to move or becomes aggressive, it may be necessary to shoot the animal for safety reasons.

TRAINING

- Wildlife Response Team members and designated individuals will be required to hold a valid Canadian Possession-Acquisition Firearms Licence.
- Advanced Bear Safety Training is required. This training will include sessions on bear biology, bear behaviour, and bear human encounters, what to do in an encounter, prevention, detection and deterrents. Training will also include sessions on the proper use of deterrents, bear response planning and reporting procedures.

Deterrent Range Chart

Launcher Type	Deterrent	Approx. Range
Pencil Launcher	Banger	15–20 m / 50–65 ft
15 mm Pistol Type	Banger	23–27 m / 75–90 ft
	Screamer	76–91 m / 250–300 ft
9 mm Pistol Type	Banger	23–27 m / 75–90 ft
	Screamer	76–91 m / 250–300 ft
12 Gauge Shotgun	Shell Cracker	50–60 m / 164–200 ft
	Screamer / Whistle Cracker	60 m / 200 ft
	Rubber Bullet (Strike II)	40 m / 130 ft
	Bean Bag (Close Range)	3-15 m / 10-50 ft
	Bean Bag (Standard)	9-30 m / 30-100 ft

RESPONSIBILITY

The Wildlife Response Team is responsible for:

- Recording the sighting on the Wildlife Sighting and Activity Log.
- Recording encounters and kills in Wildlife Encounter Report.
- Skinning and preserving hide complete with claws and skull.

The Environment Manager is responsible for:

- Reporting the encounter or kill to NDE.
- Forwarding all Wildlife Encounter Reports to NDE via Fax.
- Contacting NDE for direction on carcass disposal.
- Ensuring that the carcass is handled properly, and the skin and head are delivered to NDE in a timely manner.

DEFINITIONS

NDE: Government of Nunavut Department of Environment

Area of Human Activity: Includes any area within the project footprint where people are active.

REFERENCES AND RELATED POLICIES

Operational Procedure – Bear Encounters (See Section 8.)

Operational Procedure – Reporting Bear Sightings & Encounters (See Section 4.)

Operational Procedure – Encountering Wildlife Carcasses (See Section 13.)

Bear Deterrents (See Appendix B.)

Bear Deterrent Summary Tables (See Appendix C.)

Deterrent Report (See Appendix D.)

Wildlife Safety Training Plan (See Section 2.)

13. CONTINGENCY PROCEDURE: ENCOUNTERING WILDLIFE CARCASSES

PURPOSE

To ensure that personnel at the Jericho Diamond Project are aware of proper procedures to be followed when encountering wildlife carcasses.

SCOPE

This applies to all personnel at the Jericho Diamond Project who encounter an animal carcass.

OVERVIEW

There is a potential health risk to Jericho Project employees when handling wildlife found dead from unknown causes. Carcass from a bear kill could create further problems if not dealt with quickly and effectively. Staff handling dead wildlife will need to be educated about wildlife diseases and proper handling procedures.

The handling and disposing of wildlife carcasses must take into consideration the cultural beliefs of the aboriginal people in the land use area. Final disposal will be done under the direction of NDE.

PROCEDURE

Warning: Because of the possible risk to human health and safety from either disease or wildlife only environmental staff or appropriately trained individuals should investigate wildlife carcasses**.**

When to Report Dead Wildlife:

- Anytime that a bear is found dead.
- Anytime that a bird of prey (eagle, falcon, hawk, owl) is found dead.
- Anytime that two or more animals of the same species are found dead within half a kilometre of each other.
- Anytime that a bear, caribou, wolf, wolverine, fox or bird of prey is found dead within one kilometre of any human activity.
- Any time an animal dies as a result of a collision with a vehicle.

What Information Should Be Collected and Reported Upon Initial Observations:

- Take the following photographs:
  General area, showing where the animal is laying
  The carcasses; one from each side, the head and the tail.

- Record the following:
  - Note anything unusual.
  - Any obvious injuries or marks.
  - Record the following information:
  - Location of animal.
  - Time.
  - Date.
  - Estimate of how long it has been dead.
  - Any other animals of any species seen in the general area.

Disposal of Carcasses
To prevent attraction of animals to the site, carcasses will be disposed of under the direction of NDE. The Environmental Manager will contact DSD personnel to receive permission, and direction, to dispose of the carcass.

Who to Contact:
Allen Niptanatiak, Wildlife Officer II, or
Colin Adjun, Wildlife Officer I
Nunavut Department of Sustainable Environment, Kugluktuk (867) 982-7450
Kitikmeot Regional Office – (867) 982-7440

ENCOUNTERING GRIZZLY BEAR KILLED CARIBOU CARCASSES:

General: Whenever approaching or working around a recent grizzly killed caribou there must be at least two people, one of whom will be armed with a 12 gauge shotgun.

a) Carcass is <u>GREATER THAN 1 km</u> from areas of human activity:

- Grizzly killed caribou will not be removed. The bear will be allowed to feed on the carcass until it is finished. Removing the bear's kill may cause it to approach camp or other areas of human activity in search of its food.
- All employees will be alerted to the presence of the carcass and the area closed to human activity until the Environmental Manager has determined that the area is safe.

b) Carcass is <u>WITHIN 1km</u> of human activity or camp:

- Due to the danger posed by a grizzly on a carcass, any grizzly killed caribou found within 1 km of camp or human activity will be relocated.
- The carcass will relocated by dragging it at least 1 km away from areas of human activity. The purpose of dragging the carcass is to leave a scent trail so that the bear can easily relocate its kill. If the carcass is removed without leaving a scent trail the bear may approach camp or areas of human activity in search of its kill.
- ATV, snowmobiles or helicopter can be used to drag the carcass.
- The carcass should be left in an area where it can be easily seen from a distance, i.e. top of a hill or point jutting into a lake. This will allow for the safe monitoring of the carcass and any bear activity at the site.
- All employees will be alerted to the presence of the carcass and the area closed to human activity until the Environmental Manager has determined that the area is safe.

TRAINING

- Advanced Bear Safety Training
- Wildlife Disease Identification and Sampling Training

RESPONSIBILITY

Every individual is responsible for:

- Recording the sighting on the Wildlife Sighting and Activity Log.
- Reporting the sighting to the Environmental Manager.

Environmental staff with Wildlife Response Team is responsible for:

- Collecting the required information.
- Alerting everyone on site of the presence and location of grizzly killed carcasses.
- Disposing of the carcass.
- Monitoring the kill site or relocated carcass in order to determine if the area is safe.

Environmental Manager is responsible for:

- Closing the area where grizzly bear caribou kills are located.
- Ensuring that the photographs and information required by NDE are collected and forwarded to NDE.
- Receiving permission and direction from NDE personnel and carrying out the disposal of the carcass as directed.

DEFINITIONS

NDE: Government of Nunavut Department of Environment

Wildlife Disease Identification and Sampling Training: to be designed, but will be based directly on the Disease and Parasites of the NWT Reference Manual for Wildlife Officers.

REFERENCES AND RELATED POLICIES / PROCEDURES

Diseases and Parasites of the Northwest Territories Wildlife Officers Reference Manual

Bear Encounters (See section 8.)

14. MITIGATION PROCEDURE: HANDLING AND DISPOSAL OF FOOD WASTE

PURPOSE

To ensure the proper and safe handling of food wastes at the Jericho Diamond Project site.

SCOPE

This procedure applies to all employees at the Jericho Diamond Project site.

OVERVIEW

The improper handling, storage and disposal of food and food wastes can quickly result in wildlife being attracted to site. If wildlife finds an easily attainable food reward they can quickly become a serious threat to human safety including a significant risk of property damage.

By placing the incinerator inside a shipping container and connecting it by an enclosed corridor to the camp complex, Jericho Diamond Project will significantly reduce the potential for food waste to get outside and becoming available to wildlife. This also significantly reduces the potential for wildlife conflicts on site.

PROCEDURE

Food Wastes:

- Food wastes and other domestic garbage from all areas of the accommodation complex (dorms, office and dry) are to be brought to the kitchen storage area for disposal with kitchen wastes.
- Waste and uneaten food from lunches being consumed away from the main dining area are to be brought to the camp kitchen for proper disposal.
- Waste from the kitchen and kitchen storage area is to be collected twice daily and taken to the incinerator for immediate incineration. Depending on the number of people in camp, the frequency of collection and incineration of garbage may have to be adjusted.
- Food waste from the process plant and mining shop facilities is to be collected once daily and taken to the incinerator building.
- Garbage should not be allowed to accumulate to the point where it must be stored over night.
- Small amounts of cooking grease from grills and grease traps will be incinerated with kitchen garbage – this aids in burning wet garbage. Large amounts of grease presents a fire and wildlife attractant risk and must be handled according to the “Used cooking oil from the deep fat fryer” procedure below.
- Waste aerosol cans and batteries are disposed of and handled separately. See Waste Management Plan.

Used cooking oil from the deep fryer:

Each time that the cooking oil in the deep fryer is changed approximately 5 gallons of used oil will be produced. This is too large a volume to be mixed with the regular kitchen wastes and presents a serious fire hazard if not disposed of properly.

- Used oil is to be poured into two five-gallon pails, filled only half way. This is done to minimize spills when handling and to keep the volumes at the appropriate level for safe incineration.
- These sealed pails are to be kept in the kitchen away from outside doors.
- The used oil will be incinerated separately from other kitchen waste.
- The oil from one pail, approximately 2 1/2 gallons, will be poured into a heavy-duty metal container and put into the incinerator to be burned.
- The second pail will remain in the kitchen until it can be incinerated. The emptied pail will be returned to the kitchen immediately for re-use.

TRAINING

- Waste Management Plan: All employees who deal with food and food wastes will be provided detailed instruction on the waste management plan and their roles and responsibilities within the plan.
- Wildlife awareness training.

RESPONSIBILITY

Site Services personnel are responsible for:

- Collecting and incinerating garbage from the camp kitchen storage area at least twice a day.
- Collecting and incinerating food wastes from the remote lunch rooms such as the process plant, mining shop and airport facilities at least once a day.
- Cleaning out the incinerator on a regular basis and properly disposing of non-burnables and ash.
- Informing the Site Supervisor of any problems or potential problems.

The Site Supervisor is responsible for:

- Ensuring that waste is collected and incinerated daily.
- Ensuring that the incinerator is cleaned out on a regular basis and that non-burnables and ash are properly disposed.
- Informing Site Services of any problems or potential problems.

DEFINITIONS N/A

REFERENCES AND RELATED DOCUMENTS

Waste Management Plan (To be developed in EMS)

Operational Procedure: Incinerator Use (To be developed in EMS)

Operational Procedure: Solid Waste Handling and Disposal (To be developed in EMS)

15. MITIGATION PROCEDURE: WILDLIFE - SURFACE BLASTING PROCEDURES

PURPOSE

To protect wildlife during surface blasting activities at the Jericho Diamond Project mine site.

SCOPE

Applies to all employees and contractors performing blasting activities at the Jericho Diamond Project site.

OVERVIEW

The minimum requirements for surface blasting are established in the following legislation:

- Explosive Use Act (R.S.N.W.T. 1988, C. E-10)
- Explosive Use Regulations (S.N.W.T. 1994, C. 25) – Section 13
- Mine Health and Safety Act (Nunavut)
- Mine Health and Safety Regulations R-125-95
  Part XIV Explosives at Mines – Section 14.40 Surface Blasting
- Federal Explosives Act R.S.,c.E-15,s.1
- Federal Explosives Regulations C.R.C.,c.599

All legislation and regulations are aimed at ensuring human safety but do not address wildlife. The blasting procedures at the Jericho Diamond Project have been expanded in order to prevent injury and minimize disturbance to wildlife.

- Blasting will be suspended if there are caribou or other large mammals within the "Danger Zone" of the blasting activity.
- The "Danger Zone" is determined according to: the type of explosives being discharged; the size of the blast; and the blast location. In all cases the minimum distance will not be less than 600 metres.

PROCEDURE

- 2 hours prior to the actual blast occurrence the blast supervisor will ensure that warning of a blast is announced on all radio channels.
- At 30 minutes and again at 5 minutes prior to a scheduled detonation, the blast supervisor (or his / her designate or environmental staff) will use binoculars to check the blast danger zone to ensure that no caribou or other large mammals are within 600 metres of the blast site.
- If caribou or other large mammals are sighted within 600 metres of the blast site the blast supervisor will be notified immediately. No blasting will occur until the caribou or other large mammals are outside of the danger zone.
- The blast supervisor may contact the environmental manager (or his / her designate) to request that a herding or deterrent action be taken to move the wildlife out of the danger zone.

- The environmental manager (or his / her designate) will inspect all situations of wildlife in the blast area to determine if a herding or deterrent action is warranted and safe for both the wildlife and responders. Only when herding or deterrent action can be done safely should responders proceed.
- Once the caribou or other large mammals have been herded or deterred out of the danger zone, the responders will position themselves (at a safe distance) between the danger zone and the deterred wildlife to monitor their movements. This positions the responder to initiate another herding or deterrent action should the animals try to return.
- The wildlife responders must notify the blast supervisor of the results of their efforts and document the situation. If the animals are likely to remain or re-enter the blast danger zone before detonation of the explosives, the blast will be suspended.

TRAINING

- Induction Program for all employees, contractors, and visitors will include information on blasting procedures and signals.
- Job specific training will be provided to blasting and environmental team members.
- Wildlife response team members will be provided detailed training in herding and deterring wildlife.

RESPONSIBILITY

Every individual is responsible for:

- Knowing the blasting procedures, warning signals and personal responsibilities.

Members of the Blasting Crew are responsible for:

- Knowing that the minimum blast danger zone is 600m from the blast site.
- Ensuring that no wildlife or people are within the blast danger zone prior to detonation.

Environmental Staff are responsible for:

- Determining if a herding or deterrent action is necessary and can be carried out safely.
- Taking herding or deterrent actions.
- Monitoring and recording the wildlife's response to herding or deterrent action and monitoring and recording the wildlife's response to the blast.
- Compiling reports on actions taken and wildlife behaviour.

The Jericho Diamond Project Environmental Manager is responsible for:

- Ensuring that all employees, contractors and visitors understand this policy and procedure.

REFERENCES AND RELATED DOCUMENTS

DEFINITIONS

Danger Zone: The maximum distance from the blast site where injury from flying rock might occur.

REFERENCES AND RELATED POLICIES / PROCEDURES

- Jericho Diamond Project Employee Induction Program
- Mitigation / Contingency Procedure: Wildlife Deterrent Plan (See Section 10.)
- Mitigation / Contingency Procedure: Carnivore Deterrent Procedures (See Section 12.)
- Contingency Procedure: Wildlife Response Team – Bear Response (See Section 9.)
- Mitigation / Contingency Procedure: Caribou Herding Procedures (See Section 11.)
- Employee Handbook for the Nuna Group of Companies section 3.8 Blasting Procedures.
- Explosives Use act (R.S.N.W.T. 1998, C. E-10)
- Explosive Use Regulations (S.N.W.T. 1994, C.25) – Section 13
- Mine Health and Safety Act (Nunavut)
- Mine Health and Safety Regulations R-125-95, Part XIV Explosives at Mines – Section 14.40 Surface Blasting
- Federal Explosives Act R.S.,c.E-15,s.1
- Federal Explosives Regulations C.R.C.,c.599

Potential Impact of the Jericho Diamond Project on Wildlife Habitat Loss or Alteration.

SPECIES: Caribou, Muskox, Grizzly Bear, Wolf, Wolverine, Fox, Small mammals

IMPACTS

- Site development and mining operations will result in the alteration or loss of approximately 222 ha of terrestrial habitat.
- Terrain disturbance from construction and operation of the project include:
  a) open pit;
  b) building pads for all project infrastructure including the ore storage sites, lay-down areas, tank farm, the mill/camp site, truck shop, ammonium nitrate storage, explosives truck wash and the explosive magazine;
  c) winter and all-weather roads, water management ditches;
  d) extending and operating the airstrip;
  e) borrow areas;
  f) establishing waste rock disposal sites:
  g) sedimentation berms and collection ponds
  h) Long Lake tailings containment area including collection pond, containment dams and berms; and
  i) releases from the Long Lake tailings containment area.
- Indirectly potential impacts on vegetation health and productivity are due to deposition of dust on plant tissue. Activities with a potential to generate dust include:
  a) blasting and crushing rock;
  b) earth movement/material transfer for transport and placement of ore and waste rock;
  c) vehicle traffic; and,
  d) landing and taking-off of aircraft.
- Walking and/or driving on top of vegetated areas can cause physical damage to vegetation and increase surface moisture.
- Exhaust gases from the site's diesel generator units; exhaust gases from the site's diesel and gasoline powered heavy equipment and light vehicles; blasting gases; dust release from tailings deposited or stored above the low water line in Long Lake tailings containment area; exhaust gases from the site's domestic garbage incinerator unit have the potential to affect plant health.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Habitat Loss or Alteration - Project Footprint	**Pg. 1 of 1**
Category	**Mitigation**
Planning & Design	a) Reducing the disturbed surfaces to as small an area as practical; approximately 122 ha. b) The size of building pads and the footprint of facilities will be minimized. c) Designated areas will be assigned for the storage of materials – these areas will be selected as to minimize potential effects by avoiding sensitive areas such as vegetated areas or water bodies. d) The locations of overburden and waste rock dumps selected to minimize impact within the Jericho site area. e) Use of non-acid generating rock to construct pads, roads, airstrip and lay-down areas. f) Construction of roads, extension of airstrip, building and infrastructure pads done during winter months to preserve permafrost and prevent further habitat loss.
Operations	• All disturbance, except for borrow pit areas, will occur during mine construction in years one and two. • To the greatest extent practical, materials generated from mining will be used for construction. • All soil that is stripped to develop the pit ad other sites will be salvaged, where practical, for reclamation and revegetation purposes.
Operation Policy & Procedures	
Monitoring/ Evaluation/ Audit	
Contingency	
Reporting / Feedback	
Education	

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Habitat Loss or Alteration - Dust	**Pg.1 of 2**
Category	**Mitigation**
Planning & Design	• Crushing and milling facilities will be located inside a building. • Ore will be sprayed with water before crushing to minimize dust release to the ambient plant air. • Crushing equipment employed during construction will be fitted with a water spray or similar dust control should dust prove to be a problem (if the crusher is operated during the summer months). • Other key dust generation points will be equipped with dust containment and dust suppression systems designed to manage dust levels so that no significant harm occurs to the vegetation or wildlife in the immediate project area. • Implementation of underground mining at year's five to six.
Operations	• Use of coarse rock for roads, airstrip, building pads, lay down and stockpile area construction to minimize the amount of dust generated by construction placement. • Dust suppression measures such as water application, during dry non-winter seasons, will minimize dust generated from vehicle traffic on roads and the airstrip. For much of the year the roads the airstrip will be frozen and snow covered. • Enforced traffic speeds will also minimize dust generated from vehicle traffic on roads. • A water truck will be dedicated to watering roads and the top surface of waste rock dumps, when required. • Water sprays will be used on ore stockpiles if dust generation becomes a problem. • Weekly flights by mid-sized combi style aircraft will range from one to three for the life of the project.
Operation Policy & Procedures	• Dust control procedures for roads, airstrip, stockpiles and open pit operations. • Traffic Management Plan
Monitoring/ Evaluation/ Audit	• Environmental Monitoring Plan – Air Quality Monitoring • Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project;

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Habitat Loss or Alteration - Dust	**Pg. 2 of 2**
Monitoring/ Evaluation/ Audit Continued	b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • Environmental Management System - All operational and reporting aspects of plans and procedures will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	• Adapt dust control measures to meet desired levels.
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Habitat Loss or Alteration - Exhaust / Emissions Pg. 1 of 1	
Category	**Mitigation**
Planning & Design	• The use of low-sulphur fuels in diesel-powered generators to minimize emissions. • Generators have been sized to produce only the required amount of power, thus minimizing fuel requirements. • Waste heat from the generators will be used to indirectly heat the plant building and process water for us in the scrubber.
Operations	• All mobile and stationary engines will be serviced regularly to ensure proper efficiency and operation. • Routine maintenance and use of low-sulphur fuel will be used to manage emissions from power generators.
Operation Policy & Procedures	• Equipment maintenance schedules.
Monitoring/ Evaluation/ Audit	• The primary objective will be to measure for specific contaminants within the workplace to protect employee health and to prevent the release of air quality harmful to the surrounding environment. • Environmental Management System - All operational and reporting aspects of plans and procedures will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	• Equipment with faulty emission equipment will be taken out of service until emission devices are repaired or replaced.
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Habitat Loss or Alteration - Walking / Driving	**Pg. 1 of 1**
Category	**Mitigation**
Planning & Design	
Operations	• No off-road use of vehicles except snowmobiles during the winter.
Operation Policy & Procedures	• Erosion protection measures will be implemented. • Traffic Management Plan.
Monitoring/ Evaluation/ Audit	• Environmental Monitoring Plan • Environmental Management System - All operational and reporting aspects of plans and procedures will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	• Restrict access to areas where environmental damage may be occurring.
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site.

Potential Impact of Jericho Diamond Project on Wildlife Mortality

SPECIES: Caribou, Muskox, Grizzly Bear, Wolf, Wolverine, Fox, Small mammals

IMPACTS

- direct and indirect mortality from attraction to project footprint;
- direct mortality from wildlife-human interactions;
- direct mortality from vehicle/aircraft collisions;
- direct and indirect mortality from toxic spills (*e.g.*, antifreeze);
- direct and indirect mortality from fugitive dust.
  See Habitat Loss or Alteration - Dust
- direct and indirect mortality from inhalation of toxic air emissions.
  See Habitat Loss or Alteration - Exhaust / Emissions

IMPACT: Direct and indirect Mortality from attraction to project footprint. **Pg. 1 of 4**	
Category	**Mitigation**
Planning & Design	• The incinerator unit will be housed in a totally enclosed structure, shipping container, which will be located directly adjacent to the Rotating Biological Contactor Waste Water Treatment Plant. The incinerator enclosure will have two access openings: (1) a steel door for access to the incinerator from the outside. (2) a double steel door opening to an enclosed chamber or corridor, that will lead to another double steel door to the Arctic Corridor. • An enclosed Artic Corridor will connect the incinerator, kitchen, office, dorms, sewage treatment and process plant. The enclosed corridors will ensure that all handling and transfer of food-contaminated waste from the camp and other facilities to the incinerator takes place indoors. • Designing and constructing buildings to limit the possibility of animals finding suitable shelter. All buildings, low level stairs and stair landings will be skirted to ground.
Operations	• Burning of food wastes and non-toxic combustible wastes in oil fired incinerator. • The following actions to be contained in the Waste Management Plan denote procedures to be routinely adhered to and evaluated for compliance. **Surface - Waste Management Plan** - Food and beverages, and their containers, will not be permitted in any outdoor recreational areas. - Designated contained areas will be assigned for construction and surface worker lunch and coffee breaks. - Separation of food waste and non-food waste at source. - All food waste storage containers (bins, drums, plastic receptacles) will be clearly identified with “FOOD WASTE ONLY”. A label stating “NO FOOD WASTE” will be applied to all other garbage storage containers. - Food stuffs and food-contaminated waste will be collected from the kitchen twice daily and taken to the incinerator for incineration. - At the end of each shift food stuffs and food-contaminated waste from other facilities, such as the workshop, process plant, airstrip control building, construction and pit lunch rooms will be collected in clear plastic bags and transported by site services to the indoor receiving area of the incinerator enclosure where it will enter the camp waste stream.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct and indirect Mortality from attraction to project footprint. **Pg. 2 of 4**	
	Underground - Waste Management Plan (year 5 – 6) - Underground shops and lunch rooms will be provided with food waste storage containers clearly identified with "FOOD WASTE ONLY" or "NO FOOD WASTE". - Food waste from the underground will be collected in clear plastic bags and transported to the surface daily at the end of each shift. - Site services will pick up food wastes from underground as it arrives at surface and transport it directly to the indoor receiving area of the incinerator enclosure where it will enter the camp waste stream.
Operation Policy & Procedures	The following Policies & Procedures will reduce wildlife attractants and must be evaluated for compliance. • **Landfill** - To ensure that proper burning of materials is carried out on-site as per the land use permit; to prevent fires in the burn pit from spreading to the surrounding tundra and/or smoke blowing towards the camp; and to minimize air pollution by ensuring that all products about to be burned are permitted. • **Food and Food Waste Handling and Storage** - To promote environmentally favourable handling and storing food, and for handling food wastes. • **Incinerator Use** - To describe how to use the incinerator and handle waste to prevent wildlife interactions, to avoid improper burning of solid waste, and to meet permit requirements. • **Waste and Incineration** - To ensure that only appropriate products are burned in the incinerator and identify appropriate precautions to be taken. • **No Littering Policy and Procedure -** To ensure that all personnel at the Jericho Diamond Project understand that MHBL endorse a "No Littering" policy. • **Solid Waste Handling and Disposal** - To ensure that solid wastes (as opposed to hazardous wastes) are properly handled and disposed. • **Sewage Treatment Plant Maintenance and Waste Handling** - To promote proper procedures for Sewage Treatment Plant Maintenance and Waste Handling.

IMPACT: Direct and indirect Mortality from attraction to project footprint. **Pg. 3of 4**	
Monitoring/ Evaluation /Audit	• **Waste management audit checklists** - Will be developed to ensure that waste management practices are being followed and to monitor the effectiveness of the waste management plan. • **Reporting Bear Sightings** - To ensure that all personnel at the Jericho Diamond Project are aware of the procedure for reporting the sighting of bears. • **Wildlife Sighting and Activity Log –** To record all wildlife sightings, signs (tracks, scat, diggings etc.) and activities within and adjacent to the project footprint. • **Environmental Monitoring Plan** • **Environmental Management System** - All operational and reporting aspects of plans and procedures will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	In order to ensure timely compliance with noted policies and procedures certain contingency actions must be taken. Appropriate staff is to be assigned responsibility in these regards. Appropriate training will be required. • **Deterrent Plan –**Outlines steps and techniques to be used to remove caribou and other animals from hazardous areas and for deterring problem wildlife. • **Dealing with Bear Sightings, Encounters or a Bear in Camp –** To ensure that all ERT (Emergency Response Team) members understand the appropriate procedures for dealing with bear sightings, encounters, and bears in the camp area. • **Encountering Wildlife Carcasses** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife carcasses. • **Wildlife Encounter** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. • **Bear Encounters** - To ensure that personnel understand the steps to take if they inadvertently encounter a bear. • **Incineration Backup**: Incinerator plus spare parts (controls, nozzles, gun type oil burner) • **Waste Disposal Backup**: Spare containers and labels on hand.

IMPACT: Direct and indirect Mortality from attraction to project footprint. **Pg. 4 of 4**	
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Internal reporting/feedback requirements outlined in Environmental Management System. • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • Those employees handling food and non-food wastes will be provided specific training on waste management procedures and their role in the waste management plan. • Wildlife Response Team or ERT will be required to take advanced bear safety and wildlife deterrent training. • All site personnel will be provided with wildlife safety training as specified in the Wildlife Safety Training Plan.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct Mortality from Wildlife-Human Interactions. Pg.1 of 3	
Category	**Mitigation**
Planning & Design	Planning & Design at the site provides for the following items. • Buildings designed and constructed to limit the possibility of animals finding suitable shelter. a) Space under stairs and stair landings closed off. b) Blind spots around buildings eliminated whenever possible. c) Windows provided on all doors exiting buildings. • Lay-down areas set up to prevent animals from finding suitable shelter and to avoid creating blind corners and wildlife traps. • Sludge from Rotating Biological Contactor waste water treatment plant will be placed in a fenced berm. If odor or other issues become problematic the treatment plant can be equipped to dewater the sludge so that it can be incinerated.
Operations	• **Waste Management Plan –** Strict adherence to the plan is critical in reducing the potential for wildlife-human encounters and the potential wildlife mortalities due to these interactions. • **Wildlife Safety Training Plan** - In the event of wildlife-human interactions site personnel must be able to respond appropriately. • **Deterrent Plan –** Outlines the steps and techniques to be used to prevent wildlife from becoming habituated to the site.
Operation Policy & Procedures	The following Policies & Procedures will reduce wildlife attractants, increase human safety and minimize the potential mortalities from wildlife-human interactions. • **Wildlife Safety Training Plan** • **Waste Management Plan** • **General Site Rules** – To ensure that all personnel at the Jericho Diamond Project understand the “General Rules” which cover Safety, Health and Environmental issues and other general issues. This policy will include rules for recreational activities on and off-site. • **Dealing with Bear Sightings, Encounters or a Bear in Camp –** To ensure that all ERT (Emergency Response Team) members understand the appropriate procedures for dealing with bear sightings, encounters, and bears in the camp area. • **Encountering Wildlife Carcasses** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife carcasses.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct Mortality from Wildlife-Human Interactions. Pg. 2 of 3	
Operation Policy & Procedures Continued	• **Wildlife Encounter** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. • **Bear Encounters** - To ensure that personnel understand the steps to take if they inadvertently encounter a bear.
Monitoring/ Evaluation/ Audit	• **Waste management audit checklists** - Will be developed to ensure that waste management practices are being followed and monitor the effectiveness of the waste management plan. • **Reporting Bear Sightings** - To ensure that all personnel at the Jericho Diamond Project are aware of the procedure for reporting the sighting of bears. • **Wildlife Sighting and Activity Log –** To record all wildlife sightings, signs (tracks, scat, diggings etc.) and activities within and adjacent to the project footprint. • **Environmental Monitoring Plan** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • **Environmental Management System** - All operational and reporting aspects of plans and procedures will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	**Deterrent Plan –** Outlines steps and techniques to be used to remove caribou and other animals from hazardous areas and for deterring problem wildlife. **Dealing with Bear Sightings, Encounters or a Bear in Camp –** To ensure that all ERT (Emergency Response Team) members understand the appropriate procedures for dealing with bear sightings, encounters, and bears in the camp area. **Wildlife Encounter** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. **Bear Encounters** - To ensure that personnel understand the steps to take if they inadvertently encounter a bear.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct Mortality from Wildlife-Human Interactions. Pg .3 of 3	
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Internal reporting/feedback requirements outlined in operational procedures. • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • Those employees handling food and non-food wastes will be provided specific training on waste management procedures and their role in the waste management plan. • Wildlife Response Team or ERT will be required to take advanced bear safety and wildlife deterrent training. • All site personnel will be provided with wildlife safety training as specified in the Wildlife Safety Training Plan. • Instructing personnel to maintain clean work areas and not to harass animals encountered.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct Mortality from Vehicle/Aircraft collisions. Pg. 1 of 2	
Category	**Mitigation**
Planning & Design	• Minimizing haul and service roads.
Operations	• Wildlife has the "right of way". • Established speed limits and no off-road use of vehicles. • Warning drivers when wildlife is moving through an area using signage and radio. • All trucks serving the Project will be equipped with radios so that drivers can alert each other to caribou and other wildlife either approaching or crossing the project roads. • All accidental deaths will be reported to the appropriate party(s) and removed as per the "Encountering Wildlife Carcasses" procedures. • **Deterrent Plan -** Safe, effective methods for removal of wildlife from the airstrip prior to aircraft landing and takeoff. Safe, effective methods for removal of wildlife from roads and the airstrip in an emergency.
Operation Policy & Procedures	The following Policies & Procedures will reduce the risk of direct mortality of wildlife due to vehicle/aircraft collisions. These must be routinely evaluated for compliance. • **Wildlife Encounter** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. • **Encountering Wildlife Carcasses** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife carcasses. • **General Site Rules** – To ensure that all personnel at the Jericho Diamond Project understand the "General Rules" which cover Safety, Health and Environmental issues and other general issues. • **Traffic Management Plan –** Outlines site specific vehicle operations and traffic rules including a warning system to communicate the presence of wildlife on the airstrip or roads. • **Deterrent Plan –** Outlines steps and techniques to be used to remove caribou and other animals from hazardous areas and for deterring problem wildlife.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct Mortality from Vehicle/Aircraft collisions. Pg. 2 of 2	
Monitoring/ Evaluation/ Audit	• **Wildlife Sighting and Activity Log –** To record all wildlife sightings, signs (tracks, scat, diggings etc.) and activities within and adjacent to the project footprint. • **Environmental Monitoring Plan -** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • The Jericho Project will participate with the Government of Nunavut and other governments and industrial interests in monitoring the response of caribou and the nature of caribou/truck interactions, in order to improve mitigation measures and winter road operating plans for all roads on caribou range. • **Environmental Management System** - All operational and reporting aspects of the plan will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period. • Conducting land-based visual inspections for wildlife in order to alert vehicle operators and aircraft of potential wildlife conflict.
Contingency	• Traffic and speeds limited or halted.
Reporting / Feedback	• Environmental Inspection Checklists and Reports • Internal reporting/feedback requirements outlined in operational procedures. • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • Wildlife Response Team or ERT will be required to take advanced bear safety and wildlife deterrent training.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct and Indirect Mortality from Toxic Spills	**Pg. 1 of 3**
Category	**Mitigation**
Planning & Design	• Fuel storage at the Jericho Diamond Project site will consist of: 1) One lined and bermed fuel farm located near the mining lay down area. 2) 24 – 205 litre barrels of Jet Fuel stored at the airstrip. • The bermed fuel farm will contain the nine tanks from the existing fuel farm area and twenty vertical single walled steel tanks assembled on site. • The fuel farm berm will have total holding capacity of 1,945,680 liters; 416% of the largest tank or 20% of the total tank volumes.
Operations	• Spill clean-up equipment will be strategically located for easy access in case of any incidents. • Isolation and immediate clean-up of any spills. • Designated trained spill response team consisting of on-site personnel on-site at all times. • All releases from the Long Lake containment area will meet water license discharge criteria. • The collection of runoff, seepage and spillage from the ore stockpiles and the ore processing facilities through in-plant sumps sediment berms and collection ponds. All collected water will be pumped to the tailings containment area. • Chemicals and lubricants stored in approved containers and stored inside buildings or converted shipping containers.
Operation Policy & Procedures	The following Plans & Procedures and their relevant sections will reduce the risk of wildlife coming into contact with toxic spills: • **Spill Prevention, Countermeasures and Control Plan –** the purpose of the plan is to provide a practical source of information required to access spill risks, develop an effective countermeasures program, and respond in a safe and effective manner to spill incidents. • **Hazardous Materials Management Plan –** provides instructions on the prevention, detection, containment, response and mitigation of accidents resulting from hazardous materials handling. • **Fuel Truck Transfer Procedures –** set out the general procedures to be followed when transferring fuel. Fuel transfer will take place inside a bermed area.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct and Indirect Mortality from Toxic Spills	**Pg. 2 of 3**
Operation Policy & Procedures Continued	• **Waste Management Plan -** Procedures for managing, handling, storing and shipping hazardous and non-hazardous wastes. • **Processed Kimberlite Containment Area Management Plan -** will set out Tahera's operation and maintenance strategy for the Long Lake tailings containment area. • **Water Management Plan** • **Migratory Bird Mitigation Plan -** To reduce and prevent potential disturbances to migratory birds from mining and human activities at the Jericho Diamond Project site. Specifically access to contaminated melt water mitigation measures.
Monitoring/ Evaluation/ Audit Continued	• **Environmental Monitoring Plan -** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • **Environmental Management System** - All operational and reporting aspects of the plan will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period. • Regular inspections and maintenance of the spill containment facilities, fuel and chemical storage facilities and barrels.
Contingency	• Use of the **Spill Prevention, Countermeasures and Control Plan** to promote the safe and effective recovery of spilled materials**.** • **Emergency Response / Spill Response Team** - Trained personnel will be available on-site at all times to assist with spill response activities. • **Deterrent Plan -** Outlines steps and techniques to be used to remove caribou and other animals from hazardous areas and spill sites.
Reporting / Feedback	• Reporting the spill, leak or system failure immediately to the On-Scene Coordinator.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Direct and Indirect Mortality from Toxic Spills	**Pg. 3 of 3**
Reporting / Feedback Continued	• On-Scene Coordinator can ensure that the responsible regulator is notified by contacting the NWT 24 Hour Spill Line. • Liaise with NWT Spill Line, Lead Agency (DIAND) and other applicable agencies with regard to on-going cleanup activities. • Copies of all spill reports and follow-up reports are submitted to Nunavut Water Board and Kitikmeot Inuit Association. • Jericho Diamond Project to report all spills over 25 litres and to maintain an inventory of all spills less than 25 litres, which can be viewed by any Inspector /agency representative. • Communications with regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Staff involved in wastewater treatment operations will be trained in the safe and effective operation of these facilities. • Fuel and lubricants handlers will be given training in the transportation of dangerous goods; Tahera's fuel handling procedures for petroleum; and emergency response, especially fire fighting procedures. • All staff will receive training on WHMIS and emergency & spill response procedures. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • All members of the Spill Response Team will be trained and be familiar with the spill response equipment, including their location and access, the Spill Prevention, Countermeasures and Control Plan and appropriate spill response methodologies. • Emergency Response Team members will be required to take advanced bear safety and wildlife deterrent training.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Increase in legal and illegal hunting and trapping activities. Pg. 1 of 2	
Category	**Mitigation**
Planning & Design	• **Location -** is the key mitigating factor regarding potential increased harvesting due to the site roads and airstrip. • Access to site is limited to the summer months and during the winter months by air and snowmobile. Cambridge Bay is the only community in the Kitikmeot region where aircraft are stationed. • Hunting and trapping opportunities are more accessible close to the communities.
Operations	• Tahera Corporation will not permit its employees or contractors to carry unauthorized firearms while at work for the company, and hunting and sports fishing will not be permitted on the property.
Operation Policy & Procedures	• The Nunavut Land Claims Agreement guarantees Inuit free and unrestricted right of access for the purposes harvesting to all lands, water and marine areas within the Nunavut settlement area. However, article 5, Section 5.7.17 (b) of the agreement, excludes any place within a radius of one mile of any building, structure or other facility on lands under a surface lease, an agreement for sale or owned in fee simple. • Strict adherence to the Waste Management Plan, specifically those sections dealing with food and food waste handling, storage and disposal, will prevent wildlife from being attracted to the project. Failure to properly manage food waste could result in a potential increase in hunting or trapping opportunities due to wildlife (wolverine and fox) being attracted to the site.
Monitoring/ Evaluation/ Audit	• Site security patrols and opportunistic observations.
Contingency	• Reporting of any suspected illegal hunting or trapping to the Nunavut Department of Sustainable Development – Kugluktuk.
Reporting / Feedback	• Communications with responsible regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site.

Potential Impact of the Jericho Diamond Project on Wildlife Displacement and Disruption of Movement.

SPECIES: Caribou, Muskox, Grizzly Bear, Wolf, Wolverine, Fox, Small mammals

IMPACTS

- Attraction of wildlife from adjacent areas;
- Impediment or disruption of movement through project area;
- Displacement or alteration of behaviour (*e.g.*, time spent feeding, resting, traveling) that can influence energy balance, and survival and reproduction rates, as a result of noise and other sensory disturbance.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Attraction of Wildlife from Adjacent areas.	**Pg. 1 of 2**
Category	**Mitigation**
Planning & Design	• Incinerator to be located inside enclosed building attached to the Arctic Corridor which connects the camp and processing plant.
Operations	• Compliance with the mitigation measures outlined in the "Wildlife Mortality - Direct and Indirect Mortality from Attraction to Project Footprint" section to minimize wildlife attraction to the site from adjacent areas. Any animals that do approach must not find food rewards or shelter. • Consistent application of the Deterrent Plan will ensure that any animals entering areas of human activity are quickly deterred. Local wildlife that try to enter certain areas of the project must learn these areas are off limits. This is for the sake of wildlife conservation and human safety. • Feeding wildlife will be prohibited.
Operation Policy & Procedures	• Implementation of mitigation measures, education and enforcement of policies outlined in the "Wildlife Mortality - Direct and indirect Mortality from attraction to project footprint" section. • **Deterrent Plan –** Outlines the steps and techniques to be used to prevent wildlife from becoming habituated to the site.
Monitoring/ Evaluation/ Audit	• **Wildlife Viewing Log –** To record all wildlife sightings and signs (tracks, scat, diggings etc.) • **Reporting Bear Sightings** - To ensure that all personnel at the Jericho Diamond Project are aware of the procedure for reporting the sighting of grizzly bears. • **Environmental Monitoring Plan -** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • **Environmental Management System** - All operational and reporting aspects of the plan will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Attraction of Wildlife from Adjacent areas.	**Pg. 2 of 2**
Contingency	• **Wildlife Encounter** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. • **Bear Encounters or a Bear in Camp – ERT Response** - To ensure that all ERT (Emergency Response Team) members understand the appropriate procedures for dealing with bear encounters or bears in the camp area. • **Bear Encounters** - To ensure that personnel understand the steps to take if they inadvertently encounter a bear. • **Deterrent Plan –** Outlines the steps and techniques to be used to remove caribou and other animals from hazardous areas and for deterring problem wildlife.
Reporting / Feedback	• Communications with responsible regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • Wildlife Response Team or ERT will be required to take advanced bear safety and wildlife deterrent training.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Impediment or Disruption of Movement	**Pg. 1 of 2**
Category	**Mitigation**
Planning & Design	• Special attention was paid to the site plan in relation to mass caribou movements. The combination of mine site configuration and natural topography is such that large numbers of caribou will be able to continue to migrate past the Project site with little risk to individual caribou and no measurable effect on the Bathurst Herd. • All Jericho Diamond Project construction, operations and closure activities will be contained within approximately 222 ha. • Potable water, tailings and return water pipelines will be surface lines routed along access roads.
Operations	• "Wildlife has the Right of Way" • The placement of waste rock dumps south and east of Carat Lake will serve to deflect caribou movement around the mine workings. • Placing a "fence" of oversized rock south of Carat Lake should serve to deflect caribou movement from the southwest from passing through the Project's core operations area. • Rope festooned with rip stop nylon streamer flagging spaced 30 cm apart to be deployed at Jericho in a way that would guide caribou movements around the outer perimeter of the Jericho Project mine and processing plant site. • Pursuant to safety concerns placement of oversized waste rock deflectors beyond the north end of the airstrip to deflect caribou movements from the north around the eastern perimeter of the project area will be investigated. • A berm of waste rock will surround the pit to prevent caribou from entering pit.
Operation Policy & Procedures	• **Traffic Management Plan -** establishment and enforcement of speed limits including rules providing wildlife "right of way". • **Wildlife Encounter Procedures** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site. • **Deterrent Plan –** Outlines the steps and techniques to be used to ensure that deterrent/herding activities do not result in blocking natural movements of wildlife through the project area.
Monitoring/ Evaluation/ Audit	• **Wildlife Viewing Log –** To record all wildlife sightings and signs (tracks, scat, diggings etc.)

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Impediment or Disruption of Movement	**Pg. 2 of 2**
Monitoring/ Evaluation/ Audit Continued	• **Environmental Monitoring Plan -** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance. • **Environmental Management System** - All operational and reporting aspects of the plan will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	• **Deterrent Plan** - Caribou Herding – techniques to be used to deflect or deter caribou around or from areas potentially hazardous to wildlife. • Halting traffic until wildlife has moved across or from roads and the airstrip.
Reporting / Feedback	• Communications with responsible regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities. • Wildlife Response Team or ERT will be required to take advanced bear safety and wildlife deterrent training.

APPENDIX A: CONSOLIDATED IMPACT RESOLUTIONS

IMPACT: Displacement of Wildlife	**Pg. 1 of 2**
Category	**Mitigation**
Planning & Design	• The terrain disturbance footprint of the Jericho Diamond Project will be restricted to approximately 222 ha. • Surface crushing and all of the ore processing equipment will be located indoors.
Operations	• As the open pit develops, pit walls will increasingly dampen blasting noise. • Generators will be equipped with muffled exhausts and installed within a building that attenuate noise levels to some degree. • All mobile equipment will be equipped with muffled exhaust systems. • Routing of helicopter traffic to avoid active or previously known raptor nesting sites.
Operation Policy & Procedures	• **Traffic Management Plan** – Minimum flight altitudes of >300 m whenever possible, except on landings and departures, to minimize disturbance to wildlife. • **Migratory bird Mitigation Plan** - Personnel and equipment to avoid occupied waterfowl nesting areas, raptor nests and any other active nests. • Recreational use of off-road vehicles to be prohibited. • Prohibitions against harassing wildlife. • **Wildlife Encounter Procedures** - To ensure that all personnel at the Jericho Diamond Project are aware of proper procedures when encountering wildlife on or around the site.
Monitoring/ Evaluation/ Audit	• **Wildlife Viewing Log –** To record all wildlife sightings and signs (tracks, scat, diggings etc.) • **Environmental Monitoring Plan -** Environmental monitoring will be the primary tool by which Tahera and the regulatory agencies: a) measure environmental performance and compliance at the Jericho Diamond Project; b) determine whether mitigation measures are adequate to prevent environmental damage; and, c) collect sufficient data to adapt and change management and mitigation strategies to improve performance.

Monitoring/ Evaluation/ Audit Continued	• **Environmental Management System** - All operational and reporting aspects of the plan will be reviewed. In general ISO 14001 protocols will be used as a guide to audit project performance and demonstrate continuous improvement during the operating period.
Contingency	• Issuance of aircraft traffic advisories.
Reporting / Feedback	• Communications with responsible regulatory agencies. • NIRB's Monitoring Agent
Education	• Induction program for all new arrivals on site. • Job specific training. Prior to being exposed to the work site all site personnel will attend detailed orientation sessions appropriate to their tasks and responsibilities.

APPENDIX B: BEAR DETERRENTS

BEAR DETERRENTS

Prevention is key to bear safety.
Proper food storage, garbage disposal and camp maintenance reduce bear problems economically. Sometimes, however, bears are attracted to clean well-maintained camps.

Every person who works or travels in bear country should have a way to deter (chase away) an approaching bear. Appropriate use of proven deterrents can increase human safety and reduce the need to kill problem bears.

Deterrents have two purposes:
1) in the short-term, to protect people and property.
2) in the long-term, to teach bears to avoid humans and areas of human activity.

A deterrent can get you out of a tight situation safely – without the need to shoot a bear. However a bear that has previously obtained human food or garbage, even at another location, may be difficult to deter.

Make sure you
- Deter every bear that approaches your camp, and deter the bear every time it returns.
- Eliminate odours that attract animals. This is critical to the successful use of deterrents.

Commonly bears are deterred by pepper spray, loud noises, non-lethal projectiles, electric fences, or being chased by vehicles. As well, bears that do not obtain food will move off on their own.

Capsaicin “Pepper" Spray
Pepper spray contains capsaicin, a natural component of cayenne pepper. Capsaicin is a strong irritant to the eyes and nose. It also closes off the bronchial tubes, the airways of the lungs.

Capsaicin spray has effectively repelled black and grizzly bears in some circumstances. It is not well tested on polar bears. Capsaicin sprays have become very popular in recent years. It is a readily available non-firearm deterrent and can be carried in areas where firearms are prohibited.

Pepper sprays have been designed as a last resort deterrent i.e. to escape from an attack. During use, the spray is directed at the face of the bear from a distance of 3-6 m (10-20 ft) or less.

Always consider
- Wind can carry pepper spray back to the user.
- Pepper spray cans may not work in cold weather.
- Bronchial conditions will be aggravated. Make sure help is nearby.

Noisemakers
Noisemakers used to deter bears include warning shots, horns, sirens or explosive devices that are fired from specialized launchers or 12-gauge shot guns. They may become less effective with repeated use.

Warning Shots
Warning shots are the least effective method to deter bears.

APPENDIX B: BEAR DETERRENTS

Although firearms make a loud noise at their muzzle when fired, a distant bear may not hear much of a noise. However warning shots can be used to scare away an approaching bear. If need be you can use lethal force if some cartridges remain.

Always

- Make sure the bear knows that you are there before you fire a warning shot.
- Shoot in the air off to the side of the bear. Do not aim directly at the bear.
- Keep track of shots. Each warning shot fired means one less shell or cartridge in the gun that you may need to shoot the bear.

Before you fire a shot make sure that there are no people in a position where they might be hit. This is easy to overlook in a tense situation.

Horns

Hand-held air horns produce loud noises that may prevent a surprise encounter while you travel or deter an approaching bear. Hand-held horns are small, portable and easy to use.

An alternative to a compressed air canister horn is an air horn pressurized using a bicycle pump. The canister can be emptied for transportation, then quickly recharged at your destination. An empty canister is not subject to dangerous goods shipping restrictions. Fog or signal horns, sounded by blowing through a mouthpiece attached to a plastic megaphone, are also available.

Always:

- Alert a bear to your presence well before it has seen you.
- Register compressed air canister horns (boat horns) under dangerous goods shipping restrictions. Shipping costs can be expensive.

Sirens

- Commonly sirens are permanently mounted on equipment or buildings. Small portable sirens are available as well.

Always:

- Use a siren in conjunction with a trip wire or motion detector for greater effectiveness.
- Be able to easily distinguish the siren's sound from other emergency alarms.

Explosive Type Deterrents

Explosive deterrents are fired from specialized launchers or from 12-gauge shotguns. These deterrents send loud bangs, screams, or whistles toward an approaching bear. They have a range of 15–65 m (49–213 ft) and are more effective at long distances than other noisemakers. Table 1 shows the range of various types of explosive deterrents with specific launchers.

Two common groups of explosive deterrents are:

Shell crackers, scare cartridges, and bangers all contain a fuse. These fused projectiles travel 15–60 m (50-200 ft) before exploding. There is an initial noise at the launcher muzzle followed by a louder noise from the projectile when it explodes.

APPENDIX B: BEAR DETERRENTS

Screamers and Whistlecrackers make a continuous high-pitched noise. These projectiles may emit a bright light or explode with a loud bang at the end of their flight. The light emitting version provides a visual display that is prominent at night. In addition to scaring a bear these provide a light source with which to see the bear.

Always:

- Make the bear aware of your location before shooting. If the bear does not know where you are, it may run towards you by chance.
- Judge your distance to the bear carefully. Then shoot at the appropriate range. If an explosive deterrent lands behind a bear, the blast may drive the bear toward you.
- Avoid using explosive deterrents in dry vegetation, and around volatile chemicals and gases. These can be a fire hazard.

SPECIALIZED DETERRENT LAUNCHERS

Pencil launchers are pencil-size devices used to fire "bear banger" cartridges. The cartridges or "bangers" are threaded into the end of the "pencil". These devices easily fit in a shirt or jacket pocket.

Pencil launcher considerations:

- Fire flares and other emergency signal cartridges as well as bangers.
- Fire single shots and are slow to reload. The spent casing must be removed and a new cartridge screwed on before it can be fired again.
- Require more expensive replacement cartridges than those for pistol launchers; however the launcher is less expensive.

Pistol Launchers fire a variety of 15mm scare and signal cartridges. These single or multi-shot launchers are pre-loaded with .22 calibre (6mm) hot blanks. The deterrent cartridges are placed into the end of the muzzle when needed. Used with "bangers" and "screamers" they are effective, practical, inexpensive and easy-to-use bear deterrents.

Pistol launcher considerations:

- Fire multiple rounds of deterrents rapidly.
- Launch a wide variety of scare and signal cartridges.
- Can be pre-loaded with blanks and safely carried in a quick-draw holster for fast and easy use.

12-Gauge Shotguns can fire shell crackers and whistle crackers over a great distance.

Always:

- Fully load the magazine with lead slugs so that you are prepared if a bear attacks.
- Place deterrent rounds directly into the chamber of the shotgun, one at a time.
- Use a shotgun that has an open or cylinder choke (no narrowing of the barrel at the muzzle) and has either a hinge or pump action.

APPENDIX B: BEAR DETERRENTS

Warning:
Do not use a semi-automatic shotgun to fire bear deterrents. The low powder loads in explosive and non-lethal deterrent rounds do not produce enough pressure to properly work the action. Rounds can get jammed in the action rendering the firearm useless.

Do not fire a 12-gauge shell cracker at a bear closer than 65 m. The shell will explode behind the bear potentially chasing the bear toward you.

Table 1. Approximate range of various deterrents from specific launchers.

Launcher Type	Deterrent	Approx. Range
Pencil Launcher	Banger	15–20 m / 50–65 ft
15 mm Pistol Type	Banger	23–27 m / 75–90 ft
	Screamer	76–91 m / 250–300 ft
9 mm Pistol Type	Banger	23–27 m / 75–90 ft
	Screamer	76–91 m / 250–300 ft
12 Gauge Shotgun	Shell Cracker	50–60 m / 164–200 ft
	Screamer / Whistle Cracker	60 m / 200 ft
	Rubber Bullet (Strike II)	40 m / 130 ft
	Bean Bag (close range)	3-15 m / 10-50 ft
	Bean Bag (standard)	9-30 m / 30-100 ft

Transportation of Dangerous Goods
Pepper spray, compressed air canister type“air horns” and all explosives are considered dangerous goods in Canada. These deterrents must be shipped under the Transportation of Dangerous Goods Act.

NON-LETHAL PROJECTILES

Noise alone will not always scare a bear away. Non-lethal projectiles are designed to inflict pain to a bear, but not penetrate the hide or injure the bear.

Non-lethal projectiles for bears can be broken into two broad categories based on the firing device

- 12-guage shotgun, and
- specialized launchers.

12-GUAGE SHOTGUN PROJECTILES

Plastic Bullets are also called ferret slugs, bear deterrent rounds, or soft slugs. The plastic slug is a torpedo shaped projectile made of polyurethane plastic. Plastic slugs have been used in Nunavut and the Northwest Territories since the 1980's to successfully deter black, grizzly and polar bears. Fins on the back of the torpedo shape are meant to keep the slug's trajectory within a 1-foot diameter circle at 40 m (130 ft).

APPENDIX B: BEAR DETERRENTS

There have been complaints about the accuracy of some rounds. Because the nose of the torpedo shape is round, it is difficult to crimp the end of the shell casing the same way each time. The crimping process may push the projectile down into the casing further than intended. This causes the fins to bend; then accuracy is lost.

The **Strike II rubber slug** is more commonly used over the plastic bullet. They are more accurate and hit with more force. The projectile is made of soft rubber and shaped like an hourglass. When the Strike II slug hits the bear, the soft rubber flattens out, or mushrooms, quickly. This prevents hide penetration. The back of the rubber slug is hollow and lighter than the front, similar to a regular lead slug. This helps to increase accuracy.

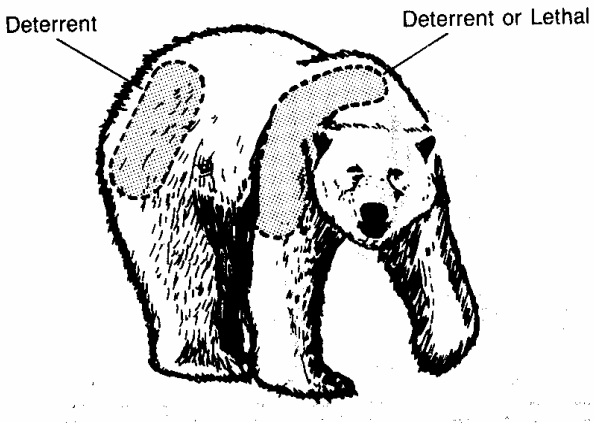
The **"Bean Bag"** projectile is another non-lethal option for bears at close range. Bean bag rounds have been effective in deterring bears.

Fairly recently developed, this bear deterrent is a fabric bag filled with lead shot that will not penetrate the bear. On impact the bag collapses, and the shot acts as a fluid mass. Its energy is distributed over a surface area of approximately 26 sq. cm (4 sq. inches). The solid blow delivered by the bean bag has been described as being comparable to a line drive from a baseball or a punch from a professional boxer.

Bean bag rounds for the 12 gauge shotgun come in a variety of loads. Each load is effective for a different range. Some manufactures also make a Dye Marking model. The fabric bags are coated with a yellow dye for marking the bear. This marking is handy where the three-strike rule is used for repeat offenders.

When firing non-lethal projectiles from a 12-guage shotgun, always:

- Load deterrent cartridges directly into the chamber of an open-choked shotgun.
- Let the bear know your location before firing.
- Take care not to startle a bear at close range.
- Make sure the bear has a clear path to escape.
- Have an experienced person with a loaded firearm as backup.
- Fire at a large muscle mass of a bear such as the shoulder or rump.



APPENDIX B: BEAR DETERRENTS

BE AWARE:

In order to use deterrents safely and skillfully you must train and practice on a regular basis. Read and follow the manufacturer warnings and instructions carefully.

Access to deterrents should not replace prevention and caution.

Vehicles

A truck, snow machine, all terrain vehicle or helicopter can be used to chase away bears. Sometimes starting and revving the engine is enough.

Trucks, and other vehicles that are restricted to road use, are the least effective means for chasing bears. Bears can quickly learn that a truck can not follow them off the road. However trucks do allow you to get nearer the bear to use other deterrent options more safely than if you had to approach by foot.

Snowmobiles and ATVs have the advantage of being able to leave the roadways and so are more effective than trucks to chase bears. However the driver is at far greater risk in the open.

When using a vehicle to deter a bear:

- Stay at least 30 m (100 ft) behind the bear when chasing with a truck, snowmobile or ATV.
- Go slow. There is no need to make the bear run. The faster you go, the greater the chance of injury to the bear and you!
- Only approach close enough to get the bear to move in the right direction.
- Work in pairs when using snowmobiles and ATVs.

Do not:

- Chase a bear with a vehicle for any reason other than personal protection. Unnecessary disturbance or harassment is unlawful.
- Chase a bear for more than ten minutes or 3 km (2.2 miles), especially if it is not in good condition. The bear may become overheated and injure itself.

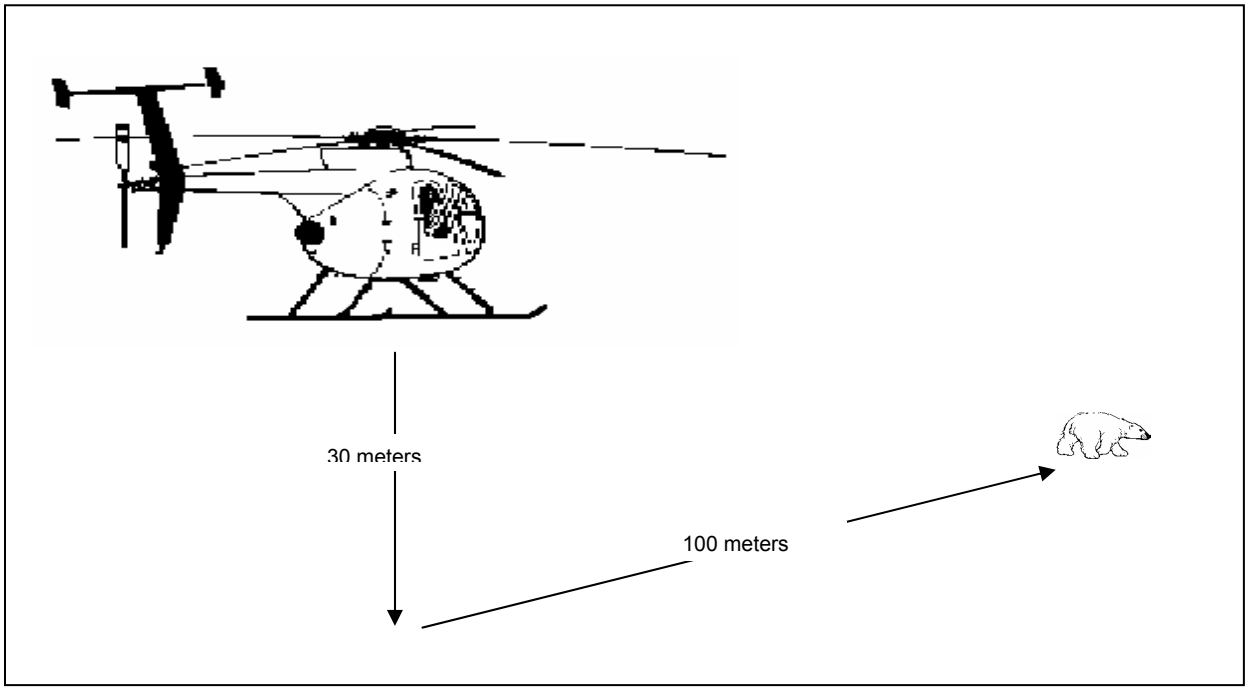
Helicopters

Helicopters can be used to deter a bear. However it is illegal to harass wildlife with aircraft. Only for reasons of human safety is it legal to "push" a bear using a helicopter.

If a helicopter is used to deter a bear, the pilot should:

- stress the bear as little as possible. A stressed bear running for a distance can overheat and injure itself.
- keep the helicopter well back from the bear. The minimum distance between the helicopter and the bear is 100 meters back and 30 meters up. (see figure: Minimum helicopter chase distances)
- keep the bear in visual contact. This should be done by taking the helicopter to a higher altitude rather than getting closer than the minimum distances.
- only get close enough to the bear to move it, not fly over it. A bear moving at a fast walk can cover a lot of ground quickly and efficiently; there is no need to run the bear.
- **DO NOT** push a bear for more than ten minutes or 3 km (2.2 miles).

Minimum helicopter chase distances



Electric Fences
A well-maintained electric fence can keep bears out of your site. Electric fencing is an effective deterrent for black and grizzly bears. Initial test results by the Nunavut Wildlife Service show that electric fences also deter polar bears during the snow free seasons, even in very dry soil conditions.

The fence consists of multiple strands of positively or negatively charged wire (see figure: 8 wire Hi-Tensile Electric Bear Fence). Every second strand is charged positive. A bear that tries to push through the fence gets a shock when it contacts a positive and negative strand.

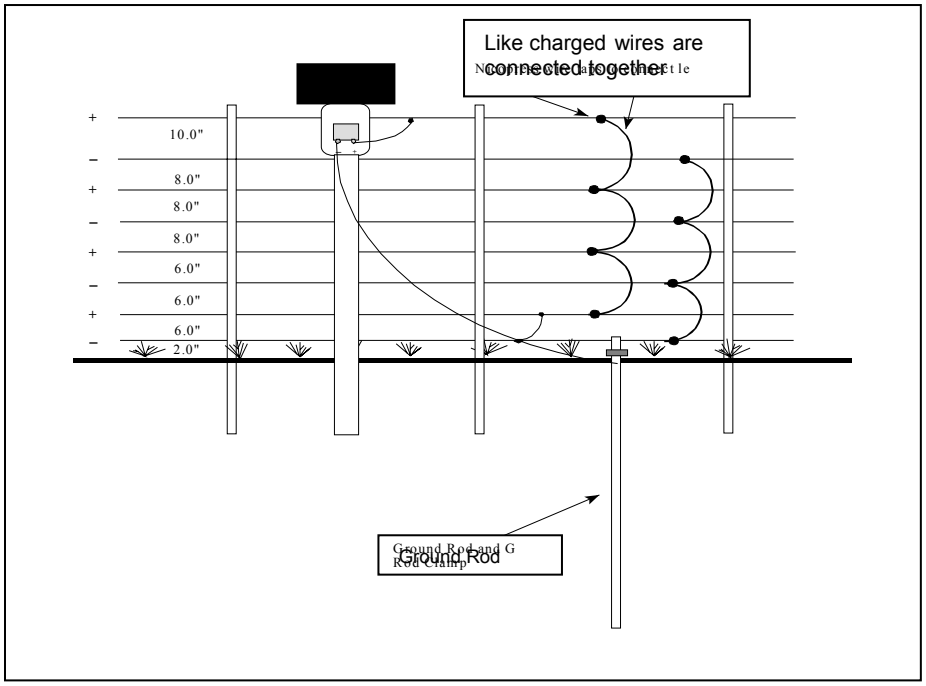
The light gauge temporary fencing or more permanent high tensile fencing can be used in many applications. In Nunavut and the Northwest Territories electric fencing has deterred bears at land fills, exploration camps, mine sites, outpost camps, research camps (see figure: Daring Lake Research Station) and caribou outfitting camps.

The fence chargers used in bear fencing meet all C.S.A. & UL standards and present no danger or hazards to humans. A shock from an electric fence is unpleasant but does not do lasting harm to the animal. Humans are safe should they accidentally contact two wires. A shock from the fence can hurt but not injure.

The voltage is high (5,000 - 10,000 volts); but the current (amperage) is low (.01 amps). The electrical charge is pulsating. The charge lasts (pulse width) .0004 of a second at a time. Then for .75 of a second, there is no electric current.

This combination of pulsating charge and low amperage ensures safety.

APPENDIX B: BEAR DETERRENTS



8 wire Hi-Tensile Electric Bear Fence.

Daring Lake Research Station surrounded by an electric fence to deter grizzly bears.

APPENDIX B: BEAR DETERRENTS

Bear Resistant Containers

Usually if a bear does not find food, it will not persist. The containers can be used to increase safety and security in "problem bear" areas, or in places where other methods of caching food are impractical.

An **open top steel barrel** has a removable top that is secured to the barrel body with a metal ring. The ring is tightened with either a nut and bolt closure, or a lever mechanism. These drums are available in sizes ranging from 1.3 litres (3 gallons) to 322 litres (71 gallons).

Open top steel barrels are excellent for storing emergency supplies and rations. They are also useful for the off-season storage of non-perishable food items in camps, which must be left unattended for short periods of time.

Open top steel barrels can be used to store garbage temporarily where incineration is not an option. The outside of the barrel must be kept clean and free of garbage odours. Be sure to store the drums in a shaded area. A closed drum sitting in direct sunlight may become a garbage pressure cooker. As soon as possible the barrels should be transported to a proper disposal site and cleaned well after emptying.

Sea-lift containers may be suitable for large semi-permanent camps and permanent industrial sites. These containers can store food, petroleum products or industrial chemicals that could be harmful to wildlife.

Oil seismic camps in Alaska have used large "Conex" or sea-lift containers to keep food, garbage and chemicals away from bears.

Corrugated Steel Grain Storage Bins have been used in barren-ground caribou outfitting camps and forest fire fighting base camps in the Northwest Territories in the off-season to store camp equipment. Outfitting camp use of a grain bin to store hunters' kills works well to deter grizzly bears. Use in polar bear country is encouraged.

Grain bins are lighter and easier to transport than sea-lift containers. A 14' diameter grain bin and wooden floor complete with 8" x 8"beams can fit in a twin otter. Bins can be disassembled and moved as necessary.

APPENDIX B: BEAR DETERRENTS

Firearms

Even with the best prevention measures in place, remote camps should have at least one firearm on site. This firearm needs to have the capacity to kill any bear that presents a serious and immediate threat to human safety. A high powered rifle (30 calibre or larger, with 200 grain soft point ammunition) or a short-barreled 12-gauge shotgun when used with slugs can provide reliable bear protection. Shotguns can also be used to launch noisemakers and non-lethal projectile deterrents.

Always:

- Keep a firearm in a readily accessible location, and make sure all appropriate persons know where it is and how to use it.
- Keep the firearm magazine loaded at all times. Put a shell in the chamber only when ready to fire.
- Train one person to be responsible for firearms and their maintenance
- Practice and review knowledge of firearm safety regularly.

Be Aware!
A firearm is not a substitute for other preventative measures or proper camp management

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

APPENDIX C: DETERRENT TABLE INTRODUCTION

Use of Deterrents:

Key Ingredients	Persistence and a willingness to experiment are the key ingredients required to be successful in deterring wildlife. Consistent actions are far more important than any of the individual deterrent devices.
Deterrent Selection	Each deterrent technique or device has limitations and is not effective in every situation. The most successful long term deterrent efforts use a combination of techniques and devices.
Noise Making Deterrents	All noise making deterrent devices become less effective with repeated use. Bears exposed to noise quickly learn that it does not hurt. Bears who have received a food reward will be much harder to deter using a noise making device.
Loading 12 Gauge Deterrents	All 12 gauge type deterrents should be loaded directly into the chamber one-at-a-time as needed. Direct placement into the chamber allows you to keep the magazine full of lethal rounds in case the bear charges.
Transportation of Dangerous Goods Regulations	Although listed as a limitation this does not preclude the use of these deterrents. The regulations are reality that must be dealt with. Through advanced planning access to these deterrents can be easily accomplished. Explosive type deterrents are classified as a Pyro-techniques and require dangerous goods paper work to be completed. These types of deterrents can not be transported on passenger planes they must go on freight only charters.
Manufactures Warnings	The table contains general information. Always read and follow the manufactures guidelines and warnings when using deterrents.
Field Testing	Much of the comparative information on the effectiveness and limitations of deterrents is about 20 years old. This does not make the information unreliable but does point to the need for further research and testing of potential wildlife deterrents. The following table is based on previous publications and the experience of wildlife officers within the Nunavut Wildlife Service and agencies outside of Nunavut.

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

Method	Summary	Practicality	Advantages	Limitations
Capsaicin "Pepper" Spray	• Last resort deterrent for escape from attack. • 250 ml or larger recommended.	• Portable. • Suitable for people traveling in bear country.	• Able to carry in areas where firearms and explosive type deterrents are not allowed.	• Limited range • Wind can reduce range • Not reliable in sub-zero temperatures. • Has not been well tested on polar bears. • Subject to Transportation of Dangerous Goods regulations, can be difficult and expensive to get into most Nunavut communities
Noise Makers				
Warning Shots	• Can be used to scare bear away.	• Portable. • Readily available. • Inexpensive	• Allows immediate use of lethal force if cartridges remain.	• Least effective deterrent method • Uses up lethal rounds that may be needed to shoot a predatory or attacking bear.
Horns	• Produce loud noise to prevent surprise encounters or scare away an approaching bear.	• Portable. • Easy to use. • Inexpensive.	• Have control over length of noise. • Bear can identify person as source of noise. • Non-pressurized canisters can be transported without Transportation of Dangerous Goods permitting.	• Not reliable in very cold temperatures. • Compressed air type canisters are subject to Transportation of Dangerous Goods regulations; can be difficult and expensive to get into most Nunavut communities.

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

Method	Summary	Practicality	Advantages	Limitations
Sirens	• Produces loud noise to scare away bear or to warn camp occupants of the bear's presence.	- Most effective when used in combination with a detection system.	• The use of hand held types allow the bear to identify person as source of noise.	• Must sound different than other alarm sounds in use.
Explosive Type Launchers				
Pencil Type Launchers	• Pencil sized devices used to fire "bear banger" cartridges. • Cartridges threaded onto end of "pencil."	• Easy to carry. • Easy to use. • Inexpensive.	• Capable of firing other emergency signaling cartridges. i.e. flares & smoke signals.	• Single shot. • Plastic cartridge threaded into metal threads - can cross thread easily. • Subject to *Transportation of Dangerous Goods* regulations; can be difficult and expensive to get into most Nunavut communities.
Pistol type Launchers	• Fire a variety of explosive deterrents - 15 mm "bangers" and "screamers" most common. • Uses .22 caliber hot blank to ignite deterrents, which are placed into muzzle as needed.	• Portable. • Easy to use. • Relatively Inexpensive.	• Fire multiple deterrent rounds rapidly. • Able to launch a variety of scare and signaling cartridges.	• Cartridges subject to *Transportation of Dangerous Goods* regulations; can be difficult and expensive to get into most Nunavut communities.

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

Method	Summary	Practicality	Advantages	Limitations
Pump Action 12 Gauge Shot Gun	• Short barreled firearm with open or cylinder choke (no narrowing of the barrel at the muzzle).	• Relatively portable. • Good choice for deterrent work in and around camps and communities. • Suitable for most problem bear situations. • Moderately expensive.	• Able to fire explosive type deterrents, non-lethal projectiles, and lethal rounds. • Allows immediate use of lethal force if needed. • Capable of firing other emergency signaling cartridges. i.e. flares & smoke signals.	• Canadian Firearms Licence required. • The 12 Gauge "shell crackers" and "whistle crackers" are subject to Transportation of Dangerous Goods regulations.
Explosive type Deterrents				
Pencil type "bangers"	• Explosive deterrent is housed in a plastic casing that is threaded on to end of launcher. • When fired, fused explosive travels out to range where it explodes with a loud noise.	• Good for alerting bear to your presence. • People inexperienced with firearms normally comfortable with using pencil launcher and "bangers".	• Predicable behavior of projectile, fairly consistent range. • Sends noise out to the bear increasing the margin of safety.	• Slow to reload. • Relatively expensive approximately $4.00 / round • Subject to Transportation of Dangerous Goods regulations.

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

Method	Summary	Practicality	Advantages	Limitations
12 Gauge Shotgun "Shell Crackers"	• Long range, explosive deterrent in a 12 gauge shot gun shell. • When fired, fused explosive travels out to range where it explodes with a loud noise.	• Fairly easy to use but requires that the shooter have a basic familiarity with the shotgun in order to use it safely.	• Travels a considerable distance (50-60 m) before exploding so it can be used at greater distances from the bear. • Can be used in conjunction with other 12 gauge deterrents.	• Subject to Transportation of Dangerous Goods regulations. • Possibility of jamming in firearm action - must be loaded directly into chamber as needed. This prevents jamming and allows the magazine to be fully loaded with lethal rounds in case of emergency.
12 Gauge Shotgun "Whistle Crackers"	• Long range, explosive deterrent in a 12 gauge shot gun shell. • When fired, fused explosive makes a continuous high-pitched noise as it travels out to range where it explodes with a loud noise. • Comes in light-emitting version.	- Fairly easy to use but requires that the shooter have a basic familiarity with the shotgun in order to use it safely.	• The high pitched noise from the muzzle out to range makes it easier for the bear to identify the source of noise. • Light emitting version provides a visual display at night to scare the bear; also helps the shooter see the bear.	• Subject to Transportation of Dangerous Goods regulations. • Possibility of jamming in firearm action - must be loaded directly into chamber as needed. This prevents jamming and allows the magazine to be fully loaded with lethal rounds in case of emergency.

APPENDIX C: BEAR DETERRENT SUMMARY TABLES

Method	Summary	Practicality	Advantages	Limitations
Non-lethal Projectiles				
12 Gauge Shotgun Plastic Bullets	• Torpedo shaped plastic projectile. • To be aimed at the large muscle mass areas of the bear such as the rump and shoulders.	• Fairly easy to use but requires that the shooter have a basic familiarity with the shotgun in order to use it safely. • Most jurisdictions replacing with Strike II type (below)	• Not subject to Transportation of Dangerous Goods regulations. • Does not require specialized launcher.	• Hide penetration possible if used at a range of less than 30 m • In below freezing temperatures the plastic can become very hard increasing risk of hide penetration.
12 Gauge Shogun Strike II Rubber Bullet	• Hourglass shaped soft rubber projectile. • To be aimed at the large muscle mass areas of the bear such as the rump and shoulders.	• Suitable for most "problem bear" situations. • Fairly easy to use but requires that the shooter have a basic familiarity with the shotgun in order to use it safely.	• Not subject to Transportation of Dangerous Goods regulations. • Greater accuracy than plastic bullets. • Mushrooms quickly on impact.	• Hide penetration possible if used at a range of less than 30 m.
12 Gauge Shotgun "Bean Bag" rounds	• A lead shot filled fabric bag. • A close range non-lethal deterrent. • Come in a variety of loads and a dye-marking version.	• Excellent option for close range work less than 30 m. • "Close range" load (3-15m) and a "standard" load (9-30 m). • Expensive approximately $10 per standard round and greater than $12 per dye marking round	• Very little chance of hide penetration. • Excellent for close range work in communities and camps. • Not subject to transportation of dangerous goods regulations. • Dye marking round allows you to determine if bear is a repeat offender.	• Short range deterrent not effective beyond 20 m range. • Limited testing on polar bears.

APPENDIX D: WILDLIFE DETERRENT REPORT

WILDLIFE DETERRENT REPORT

Deterrent #:

SPECIES: _____ **# of Animals Involved:** _____

SEX: ____ M ____ F ____ Unknown

ESTIMATED AGE: ___ Calf/Cub/Kit/Pup ___ Sub-adult ___Adult ___ Unknown

DATE: _____
&
TIME: _____ Hrs.

LOCATION :(i.e. mill, airstrip) _____

WEATHER : _____

ANIMAL(S) BEHAVIOUR: (i.e. curious, aggressive, crossing road, etc.)

_____

_____

DETERRENT ACTION

Time Start: _____ Hrs Time Finished: _____ Hrs

TYPE: (Mark number used):	**SUCCESSFUL** (Provide detail on back)
____ Approach w/ Vehicle	____ Yes ____ No
____ Approach on Foot	____ Yes ____ No
____ Shouting / Yelling	____ Yes ____ No
____ Air Horn	____ Yes ____ No
____ Pen Launched Bangers	____ Yes ____ No
____ 15 mm Bangers	____ Yes ____ No
____ 15 mm Screamers	____ Yes ____ No
____ Warning Shots	____ Yes ____ No
____ 12 Gauge Scare Cartridges	____ Yes ____ No
____ 12 Gauge Rubber Bullets	____ Yes ____ No
____ 12 Gauge Rubber Bullets	____ Yes ____ No
Other (specify) _____	____ Yes ____ No

REASON FOR DETERRENT:

____ On Road or Airstrip

____ Investigating Camp / Equipment

____ Destroying Equipment / Property

____ Endangering Human Safety

____ Endangering Self

Other (specify) _____

_____

COMPLETED BY:

_____

DATE / TIME / METHOD reported to DSD:

_____

NOTE: If wildlife damaged property, injured a human, injured itself, was chased with a vehicle or had to be relocated or killed provide information on page 2 of form.

More on Pg. 2 ____ Yes ____ No

APPENDIX D: WILDLIFE DETERRENT REPORT

WILDLIFE DETERRENT REPORT **PAGE. 2**	**DETERRENT #:**
DAMAGE by WILDLIFE ____ Equipment / Supplies: DAMAGE $ _____ ____ Human Injured Other (specify) _____	**CHASED WITH VEHICLE:** ____ ATV ____ Skidoo ____ Truck ____ Helicopter Distance: _____
WILDLIFE RELOCATED	**DATE:** _____ **& TIME:** _____ **Hrs**
CAPTURE METHOD: ____ Darted from Helicopter ____ Darted from the Ground ____ Culvert / Barrel Trap ____ Net Gun from Helicopter ____ Net Gun from Ground	
NDE CONTACT: _____ **Contact No** _____	**HELICOPTER USED:** _____ No. of Hours _____ Rate _____ Total _____
Company Authorization: _____ **Contact No.** _____	CREW: Pilot _____ Biologist _____ Wildlife Officer _____ Wildlife Response Team _____
DRUG USED AND AMOUNT: _____	
DROP OFF LOCATION: (degrees & minutes) **Latitude:** _____ **Longitude:** _____ Descriptive Name: _____	
MARKED: Ear Tag Right Ear: Colour _____ No. _____ Ear Tag Left Ear: Colour _____ No. _____ Other: _____	**RADIO COLLARED:** Type: _____ Frequency _____ Frequency _____
DISTANCE MOVED: _____ KM	**RELOCATION SUCCESSFUL?** ____ YES ____ NO
WILDLIFE KILLED: _____ **Emergency Kill** _____ **Kill Preauthorized by NDE** **NDE Contact:** _____ **No.** _____ **Date Hide & Skull Turned in to DND:** _____ **Carcass Disposal** _____	
ADDITIONAL NARRATIVE IF NECESSARY TO BE ATTACHED	