



**SOUTH KITIKMEOT GOLD PROJECT**  
***ENVIRONMENT AND HERITAGE RESOURCES***  
***PROTECTION PLAN***

**MARCH 2023**

**VIRIDIS MINING & MINERALS**  
Level 50, 108 St Georges Terrace  
Perth, WA 6000

## SUMMARY

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This Plan describes what will be done to avoid damaging the land, air, water, wildlife and archaeological sites within the South Kitikmeot Gold Project area.

## REVISION HISTORY

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Revision #	Date	Section	Summary of Changes	Author	Approver
1	Oct 2022	All	New document	S. Hamm	A. Pervez
1.1	Mar 2023	Sections 2.4, 3.1.8, 4.1.1, 4.1.2, 4.16, 4.17, 7.1.3, Table 4	Revised to address party comments and reflect NIRB conditions	S. Hamm	A. Pervez

# TABLE OF CONTENTS

**SUMMARY** ..... I

**REVISION HISTORY** ..... I

**TABLE OF CONTENTS**..... II

**LIST OF FIGURES** ..... III

**LIST OF TABLES**..... III

**GLOSSARY & ACRONYMS**..... IV

**I INTRODUCTION** ..... 1

**I.1 SCOPE** ..... 3

**I.2 SITE DESCRIPTION**..... 3

**I.3 PLAN MANAGEMENT** ..... 3

**I.4 PLAN IMPLEMENTATION**..... 4

**2 ROLES AND RESPONSIBILITIES**..... 4

**2.1 STAFF, CONTRACTORS, SUPPLIERS AND VISITORS**..... 5

**2.2 MANAGERS AND SUPERVISORS** ..... 6

**2.3 WILDLIFE MONITOR**..... 6

**2.4 PILOTS** ..... 6

**3 PHYSICAL RESOURCES**..... 7

**3.1 AIR QUALITY**..... 7

**3.2 GROUND STABILITY**..... 7

**3.3 HYDROLOGY**..... 7

**3.4 NOISE** ..... 7

**3.5 SEDIMENT AND SOIL QUALITY** ..... 8

**3.6 WATER QUALITY** ..... 8

**4 BIOLOGICAL RESOURCES** ..... 9

**4.1 WILDLIFE** ..... 9

**4.1.1 GENERAL MEASURES** ..... 9

**4.1.2 PROJECT DESIGN**..... 10

**4.1.3 WASTE MANAGEMENT** ..... 10

**4.1.4 NESTING, DENNING AND CALVING** ..... 10

**4.1.5 GRIZZLY BEAR**..... 11

**4.1.6 CARIBOU**..... 11

**4.1.7 MUSKOXEN** ..... 13

**4.1.8 MIGRATORY BIRDS** ..... 13

4.1.9 FISH..... 14

4.1.10 VEGETATION ..... 14

4.1.11 SPECIES AT RISK..... 15

5 HERITAGE RESOURCES ..... 16

6 TRAINING..... 17

7 MONITORING AND REPORTING..... 17

7.1.1 WILDLIFE SIGHTINGS MONITORING & REPORTING ..... 18

7.1.2 SITE SURVEILLANCE MONITORING ..... 18

7.1.3 WILDLIFE REPORTING ..... 18

8 REFERENCES ..... 20

APPENDIX A. INCIDENTAL WILDLIFE SIGHTINGS MONITORING FORM .....AI

APPENDIX B SITE SURVEILLANCE MONITORING PROCEDURES AND FORM .....BI

APPENDIX C. WILDLIFE INCIDENT REPORTING .....CI

**LIST OF FIGURES**

Figure 1. South Kitikmeot Gold Project area map ..... 2

**LIST OF TABLES**

Table 1. Related project documents and authorizations..... 1

Table 2. Buffers around valued wildlife habitat components..... 11

Table 3. Early Warning Zone: distance from project site per season. .... 13

Table 4. Zone of Influence: caribou numbers, by season, indicating a need for mitigation. .... 13

Table 5. Terrestrial Species at Risk potentially interacting with project components. .... 15

## GLOSSARY & ACRONYMS

Term	Meaning
Aurora	Aurora Geosciences Ltd., the exploration program manager acting on behalf of the proponent
Centre for Habitation	Core use area of the Bathurst caribou herd, currently used by the majority of the herd
DOE	Department of Environment
DFO	Department of Fisheries and Oceans Canada
Early Warning Zone	An area centred around project activities, established based on caribou movement rates, directionality of travel and season, used to alert land users of the need for enhanced awareness and monitoring
ENR	Environment and Natural Resources
GNWT	Government of Northwest Territories
GN	Government of Nunavut
Mitigation measure	An action taken to prevent or minimize a negative impact
Project	South Kitikmeot Gold Project and all of its components
Restricted Access Sites	Important features identified on the land, such as an active nest or an archaeological site, which is surrounded by protective buffer and where workers are not allowed to go
Site	Work areas associated with South Kitikmeot Gold Project
Viridis	Viridis Mining & Minerals, the proponent
Zone of Influence	An area centred around project activities where the behaviour and relative abundance of caribou may change in response to the site's activities

# I INTRODUCTION

Viridis Mining & Minerals (Viridis) of Perth, Australia, is a junior exploration company with 100% ownership of the South Kitikmeot Gold Project (the Project) in the Kitikmeot Region of Nunavut. The Project is comprised of series of seven different claim blocks occurring over an area of approximately 11,000 ha, known as Hiqiniq, Ujaraq, Gold Bug, Esker, Bling, Uist, and Qannituq claim blocks, as illustrated in Figure 1.

The purpose of the Project is to conduct exploration-related activities to re-evaluate previously identified historic gold targets and locate new gold targets.

This *Environment and Heritage Resources Protection Plan* (the Plan) describes how project activities may interact with archaeological sites, wildlife and other environmental resources and how any impacts are mitigated. This Plan should be read in conjunction with the documents listed in Table 1, which may be updated from time to time.

Table 1. Related project documents and authorizations.

Document	Authority
Bathurst Caribou Range Plan (2019)	Government of Northwest Territories
Guidelines to Reduce Risk to Migratory Birds (2018, 2021d)	Government of Canada
Northern Land Use Guidelines, Northwest Territories Seismic Operations (2022)	Government of Northwest Territories
Mobile Caribou Conservation Measures – Operational Guidance (Preliminary Draft Report; 2022)	Government of Northwest Territories
<i>Nunavut Act</i> (1993)	Government of Nunavut
<i>Nunavut Archaeological and Palaeontological Sites Regulations</i> (2001)	Government of Nunavut
<i>Nunavut Wildlife Act</i> (2003)	Government of Nunavut
<i>Fisheries Act</i> (1985)	Government of Canada
<i>Species at Risk Act</i> (2002)	Government of Canada
<i>Migratory Birds Convention Act</i> (1994)	Government of Canada
<i>Canada Wildlife Act</i> (1985)	Government of Canada
Screening Decision	Nunavut Impact Review Board
Water Licence	Nunavut Water Board
Land Use Licence	Kitikmeot Inuit Association
Land Use Permit	Crown-Indigenous Relations and Northern Affairs Canada
Archaeology Permit	Government of Nunavut-Department of Culture and Heritage
Wildlife Research Permit	Government of Nunavut-Department of Environment
Scientific Research Licence	Nunavut Research Institute

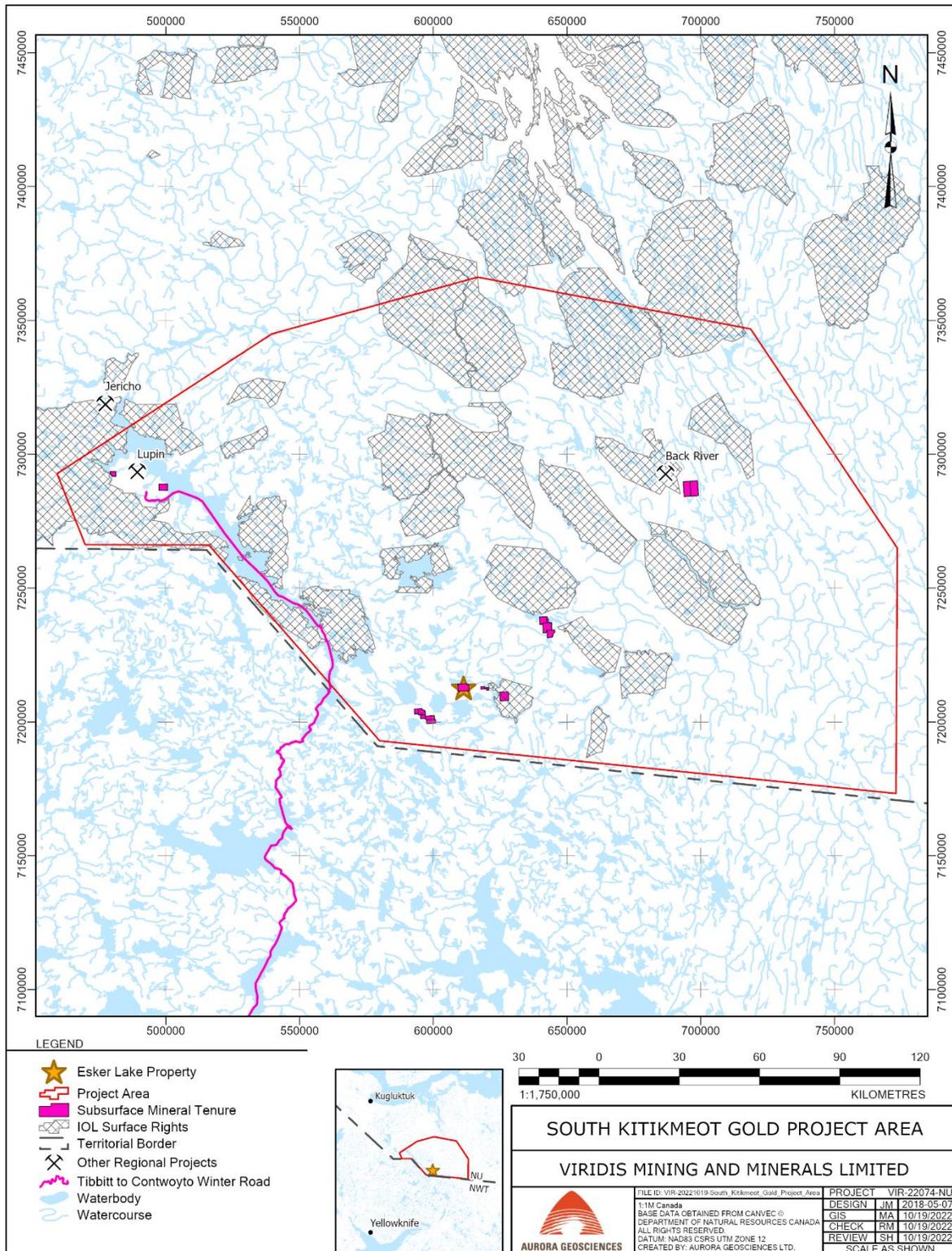


Figure 1. South Kitikmeot Gold Project area map

## 1.1 Scope

This Plan applies to all waste generated throughout the Project during camp operation, drilling and fuel caching.

## 1.2 Site Description

The Project is located 424 km southeast of Kugluktuk, NU, 400 km northeast of Yellowknife, NT and 145 km east - southeast of the Lupin Mine on Contwoyto Lake (Figure 1). Yellowknife is the nearest major centre and main point of access and coordination.

The Project is located within the Southern Arctic Ecozone and the Takijuk Lake Upland Ecoregion. Much of this region is composed of unvegetated rock outcrops. Vegetative cover is characterized by shrub tundra, consisting of dwarf birch, willow, northern Labrador tea, avens species and blueberry species. Organic Cryosols are the dominant soils in the lowlands and permafrost is deep and continuous (Environment and Climate Change Canada (ECCC) 2022). Characteristic wildlife includes caribou (barren ground caribou of the Bathurst, Beverly and Ahlak herds, GNWT 2022), muskoxen, grizzly bear, wolverine, Arctic hare, Arctic fox, red fox and wolf. Small mammals (e.g., Arctic ground squirrel, voles, and lemmings) are distributed throughout the region and provide an important food source for predators. Many species of migratory birds are present in the area during the summer season, including waterfowl, raptors, songbirds, and shorebirds, while some bird species are present year-round (e.g., ptarmigan, gyrfalcon, and common raven) (ECCC 2022).

The area is characterized by very cold winters, brief cool summers and short fall and spring seasons. Climate data from the nearest weather station at the Lupin Mine, 145 km NE of the property, indicate that mean daily temperatures in the area vary from -30°C in January to +12°C in July and that average annual rainfall is 16.0 cm. The topography is gently undulating with sparse bedrock exposures. Lakes and some swamps cover much of the low lying areas (AGL 2016).

The property is centred south of the informally named Esker Lake and includes a small lake in the eastern portion of the claim informally named Sheit Lake in past reports. Elevations on the property range from 390 m at Esker Lake to 430 m at the top of Brandon Hill at 65°01' N 108° 01' W (Zone 12N and NAD 83) (AGL 2016).

## 1.3 Plan Management

This Plan is intended to fulfill requirements associated with all authorizations.

The Plan is reviewed annually by the Project Manager and updated in response to the following:

- Program scope changes to include new activities;
- A new or amended authorization is issued;
- Changes in conditions that could be biologically meaningful have been observed, such as caribou calving within the Project area;
- Results of ongoing engagements indicate a Plan revision is necessary.

When material changes occur, the updated document is provided to parties in accordance with the *Engagement Plan*.

## 1.4 Plan Implementation

This Plan is effective upon approval and is valid throughout all phases of the Project.

The Project Manager or designate is responsible for Plan implementation.

A copy of this Plan is maintained on site in the office, in the local project office in Yellowknife, and in the head office in Perth.

## 2 ROLES AND RESPONSIBILITIES

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Viridis is responsible for activities associated with its exploration program in the South Kitikmeot Project area, including implementation and management of this Plan. Viridis's contact information is:

**Viridis Mining & Minerals**  
Level 50, 108 St Georges Terrace  
Perth, WA 6000  
Phone: 61 3 9071 1847  
**Contact: Agha Shahzad Pervez**  
Email: agha@viridismining.com.au

Aurora Geosciences Ltd. (Aurora) is Viridis's exploration program manager. In some instances, Viridis may delegate its authority for program components to Aurora. Aurora's contact information is:

**Aurora Geosciences Ltd.**  
3506 McDonald Drive  
Yellowknife, NT  
X1A 2H1  
Phone: 867-920-2729  
**Contact: Dave White or Gary Vivian**  
Email: dave.white@aurorageosciences.com, gary.vivian@aurorageosciences.com

## 2.1 Staff, Contractors, Suppliers and Visitors

All personnel conducting activities on site, including staff, contractors, suppliers and visitors, are required to implement this Plan as it pertains to their activities on site. Specifically, these responsibilities include:

- Completing site orientation including wildlife awareness training;
- Taking all necessary steps to minimize negative effects to water, land and air;
- Cooperating fully with your supervisor and/or Viridis management to implement an environmental protection program in your work area;
- Only carrying out duties and tasks that you are experienced at and trained to perform;
- Where there is uncertainty, asking questions and bringing concerns to the attention of your supervisor when working with products or conducting tasks that may pose potential environmental risks;
- Maintaining confidential the location of found archaeological sites;
- Ensuring found archaeological sites remain undisturbed;
- Reporting wildlife observations and interactions, archaeological finds, spills and emergency situations to the Camp Manager;
- Where possible, try to stay out of sight of wildlife or redirect travel away from wildlife where possible;
- If caribou cows and calves, muskoxen groups or other wildlife aggregations are observed foraging or migrating within a work area as crews approach, avoid the work area until the animals have moved on;
- Avoid deliberate destruction or disruption of bird nests, eggs, wildlife dens, burrows, and other sensitive habitat features;
- Record all wildlife sightings in the Wildlife Incidental Observation Log (Appendix A);
- Remove any wildlife attractants such as garbage.

## 2.2 Managers and Supervisors

Managers and supervisors have a responsibility to ensure that staff, contractors, consultants and visitors have been trained in Viridis environmental and archaeology protection expectations and procedures. Additional supervisor and manager responsibilities include:

- Conducting wildlife awareness training;
- Ensuring that all personnel adhere to recommended mitigation measures;
- Ensuring all personnel adhere to all buffer zones around Restricted Access Sites;
- Maintaining a no blame work environment in implementing mitigation measures and follow-up actions;
- Ensuring site-, task- and material-specific training is provided to all departments and staff;
- Ensuring there are appropriate and sufficient supplies on site to support implementing mitigation measures and follow-up actions;
- Providing assistance in responding to environmental hazards;
- Engaging the project archaeologist, and the Territorial Archaeologist in accordance with this Plan;
- Maintaining records regarding inspections, personnel training, equipment testing and maintenance; and
- Engaging with relevant parties in a timely and transparent manner, where appropriate.

## 2.3 Wildlife Monitor

Designated personnel trained and qualified as Wildlife Monitors are responsible for:

- Carrying and keeping safe registered firearms, used for worker safety only;
- Documenting and reporting all firearms discharges to the Camp Manager;
- Confirming wildlife sensitive areas (dens, nests etc.) and establishing appropriate Restricted Access Sites;
- Responding to wildlife sightings and implementing recommended mitigation measures;
- Responding to wildlife interactions and conducting related internal and external wildlife reporting; and
- Managing wildlife documentation; and
- Carrying out site surveillance monitoring and confirming presence/absence of caribou and other wildlife of special concern within the vicinity of Project activities and document in the log (Appendix B).

## 2.4 Pilots

All pilots (helicopter and fixed-wing) are responsible for:

- Diverting flight path around observed wildlife;
- Avoiding touchdown in areas where wildlife are present except in emergency situations;
- Avoiding raptor nests; and
- Enforcing any authorized flying limits at all times except in emergency circumstances and during take-off and landing.

## 3 PHYSICAL RESOURCES

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Potential effects and protection measures pertaining to the physical environment are outlined below.

### 3.1 Air Quality

Air quality can be affected through emissions from incineration, open burning and equipment operation. Negative effects to air quality arising from project activities can be mitigated by:

- Incinerating camp wastes in compliance with the *Technical Document for Batch Waste Incineration* (EC 2010);
- Open burning only clean wood and paper products that are too large to be incinerated;
- Avoiding incineration of waste oil/grease;
- Conducting routine preventative maintenance on generators and engines.

### 3.2 Ground Stability

Ground stability can be affected through excavating, rutting or otherwise disrupting the ground and permafrost. Negative effects to ground stability arising from project activities can be mitigated by:

- Constructing the camp and set up drills on durable land;
- Moving equipment overland only when conditions are such that rutting or gouging will not occur;
- Avoiding activities such as excavations that may result in permafrost degradation;
- Restrict heavy equipment operation and activities where possible to existing disturbed areas.
- Maintain a minimum of 10 cm of snow cover when moving equipment overland over snow.
- Using existing disturbed areas where possible; and
- Managing drill sites and sumps in accordance with the *Closure and Reclamation Plan*.

### 3.3 Hydrology

Hydrology can be affected through unapproved water use that may occur in relation to camp operation or drilling. Hydrologic effects are mitigated through compliant water use, water reuse during drilling.

### 3.4 Noise

Ambient noise levels can be affected by operation of Project equipment such as generators, helicopters heavy equipment (i.e. drills) and snow machines. Negative effects to noise levels can be mitigated by:

- Conducting routine preventative maintenance on generators and engines;
- Ensuring mufflers are in use, as required by manufacturers; and
- Using quieter alternative equipment where possible.

### 3.5 Sediment and Soil Quality

Sediment and soil quality can be affected by poor drilling practices and spills. Negative effects to soil and sediment quality can be mitigated by:

- Employing best drilling practices;
- Managing drill sites in accordance with the *Closure and Reclamation Plan*;
- Storing drilling related materials in accordance with the *Spill Response Plan*;
- Using only inert drilling fluids during on ice drilling.

### 3.6 Water Quality

Water quality can be affected by unplanned or non-compliant discharges to the aquatic environment. Negative effects to water quality can be mitigated by:

- Employing best drilling practices;
- Managing drill sites in accordance with the *Closure and Reclamation Plan*;
- Using only inert drilling fluids during on ice drilling;
- Adhering to the *Spill Response Plan* where required;
- Implementing erosion control where necessary, to prevent sediment from entering any waterbody;
- Depositing inert drill water in a suitable sized upland sump, >100 m above the high water mark of any watercourse; and
- Discharging grey water and core saw effluents in a suitable sized upland sump, >100 m above the high water mark of any watercourse or otherwise in accordance with water licence terms and conditions.

## 4 BIOLOGICAL RESOURCES

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Potential effects and protection measures pertaining to the biological environment are outlined below.

### 4.1 Wildlife

Exploration activities may affect wildlife and their habitat in a variety of ways including:

- Habituation and attraction to personnel, activities and/or the camp;
- Indirect habitat loss;
  - Avoidance or reduced use of areas near a disturbance.
  - Increased energy expenditure due to a response to sensory disturbance.
- Direct habitat loss through land clearing or disturbance;
- Disruption of movement
  - Delayed crossing or avoidance of Project exploration area.
- Mortality
  - Direct, through collision with vehicle;
  - Indirect, through increased hunter knowledge of caribou in the area that may arise through informal and social communications.

Mitigation measures presented below are designed to be practicable, effective, relative to the Project scope and responsive to wildlife use of the habitat in the Project area.

#### 4.1.1 General Measures

Various wildlife occur in the Project area year round. Effects can be mitigated by all workers by:

- Ensuring wildlife are given the right of way at all times.
- Ceasing activities that may impede migration.
- Avoiding harassment or feeding of any wildlife for any purposes, including photographing from the ground or air.
- Prohibiting all project personnel from hunting while on site.

#### 4.1.2 Project Design

Mitigation through Project design involves consideration of potential effects prior to commencing Project activities and factoring mitigation measures in to how the Project is built and how activities are undertaken. Mitigation of wildlife effects by project design includes:

- Selecting camp location to avoid known sensitive habitats or wildlife habitat features (e.g. wildlife trails, den sites, raptor nests, etc.);
- Designing the camp layout and construction in a manner that avoids wildlife entrapment and attraction, prevents ingress and sheltering, and secures attractants to prevent wildlife access;
- Minimizing the camp footprint;
- Planning for camp construction to occur outside times that are sensitive for wildlife (e.g. spring calving, nesting);
- Minimizing the footprint of drill pads by utilizing a small drill where possible, maintaining a consolidated work area, and drilling multiple holes from one set-up;
- Choosing drill pad locations in a manner that considers known sensitive wildlife areas and maximizes the drilling to occur from each pad, thus reducing the number of drill set-ups;
- Utilizing air access only in summer, avoiding the establishment of new roads and trails;
- Locating sumps, fuel caches, the camp and equipment >100 m from the high water mark of any waterbody, unless otherwise approved, to avoid effects to aquatic life and habitat; and
- Avoiding any contact with wildlife including approaching, harassing, disturbing and feeding wildlife.

#### 4.1.3 Waste Management

Proper waste management minimizes wildlife attraction to work areas. The following waste management measures, as documented in the *Waste Management Plan*, are employed:

- Garbage, including all food wastes, is stored in covered, metal containers;
- Food waste and sewage is either incinerated daily or securely stored for backhaul;
- Wastes and materials are stored in accordance with the *Spill Response Plan*;
- Open top vessels containing waste products are not left unattended;
- If aggressive wildlife become an issue at camp, an electric fence may be installed around camp and /or waste management facilities or fuel storage areas;
- Grey water sumps are periodically dosed with bleach or lye to reduce odours and attractants.

#### 4.1.4 Nesting, Denning and Calving

Nesting, denning, calving and river crossings are vulnerable life stages sensitive to disturbance, protected by legislation in many instances, and may occur in the Project area from late winter through to mid summer, depending on habitat and wildlife. If active nesting, denning or calving is observed:

- Cease activities in the vicinity immediately to avoid disturbance;
- Establish a buffer around the site by flagging or other means, document and designate as a Restricted Access Area, as listed in Table 2;
- Ensure the Restricted Access Area is maintained until the nest or den is no longer in use, or cows and calves have moved on.

Table 2. Buffers around valued wildlife habitat components.

Species	Habitat Component	Buffer Distance
Migratory birds	Nest	10 m – 1 km*
Wolf	Den	800 m
Wolverine	Den	800 m
Grizzly Bear	Den	1 km
Caribou	Crossing	5 km

\*Varies with species, activity and proximity. Buffer distance can be determined in accordance with GNWT guidelines (GNWT 2022) or in consultation with the Canadian Wildlife Service at [cwsnorth-scfnd@ec.gc.ca](mailto:cwsnorth-scfnd@ec.gc.ca)

#### 4.1.5 Grizzly Bear

Should a grizzly bear be in the vicinity of the camp or a drill, all personnel remain in the camp or drill shack to the greatest extent possible until the grizzly bear has moved a safe distance away.

Should crews conducting land-based surveys on foot encounter a grizzly bear at a safe distance they divert their course to stay away from the bear. In the event that a human-bear encounter is imminent, a helicopter may be used to assist in deterring bears from entering the camp if necessary, and from the immediate vicinity of field crews. A helicopter may subsequently evacuate field personnel from potential bear encounter situations.

#### 4.1.6 Caribou

Given the social and ecological importance of caribou to the economy and residents of the Territories, and the specific consideration afforded caribou, it is important to consider caribou-specific Project interactions and understand the relative risk posed by the Project to caribou.

Caribou and their associated habitats can be affected by various factors associated with construction, operation and closure activities, including removal of habitat, disturbance from vehicles and equipment, and camp activities.

The Project is situated in area used by various herds of barren ground caribou including Beverly, Ahiak and Bathurst. The Project area is predominantly traversed by Bathurst caribou, being situated in Area 1 of the Bathurst Caribou Range Planning area and within the current Centre of Habitation (GNWT 2019). Accordingly, Viridis has adopted applicable components of the draft operational guidance issued by the Government of Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR), which have been developed specifically for land use operations occurring in the Centre of Habitation. These measures are considered to be adequately protective of all caribou encountered in the Project area. In summary, these measures include:

- Utilizing triggers for monitoring and mitigation through establishment of:
  - **Early Warning Zone**, an area centered on project activities, with a radius of 15-45 km (see Table 3) depending on the season.
  - **Zone of Influence**, an area centered on project activities, with a radius of 5 km.
- Monitoring for caribou
  - Within the Early Warning Zone by incidental observations and caribou collar locations obtained from the GNWT under a data sharing agreement;
    - Observations in the Early Warning Zone trigger preparation for mitigation measures should the animals move closer to project activities, or the number of caribou observed within the inner half of this zone increase.
  - Within the Zone of Influence, should incidental observations and caribou collar locations indicate caribou present exceed those listed in Table 4, mitigation measures are initiated.
- Tiered mitigation measures to minimize or avoid sensory disturbance
  - Basic, applied throughout all stages of project activities:
    - Provide employee education and caribou awareness training;
    - Avoid direct movement of equipment and people toward caribou;
    - Avoid approaching caribou or stopping within sight of caribou when operating vehicles including all-terrain vehicles and snow machines; and
    - Maintain at least 610 m above ground level and avoid areas of known caribou concentrations when possible (subject to pilot discretion regarding aircraft and human safety) when flying over calving and post-calving range and near identified caribou water crossings when sites are active, and otherwise maintaining an altitude of 300 m above ground level.
  - Additional, based on caribou movement into the Zone of Influence
    - Limit aerial support to required movements only;
    - Delay or alter aerial or drill programs and minimize ground activity, where practical, to avoid initiating or continuing work in areas with caribou or helicopter travel over areas with caribou;
    - Where delays are not feasible or practical engage with ENR to develop a project-specific plan.
  - Additional, based on pregnant caribou cows, cows with young calves, or groups of 50 or more caribou be observed within one (1) kilometer of project operations at any time,
    - Suspend all operations in the vicinity, including low level overflights, drilling blasting/trenching, and use of snowmobiles and all terrain vehicles outside the immediate vicinity of the camp, until caribou are no longer in the immediate area.

Table 3. Early Warning Zone: distance from project site per season.

Season	Dates	Distance from Project Site (km)
<b>Spring migration</b>	20 Apr – 1 Jun	35
<b>Calving</b>	2-16 Jun	25
<b>Post-calving</b>	17-28 Jun	35
<b>Summer</b>	29 Jun – 6 Sep	45
<b>Fall</b>	7 Sep – 30 Nov	30
<b>Winter</b>	1 Dec – 19 Apr	15

Table 4. Zone of Influence: caribou numbers, by season, indicating a need for mitigation.

Season	Thresholds for Mitigations			
	Low Risk		Moderate Risk	
	# Collars Reported	# Caribou Observed	# Collars Reported	# Caribou Observed
Spring migration	4	≥400	2	≥200
Calving	2	≥100	2	≥50
Post-calving	2	≥200	2	≥100
Summer	4	≥400	2	≥200
Fall	4	≥200	2	≥100
Winter	6	≥600	4	≥400

#### 4.1.7 Muskoxen

Should muskoxen occur within one (1) kilometer of project operations between April 14 and June 1, all operations in the vicinity, including low level overflights, drilling, trenching, and use of snowmobiles and all terrain vehicles outside the immediate vicinity of the camp are suspended until muskoxen are no longer in the immediate area.

#### 4.1.8 Migratory Birds

As discussed in Section 4.1.4, measures are in place to protect migratory birds from Project effects specifically during nesting. Active nest searches are not generally recommended as they are often ineffective and may result in disturbing or damaging the nest which in turn may influence survival. Similarly, flagging nest location is discouraged as this support an increase in predation; buffer zones delineating a Restricted Access Area may be flagged instead (ECCC 2021).

The Project occurs within nesting zone N9. Nesting in the Project area typically occurs between early mid-May and mid-August, with highest nesting intensity between June 5 and July 25.

#### 4.1.9 Fish

Fish and fish habitat are protected by law. Work in and around water can affect fish and fish habitat directly and indirectly:

- Changes in water quality and hydrology can impact the ability for fish to forage, rear, spawn and migrate;
- Physical disturbance to watercourses below the high water mark can physically alter fish habitat;
- Upland activities such as land disturbance and vegetation clearing can result in sediment deposition into water courses, impacting fish health and habitat;
- Winter water withdrawal from shallow fish-bearing watercourses can reduce oxygenated water availability and result in fish mortality.

Accordingly, the following mitigation measures are implemented to protect fish and fish habitat throughout the project:

- No waste is allowed to enter any water body at any time;
- Water intakes are screened in accordance with the Department of Fisheries and Oceans (DFO) *Interim Code of Practice* (2020);
- Equipment operating on ice or near water is free of leaks, grease, oil and mud;
- Equipment maintenance and refueling occurs >100 m beyond the high water mark of any watercourse;
- Vegetation clearing adjacent to watercourses is avoided to the greatest extent possible; and
- On-ice drilling utilizes inert drilling muds and a cuttings capture system to avoid cuttings release into the water column.

#### 4.1.10 Vegetation

Vegetation can be affected by on land activities such as a site access, camp operation and drill movement. Negative effects to vegetation can be mitigated by:

- Employing best drilling practices including
  - Establishing drill sites on durable surfaces;
  - Minimizing salt use during diamond drilling where possible;
  - Minimizing drill water discharge to land to the greatest extent possible during diamond drilling;
  - Depositing inert drill water in a suitable sized upland sump;
  - Managing drill sites in accordance with the *Closure and Reclamation Plan*.
- Constructing the temporary camp on a durable surface;
- Moving equipment overland only when conditions are such that rutting or gouging will not occur; and
- Adhering to the *Spill Response Plan* where required.

#### 4.1.11 Species at Risk

Terrestrial species at risk listed in Table 5 may occur in the project area as their habitat extents overlap with the study area boundaries. Species most reasonably expected to interact with the Project and specific measures to mitigate effects are presented in preceding sections.

Table 5. Terrestrial Species at Risk potentially interacting with project components.

Species	COSEWIC <sup>1</sup> Designation	SARA <sup>2</sup> Status	Responsible Management Authority	Management Tool <sup>3</sup>
Barren Ground Caribou	Threatened	Under Consideration	GNWT, GN	
Grizzly Bear (western population)	Special concern	Special concern	GN	
Wolverine	Special concern	Special concern	GN	
Bank Swallow	Threatened	Threatened	ECCC	Recovery Strategy - proposed
Harris's Sparrow	Special Concern	Under Consideration	ECCC	
Lesser Yellowlegs	Threatened	Under Consideration	ECCC	
Red-necked Phalarope	Special Concern	Special Concern	ECCC	Management Plan - Proposed
Short-eared Owl	Threatened	Special Concern	ECCC	Management Plan

<sup>1</sup> Committee on the Status of Endangered Wildlife in Canada

<sup>2</sup> *Species At Risk Act*

<sup>3</sup> Posted on the Species at Risk Public Registry

## 5 HERITAGE RESOURCES

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Heritage resources such as archaeological sites are protected by law and can be affected by on land activities such as site access, camp operation, prospecting and drill movement. Potential negative effects to archaeological sites can be mitigated by:

- Conducting an archaeological assessment prior to program commencement;
- Minimizing land disturbance outside of camp footprint and drill sites;
- Avoiding construction of new stone features;
- Where possible, avoiding interaction with and disturbance of known or suspected archaeological sites, including rocks that may appear to be in some formation;
- Where not possible to avoid interaction with known archaeological sites, proceed with direction from the Territorial Archaeologist;
- If a suspected archaeological site or human remains (structures, artifacts or bones) are encountered during the Program:
  - Immediately stopping work in the vicinity and notifying the Camp Manager who will notify the Territorial Archaeologist (867-934-2040);
  - Establish a Restricted Access Area around all known or suspected archaeological sites, unless otherwise approved;
  - Leave the site undisturbed;
  - Document the occurrence including
    - Taking several representative photos of the site with an appropriate scale marker.
    - Describe the nature and extent of the site and any artifacts noted.
    - Note the site coordinates and datum used.
    - Mark the location of the site on a 1:50,000 scale topographic base map.
    - Record the date of discovery.
  - Keep confidential the location of known and found archaeological sites.

Any activities undertaken on site in relation to archaeological surveys, finds or mitigations are done so by or under the direction of the project archaeologist.

## 6 TRAINING

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The purpose of personnel training and awareness is to demonstrate that it is each person's responsibility to minimize Project effects on wildlife, archaeological sites and the environment in general and to ensure the safety of all personnel involved with the exploration Program. As a part of the Site Orientation, all personnel, including staff and contractors, are engaged in a discussion on local environmental and archaeological resources including:

- Basic local wildlife ecology and possible Project-related effects on wildlife and wildlife habitat;
- Operating protocols such as incidental observation reporting;
- Awareness of known wildlife-sensitive areas such as breeding areas, den sites, nests and wildlife-sensitive periods and related typical wildlife behaviours;
- Project protocols associated with dealing with aggressive or unusual wildlife behaviour around work areas or camp;
- Wildlife attractant management;
- Wildlife safety including bears and predators, detection and deterrence;
- Wildlife incident reporting and response procedures;
- Archaeological chance find procedures; and
- Compliance expectations and non-compliance disciplinary actions that may be enforced.

## 7 MONITORING AND REPORTING

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Compliance reporting occurs in accordance with regulatory requirements and the *Engagement Plan*, with additional reporting detailed in subsequent sections.

Routine documentation supporting protection of environmental and archaeological resources include:

- Maintaining equipment preventative maintenance logs and required follow-up actions on site;
- Documenting water use and waste disposal in accordance with the water licence;
- Logging and reporting wildlife observations, including Species at Risk;
- Maintaining a layer in the Project GIS system that identifies:
  - Watercourses suitable for, and those previously used for, water withdrawal;
  - Known archaeological sites surrounded by a buffer, the location of which is to be kept confidential, considered and avoided in future drill program planning;
  - Key habitat features such as dens and nests, the location of which is to be considered and avoided in future drill program planning;
  - Drill cuttings sumps.

A copy of documents can be made available to an Inspector upon request.

In addition, monitoring and reporting, programs are in place to further support mitigation and compliance. These programs include the following:

- Wildlife Sightings Monitoring;
- Site Surveillance Monitoring; and
- Wildlife Incident Reporting.

Details of these programs are described below. Work instructions and data sheets are provided in the appendices.

### **7.1.1 Wildlife Sightings Monitoring & Reporting**

Documenting incidental wildlife sightings provide a simple means for all site workers to contribute to tracking wildlife activity at the Project, support an understanding of current wildlife use of the area and may support early detection of problem wildlife and areas of concern at the project.

Wildlife sighting logs (Appendix A) are posted in camp for all workers to fill out. Completed logs are submitted to the Wildlife Monitor and reviewed weekly for evidence of problem wildlife, problem areas that may pose a risk to wildlife, or observations of Species At Risk. Information collected is retained for internal use, to inform future environmental baseline studies and to support reporting.

Wildlife sightings may be reported externally as required in authorizations and legislation.

### **7.1.2 Site Surveillance Monitoring**

Site surveillance monitoring involves a systematic inspection of Project areas to observe and document wildlife activity in the vicinity of the Project to determine the level of compliance with and the success of mitigation measures.

Surveillance monitoring is undertaken by the Wildlife Monitor weekly when the camp is occupied and involves a tour of the Project area to record any wildlife and recent sign observed as well as dens or nests and status of any wildlife-related Restricted Access Areas. Project infrastructure is inspected for wildlife attractants for food or shelter. A survey for active nests in all Project work areas is undertaken in the spring. Surveys are documented in a form and findings are used to inform compliance management and future environmental baseline studies. Detailed procedures and inspection form can be found in Appendix B.

### **7.1.3 Wildlife Reporting**

Wildlife incidents refer to a range of possible occurrences at the project, including:

- Human-wildlife interactions that present a risk to either people or animals;
- Wildlife-caused damage to property or delay in operations;
- Wildlife deterrent actions; and
- Wildlife injury or mortality.

All wildlife incidents are documented including:

- Photographs (if possible);
- Names of people involved;
- Nature of the incident;
- Supporting information such as the time, date, and location;
- Response measures and corrective actions taken.

The Wildlife Monitor is responsible for documenting and reporting wildlife observations, species at risk and incidents. Depending on the nature of the incident and species involved, reporting internally occurs to the Camp Manager and Operations Manager, and externally to the following

- GN Regional Wildlife Biologist (867-982-7444) and/or GN Regional Wildlife Manager (867-982-7441) for problem wildlife, nest disturbances for non-migratory birds (e.g. raptors, corvids and ptarmigan), wildlife incidents or mortalities;
- GN Conservation Officer (867-982-3058) for wildlife incidents or mortalities;
- ECCC Canadian Wildlife Service [cwsnorth-scfnord@ec.gc.ca](mailto:cwsnorth-scfnord@ec.gc.ca) for migratory birds;

Incidents are documented on the form found in Appendix C.

Additional reporting will be undertaken pursuant to authorizations and data sharing agreements.

## 8 REFERENCES

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# **APPENDIX A. INCIDENTAL WILDLIFE SIGHTINGS MONITORING FORM**

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## Wildlife Sighting/Encounter Report

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Species:

Number Seen:  
(indicate whether exact number or estimate)

Date and Time of Day:  
(Include PM or AM)

Location:  
(Provide GPS coordinates and/or mark it on the map back side of this page)

What was it doing when sighted/encountered?  
(any specifics are helpful: Healthy? Limping? Behavior? etc.)

Other Comments/Interesting Markings:  
(Feeding on something, injured, etc.)

Name of Observer and Contact Information:



## **APPENDIX B SITE SURVEILLANCE MONITORING PROCEDURES AND FORM**

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## Wildlife Surveillance Monitoring Procedures

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### Objective

To prevent wildlife incidents through systematically documenting wildlife activity at the property.

### Procedures

Surveys of the project for wildlife and wildlife sign will be completed at least once per week. Observers will travel to defined location, and record the following at each:

- Time upon arrival at location / monitoring site
- Location or monitoring site
- Presence of wildlife or wildlife sign (Yes or No)
- Species or sign observed
- Number of individuals
- Activity
- Photo number (if photo taken)
- Any relevant comments about the observation, or relevant information from people working at the location.

Any reports of sign or observations of species from exploration staff working in the area shall be recorded on the data sheets in the additional comments section on the reverse side of the data sheet. Photos of sign and wildlife should be taken where possible to help in identification of species after completion of the survey. Record the photo number on the data sheet and download and file the photos by date.

If no wildlife is observed, no sign seen and no reports of wildlife from staff, then an “N” should be recorded on the data sheet and in the database for that monitoring site / location.

### Locations for Systematic Monitoring

The following areas / sites will be visited every day and logged once per week:

- Accommodation buildings (entire perimeter) – including drill shack
- Drill sites

### Follow Up

Any wildlife concerns that come to light during the survey should immediately be brought to the attention of the Project Manager so that appropriate action can be taken. Any wildlife incidents observed or reported during this survey should be reported in the Wildlife Incident Report Form (see separate form). Reporting forms and a summary of findings are to be included in the Wildlife Monitoring Program Annual report to inform the need for adaptive management at site.



**Wildlife Surveillance Monitoring Form (continued)**

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Additional Comments or Notes:

Environmental Lead Approval/Project Manager  
(Signature): \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX C. WILDLIFE INCIDENT REPORTING**

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