YESAA Designated Office Evaluation Report

1) Environmental and Socio-economic Assessment File Information

Project Title	**Project File Number**
Wernecke Winter Road Access Project	2007-0205
Proponent Name	**Evaluation Start Date**
Cash Minerals Ltd.	October 30th, 2007
Contact Person	**Evaluation Finish Date**
David Petkovich	December 24th, 2007

Designated Office Recommendation Summary

Pursuant to section 56(1)(b) of the *Yukon Environmental and Socio-Economic Assessment Act*, it is recommended that the project be allowed to proceed, subject to specified terms and conditions. The Mayo Designated Office has determined that the project will have significant adverse environmental or socio-economic effects in or outside the Yukon that can be mitigated by those terms and conditions.

2) Designated Office Assessment Officer Identification

Designated Office	**Assessment Officer**
Mayo	Loralee Johnstone

3) Decision Body or Bodies and Potential Authorization Identification

Decision Body	**Potential Authorization(s) Required**	**Act or Regulation**
EMR – Lands Branch	Land Use Permit	*Land Use Regulations*

4) Project Activity or Activities Included in Schedule 1 of the Regulations* and not Excepted

Proposed Activity	**Part**	**Item**
Construction of and Aerodrome	6	1
Construction, modification or decommissioning of a public road	6	10
Activity in relation to a watercourse crossing	9	4

**** Assessable Activities, Exceptions, and Executive Committee Projects Regulations***

5) Project Location

Latitude and Longitude or UTM Coordinates		
NW Boundary 7259896N, 478740E (Furthest Point North)	**NE Boundary**	
SW Boundary 7090367N, 479303E (Beginning of WRT)	**SE Boundary**	
NTS Map Sheet # 105M – 105N – 106C – 106D 106E – 106F	**Nearest Community** Elsa Mayo	**Distance** 2 km 60 km

First Nation Traditional Territories Involved: Nacho Nyak Dun First Nation
Watershed(s) and Drainage Region Major Drainage Area: Peel River, Wind River
Nearby Watercourse(s) or Waterbody(s) Beaver River, South McQuesten River, Braine Creek, Bear River

6) Statement of Project Scope

Project Scope:

The principle activity of this project is the opening of 178 km of an existing winter road (Wind River trail) and using an existing spur route along the Bear River. The winter road and spur route will be used to transport supplies, equipment and fuel to four active mineral exploration programs in the Wernecke Mountains. Access along identified routes is proposed to be used during the winter months for up to a five year period.

Project Activities:

Principle activities:

- Upgrading and maintaining existing trail (Wind River trail)
- Use of existing spur route along Bear River
- Widening of the Wind River trail for construction of an airstrip

Accessory activities:

- Mobilizing fuel and supplies with heavy equipment to 4 cache sites
- Storing fuel and supplies
- Constructing ice bridges for water crossings
- Utilizing a mobile 4-5 person camp

7) Project Notification List

Proponent – Cash Minerals Ltd.
Yukon Government –DB –Land Use Branch
YFN Government – Nacho Nyak Dun
Yukon Land Use Planning Council

Sam Ahad	Dick Horne	Roxanne Schofield-Wray
Michael Anderson	Sandra Horvath	Michael Setterington
Peter Arendt	Bonnie Huebschwerlen	Barb Shannon
Karen Baltgailis	Nicole Hulstein	Judy Shannon
Cameron Beemer	Torrie Hunter	Roy Slade
Jim Bell	Stephen Hureau	James Smith
Dorothy Bradley	David Isopo	Sean Smith
Kevin Brewer	David Joe	Norman Snowshoe
Environment Officer	Loralee Johnstone	Nichole Speiss
Kirk Cameron	Kim Kalen	Arno Springer
Randy Carey	Cheryl Kawaja	Mark Stephens
Sam Cheng	Sue Kemmett	Lands Assistant
Kim Cholette	Greg Kent	Susan Stuart

Scott Cole	H. Leo King	Pat Tobler
Diarmuid Collins	Annick Le Henaff	Yukon Trappers
Sean Collins	Nancy LeBlond	Felix Vogt
Gerry Couture	Josee Lemieux-Tremblay	Jesse Walchuk
Tom Cove	Deana Lemke	Mary Walden
Martin Crill	Lara Lewis	Sam Wallingham
Brian Crist	Leonard Linklater	Maghann-Leigh Willard
Dave Croft	Timothy Liverton	Abe Wilson
Emma Cunningham	Derek Loots	John Witham
Doug Davidge	Arthur Lotz	Margrit Wozniak
Corey De La Mare	Grant Lundy	Joe Yanisiw
Mike Dehn	Don MacDonald	Evalina Zamana
Heather Desmarais	Wildlife Tech	David Petkovich
Kimberly Dolhan	Peter Mather	William Polonsky
Lawrence Dublenko	Scott McAllister	Michael Purves
Jesse Duke	Lorna McCutcheon	Anne Reyner
Darius Elias	Chris Mckinnon	Stephen Reynolds
Kathy Elliot	Bernard Menelon	Travis Ritchie
Mark Evans	James Miller	John Ryder
Andrea Fischer	Andrea Morgan	Heather Saggers
James Frolich	Randi Mulder	Jeff Hamm
Edward Gates	Murray Munn	Bill Harris
Albert Genier	Donald Murphy	Kelly Hayes
Benoit Godin	Mark O'Donoghue	Eric Hellsten
Steve Gordey	Sandra Orban	Keith Hepner
Jeffrey Green	Skylan Parker	Mac Hislop
Deb Hadwen	Juri Peepre	Joella Hogan
Martin Haefele	Lee Persinger	
Michael Hale	Mikolay Peter	

*See Appendix I - Summary of Responses from Interested Persons and Others

8) Potential Effects Assessment Summary and Reasons for Recommendation

Context of this assessment:

Context for Project and Cumulative Effects Scoping

The foundation of any assessment includes the identification of the scope of the project. In the process of developing the scope of the project, the assessor identifies all the relevant activities associated with the proposed project. It is from these identified activities that the assessment examines potential effects and mitigations.

In developing the scope of the project, Section 51 of YESAA specifies that:

"A designated office or the executive committee shall determine the scope of a project to be assessed by it, and shall include within the scope of the project, in addition to any activity identified in the proposal, any other activity that it considers likely to be undertaken in relation to an activity so identified and sufficiently related to it to be included in the project"

In practice, *YESAA* assessments incorporate the criteria of 'interdependence' and 'linkage' to provide specific guidance on implementing section 51 of the *Act*. These criteria are consistent with the criteria provided for in the Designated Office Rules (S.46), and are described below.

The test of interdependence sets out that, if the proposed project could not proceed without the undertaking of another activity, then that other activity may be considered a component of the proposed project.

The test of linkage relates that, if the decision to undertake the proposed project makes the decision to undertake another activity inevitable, then that other activity may be considered as a component of the proposed project. Inevitability is not necessarily judged by the ultimate desired outcome of a project (e.g. winter trail development does not inevitably lead to mines, despite the intention).

Scope of the Project

Taking into account section 51 of the *YESAA* and the applicable rules, the assessor has determined the temporal scope of the project will be five years and include the following activities that will be considered in the assessment:

- Upgrading and maintaining the existing trail (Wind River trail)
- Use of existing spur route along the Bear River
- Widening of the Wind River trail for construction of an airstrip
- Mobilizing fuel and supplies with heavy equipment to 4 cache sites
- Storing fuel and supplies
- Constructing ice bridges for water crossings
- Utilizing a mobile 4-5 person camp

Not in the Scope of the Project

A number of points have been raised, in the course of public comments on this project, which directly relate to the scope of the project. In particular, comments have been received that suggest the following activities be included in the scope of the project:

1. future uranium mining;

2. all season access development; and

3. induced industrial activities.

1. Future Uranium Mining

Numerous comments received in relation to the assessment of this proposed project have been associated with the concern (and implications) of future uranium mining in the region. The proposed project facilitates uranium exploration activities and is perceived by some as a pre-cursor to mine development.

The effects of future uranium mining have not been included in the scope of the project. Firstly, the tests of interdependence and linkage do not capture future uranium mining development activities, (i.e. uranium mining is not required in order for road clearing to occur, and the clearing of the road for the purposes of uranium exploration does not make the development of a mine inevitable).

Secondly, the assessor has no ability to forecast the locations and types of future mining in the area, if it is to occur at all. The decision to develop any mine is based upon information gathered through exploration. In the absence of this information, it is impossible to accurately predict the locations of future mines, the type(s) of resource(s) that will be mined, how this will occur, and to what extent the development will take place.

The issue of whether mining should occur at all in a specific region is not an issue for an assessment to weigh; this is a land use planning and/or public policy issue best raised with government(s) and/or planning bodies.

2. All Season Access Development

Another concern that has been raised in relation to the proposed project involves the issue of the proposed winter trail becoming an all-season access road. As previously noted, the *Act* directs that the activities contained within a proposal be scoped into the assessment. The proponent has not proposed to upgrade the trail to all-season access and therefore will not be considered in this assessment.

Development of a new all-season access on First Nation or Crown land in the Yukon would be subject to an assessment under *YESAA*. It is at that time, that the issues and effects associated with such a project would be evaluated.

3. Induced Industrial Activities

The induced effects of a proposed project can be considered in an assessment. For example, if new linear corridors are developed, the implications with regards to hunting are

commonly considered. The rationale for the inclusion of these issues is that these effects are either considered to have a high likelihood of occurring, have commonly occurred along similar developments in the past, and the effects are, to some degree, predictable.

Induced effects consideration does not necessarily extend to industrial activities. While these activities may be facilitated by the proposed project, the locations, types, scales, timing, and logistics of these projects is unpredictable, and therefore cannot be considered in an assessment. This is particularly true for future mineral exploration projects, since the locations and details of these projects are based on considerations of underlying geology, economics, and predictions that the assessor has no knowledge of. If the specifics of future projects are known, and these projects are considered likely to proceed, they can be considered within the framework of a cumulative effects assessment. In this case, these details are not known and therefore potential future industrial activities are not considered in this assessment.

The types, amounts, and extents of potential future industrial activities, their possible effects, and the level to which these developments are socially-responsible or acceptable is not a consideration made in the jurisdiction of assessments under *YESAA*; this is an issue of land use planning and/or public policy.

Context for Land Use Planning

Comments were received concerning the assessment of this proposed project prior to the finalization of land use planning in the region. Concerns centered on the fact that without a land use plan in place, an assessment may recommend that a project proceed which may not comply with the ultimate recommendations for land use in the region. Some comments stated that the assessment of this project should be put on hold until land use planning is finalized.

The options available to Designated Offices at the conclusion of an evaluation are outlined in section 56 of *YESAA.* Sections 44 and 45 of *YESAA* recognize regional land use planning (as set-out under Chapter 13, Yukon First Nations Final Agreements), and its inherent links with project assessments. Section 45 provides direction to assessors in regions where there is an existing or pending land use plan (as is the case in the Peel Watershed). The provisions in the *Act* speak to the sharing of relevant information between land use plans, commissions, and assessments.

Valued Environmental and Socio-economic Components

The assessment of environmental and socio-economic effects, including cumulative effects is in accordance with section 42 of *YESAA.*

The mitigations identified herein are proposed to address project effects that the assessor believes to be potentially significant and adverse. They do not preclude the application of other mitigations as required by relevant legislation.

The following valued components have been considered in this evaluation of the proposed project:

1	Environmental Quality
2	Fish and Fish Habitat
3	Heritage and Historic Resources and Traditional Land Use
4	Trapping and Outfitting
5	Tourism
6	Wildlife and Wildlife Habitat

1. Environmental Quality

1.1. Temporal and spatial overlap summary

The principal project activity is the opening and using the existing Wind River winter trail and construction of an airstrip by widening and upgrading a portion of the trail. The proposal is to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River access using D-7 dozers. It is anticipated that the trail will be used between mid January and April for up to 5 years. The project area is within the Wind River watershed which is part of the Peel River Watershed. This area includes portions of the Taiga Plains, #51, 51 Peel River Plateau, the Taiga Cordillera #170, 170 Mackenzie Mountains, The Boreal Cordillera, #176, 176 Yukon Plateau-North eco-regions as stated in the project proposal. These eco-regions are in the discontinuous permafrost zone. Specific elements related to environmental quality that have the potential to be affected by project activities include soil, water, and vegetation. Project components which are likely to overlap with environmental quality include the clearing of vegetation, construction/widening of the Wind River trail at cache 3 for an airstrip, construction of ice bridges, mobilization of equipment and supplies, waste disposal, and decommissioning.

In the winter of 1959, a 380-mile trail was constructed through the wilderness leading north from the Keno Road along the Wind and Eagle Rivers to an exploration camp located 45 miles past the Arctic Circle, known as the Wind River trail. Eleven land use permits have been issued since 1979 that have allowed permit holders to utilize portions of the Wind River trail. The trail runs through the Wind River valley which is an area recognized for its high wilderness value. The area is remote and the valley bottom supports a diverse variety of wildlife species particularly in winter when the alpine mountain environment is too harsh.

The proposed access is within the Wind River watershed, which is highly valued by residents and tourists as a wilderness canoeing destination. The Wind River is one of the three rivers valued globally as a premier destination for canoeing, backcountry travel,

photography, education and scientific research (Three Rivers Book). A land use planning process is currently underway in the Peel Watershed area including the three rivers.

1.2. Effects characterization and significance determination

The First Nation of Nacho Nyak Dun (NND) has expressed concern regarding potential impacts on environmental quality relating to this project. NND are involved in the land use planning process for this area. The First Nation feels that environmental monitors should be present during the project to ensure the activities are conducted in a safe manner. In recognition of the intrinsic value of the area, the proponent has proposed some mitigations that exceed current regulatory requirements. The assessor also recognizes that best management practices are recommended in the land use planning process and should be considered for this project.

The effects characterization has been considered for each of the project components that may affect environmental quality.

Upgrading and Use of the Winter Trail

Upgrading the winter trail without sufficient snow cover and frozen conditions could increase the rate and risk of erosion and sedimentation in the area. Equipment used to move snow to fill holes or other features could damage the vegetative mat and disturb soils. Cutting of side slopes may also disturb and/or expose soils potentially resulting in erosion. Inappropriate selection or operation of equipment/vehicles used to upgrade the trail or mobilize supplies to the caches, particularly when used on ground with insufficient snow cover, can exacerbate damage to the vegetative and soil layers, causing rutting and erosion.

Erosion of soils and soil instability may have several potential effects on the surrounding environment. Soil mobilized on slopes may come out of suspension when it reaches low lying areas or intact vegetation. This may lead to increased sedimentation and deposit of soil overtop of vegetation. Sedimentation and soil deposition may reduce the viability of the soil structure to maintain a vegetative mat. Erosion may also lead to soil instability within the surrounding area. Prolonged erosion and soil instability may eventually lead to slope failure. Slope failure may reduce soil quality in the affected area causing further erosion and the introduction of sedimentation into waterbodies.

There is potential for encountering permafrost as the project area falls within the discontinuous permafrost belt. Discontinuous permafrost is relatively thin and as such is considered the most fragile and sensitive to disruption and thaw. Project activities that create a surface disturbance by removing the insulating organic layer of the soil may result in thawing of the active permafrost cover resulting in reduced soil stability. Potential adverse effects include ground slumping, erosion, sedimentation of nearby waterbodies, and a linear wetland feature with little chance of re-vegetation of native successional

species. These effects may not be observed until spring/summer when the snow melts and the ground thaws, and when runoff enters nearby waterbodies.

The proponent has indicated they will be travelling the entire route of the trail with blades up and will not be stripping any vegetation except at the proposed airstrip site at cache 3. While the project proposal states that up to two feet of snow will be left on the trail, it is important to note that up to 20 trips per year is being considered and numerous trips pulling sleighs particularly around sharp turns and steep slopes could result in soils being exposed. Movement over exposed soils is likely to damage the vegetative and/or underlying soil layers potentially leaving behind significant scars that become more pronounced after snow melt in summer months. Areas near a watercourse where the vegetation and organic layers are disturbed are susceptible to slumping and eroding into receiving water, due to a decrease in soil stability.

Considering that the proponent intends to use the trail for numerous trips over a five year period, there is potential for significant adverse effects to occur.

Transportation and Use of Fuel and other Deleterious Substances

Deleterious substances such as fuel, oil and lubricants used to operate equipment may contaminate soil, vegetation, and groundwater if not properly handled and disposed of. The project proposal indicates that 160,000 litres of Jet B fuel (equivalent to 800 drums) and 240,000 litres of diesel fuel (equivalent to 1,200 drums) in drums are to be transported along the trail to the cache sites. Fuel will be stored at four cache sites along the route and utilized for refueling and hauling to exploration camps in the vicinity.

There is potential for contamination of the environment as a result of project activities. The use of hydrocarbon products for the operation of equipment/vehicles could result in these products entering the environment by way of spills, leaks or malfunctions during re-fueling and normal use of equipment for the duration of the project. Use of the winter trail to transport fuel, and other supplies, has potential for accidents or malfunctions which could lead to contaminants spilling into surrounding land and water. In cases where ice formation and depth are not regularly monitored, there is a potential for equipment to fall into watercourses being crossed, thereby, contaminating water and affecting other valued components such as fish and wildlife. Hydrocarbon contamination may affect the long-term survival of organisms within the area and, in high enough concentrations, be lethal. Bioaccumulation of contaminants can result in effects that take a long time to be observed and affect organisms throughout the food web. Deleterious substances may reduce the overall natural function of the ecosystem.

Construction of an airstrip may result in increased air traffic in the area for the duration of the project or indefinitely if the strip were not reclaimed. An abandoned airstrip in a remote setting can become convenient location for fuel and other equipment to be stored or abandoned. Fuel storage at cache sites poses a risk to environmental quality as a result of

accidents and malfunctions leading to contamination. The drums and fuel could be abandoned at these sites, significantly affecting environmental quality through contaminated waste. The proponent may not successfully reclaim disturbed sites or remove fuel drums and equipment from cache sites associated with this project. Abandoned sites, drums and equipment would have a significant adverse effect on the environmental quality and wilderness setting.

Waste Management

Garbage and other materials generated from trail use may have a significant adverse effect on environmental quality through the introduction of foreign substances. Garbage, human waste, and other products can contaminate the environment as the materials break down and decompose or enter nearby waterbodies. In addition to creating an unattractive area, garbage and debris can create hazards to fish, small animals and birds that may get tangled and trapped in refuse. The proponent has indicated that "no camp will be constructed along the route, instead a mobile camp will be hauled behind one of the dozers and trapping cabins along the trail will be used with permission of the trapper when possible. The proponent has also indicated that waste generation along the trail is expected to be minimal. However, any amount of litter or debris left in this highly valued pristine wilderness environment would be considered a significant adverse effect to the environmental quality of the area.

It is the opinion of the assessor that the proposed project activities will potentially have significant adverse effects on environmental quality in relation to solid waste.

1.3 Mitigations

- The trail shall be used only under frozen ground conditions with a minimum maintained packed snow cover of 30 cm to the vegetation layer. Where required, an appropriate snow depth to avoid disturbing surface vegetation (i.e. tussock terrain) must be maintained. If a snowpack of 30 cm is not attainable in vegetated areas then low ground bearing equipment shall be used. *(The high volume of trips, up to 20 return trips per season, the potential for erosion identified through comment submissions and the proposed up to 60cm of snow on the trail combined with Best Management Practices(BMP) and past YESAB recommendations resulted in this mitigation.)*

- The proponent and/or field representative shall suspend overland travel of equipment of vehicles if rutting occurs.

- The proponent and/or field representative shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.

- The proponent and/or field representative shall convoy materials and supplies on the winter trail in as few movements as possible.

- The proponent and/or field representative shall ensure that the construction of water crossings are supervised and monitored by a qualified environmental professional to ensure the integrity of crossing structures.

- The proponent and/or field representative shall conduct field observations throughout the project to ensure that the route has sufficient snow depth.

- The first crossing of each waterbody by equipment with a load shall not be carrying fuel.

- At the end of each season of trail use, the major watercourse crossings shall be inspected by a qualified environmental professional to document any accidental damaged to the riparian habitat at those locations. Any observed damages shall be reported to the Department of Fisheries and Oceans Canada (DFO) and appropriate stabilization measures shall be taken to reclaim accidental damages and stabilize the site.

- The proponent and/or field representative shall employ sufficient numbers of Environmental Monitors to observe and ensure environmentally safe practices.

- A field reconnaissance must be conducted by the proponent and/or field representative prior to construction of the winter access and mobilization of associated equipment.

- The proponent shall provide a detailed description of the route to the First Nation of Nacho Nyak Dun prior to opening the route. *(As proposed by the proponent)*

- The location of any spill of petroleum shall be clearly marked with stakes or flags and the time, manner, location, amount and type of spill shall be reported forthwith in accordance with Part 11 of the *Environment Act*.

- The proponent and/or field representative shall at all times have on site and/or carry sufficient oil spill clean-up equipment and material in readiness to immediately clean-up all petroleum which may be spilled.

- The proponent and/or field representative shall ensure that the Spill Response Plan include the provision of sufficient spill clean-up equipment and material which must be in an appropriate state of readiness at all times in order to immediately clean-up all spills that may occur along the trail during the project life.

- The location of any spill of petroleum shall be clearly marked with stakes or flags and the time, manner, location, amount and type of spill shall be reported forthwith in accordance with Part 11 of the *Environment Act*.

- The proponent and/or field representative shall provide a security deposit in the amount determined by the regulator to be held under the *Territorial Lands (Yukon) Act*, prior to commencement of the proposed project activities. *(To ensure final reclamation and clean up of materials related to project activities as seen in other winter road/trail projects evaluated under YESAA).*

- All solid waste and garbage will be hauled out and brought to land-fill facilities in Mayo.

It is the opinion of the assessor that the identified mitigations will successfully control, reduce or eliminate significant adverse effects of the proposed project in relation to environmental quality.

2. Fish and Fish Habitat

2.1. Temporal and spatial overlap

The principal project activity is the opening and using the existing Wind River winter trail and construction of an airstrip by widening and upgrading a portion of the trail. The proposal is to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River access using D-7 dozers. The activities are proposed to take place between January and April over the next 5 years. Winter travel on the route will require numerous stream and river crossings, some requiring the construction of ice bridges. The proposed project is located in an area that has fish bearing waters. Lake trout, arctic grayling, round whitefish, dolly varden, char and slimy sculpin are the species identified in the Wind River drainage (CPAWS Peel Watershed atlas May 2004). Water bodies in the area include but are not limited to Christal Creek, Hanson Lakes, Cache Creek, McQuesten Lake, Rambler Creek, Scougale Creek, Clark Lakes, Scougale Lakes, Beaver River, Braine Creek, McClusky Lake, Nash Creek, Wind River, Bond Creek, Bear River and a number of unnamed tributaries.

2.2. Effects characterization and significance determination

Project activities that have the potential to affect fish and fish habitat include the construction of ice bridges, stream crossings, mobilization of equipment and supplies, and waste disposal. Inadequately constructed snow fill crossings may result in the deposition of soil and debris into water. Ice crossings if not restored properly, may lead to barriers in water flow during spring freshet which can result in flooding, bank slumping and erosion.

The Wind River and Nash Creek have been identified as important winter fish habitat.

Sedimentation of Nearby Water bodies

A poorly prepared winter trail may cause surface disturbance which increases the potential for erosion and sediment laden runoff. Increased sedimentation may alter the water chemistry of the waterbody, affect the productivity of fish habitat, affect the development of fish eggs, and create a physical barrier that removes spawning or rearing habitat availability.

Improperly constructed ice bridge/snow fill crossings may result in the deposition of soil, debris, fuel, and other contaminants into water, thereby affecting water quality and potentially harming fish. Improper snow/ice crossing construction can restrict channel flow and impede fish movement. Loss of riparian vegetation or damage to stream banks may result in erosion, bank slumping, and sedimentation of waterbodies. Ice crossings not decommissioned properly could create barriers to water flow during spring freshet which can result in flooding, bank slumping and erosion. In addition to altering the chemistry of the waterbody, an increase in sediment load may increase the total suspended solids in the water which can lead to the abrasion or clogging of gills causing fish to suffocate or have difficulties absorbing oxygen. Changes to fish and fish habitat as a result of increased sediment loads or unnatural turbidity levels may, over time, affect water quantity and flow to the point where food organisms and plant growth are diminished, habitat is rendered unsuitable for the existence of fish and fish reproduction, and fish migration patterns are altered. The potential effects to fish and fish habitat associated with the sedimentation of nearby waterbodies are considered significant and adverse.

Deposition of Contaminants and Wastes

Deleterious substances associated with the proposed project include, but are not limited to, petroleum hydrocarbon products such as fuel, hydraulic fluids, coolants, lubricants, solvents, etc. The project proposal indicates that Jet B fuel and diesel will be transported in drums along the trail to the proposed 4 sites for fuel caches. The proponent has stated fuel caches will have appropriate secondary containment in accordance with the Canadian Council for Ministers of the Environment (CCME) guidelines and all fuel containers will be inspected for leaks prior to transport and inspected regularly on route to their destination.

There is a potential for snow fill crossings to fail during use of the trail. Loaded equipment carrying fuel falling through ice may result in the deposition of fuel, oil, and/or lubricants into the water which may significantly affect water quality, fish and fish habitat. Additionally, there may be leaks or spillage of petroleum products form the use of heavy equipment and vehicles, or during transport of fuel along the trail, or from storing fuel at the cache sites. If not immediately cleaned up, such leaks or spillage on the ice or adjacent areas can be absorbed by the snow, and in the spring upon snow melt, these fuels or other deleterious substances may enter and contaminate receiving watercourses where fish and/or aquatic life may be directly affected. Contamination of fish habitat can result in death or

affect the long-term survival or reproductive success of fish. The potential effects to fish and fish habitat associated with the deposition of contaminants and waste are considered significant and adverse.

Water Withdrawal

Water from the associated waterbodies will be used to construct the ice bridges, and snow will be cleared from these crossings using a bulldozer. The physical act of removing water from a waterbody has potential to cause injury or death to fish. Death or injury to fish may occur as a result of entrainment, when fish are drawn into a water intake and cannot escape, or from impingement, when an entrapped fish is held in contact with the intake screen and cannot free itself. A reduction of suitable habitat through a decrease in water volume and/or changes in stream flow could affect spawning, over-wintering and feeding areas available to fish species, and in extreme cases, result in direct fish mortality (fish stranding). The proponent has indicated that screens consistent with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* will be used on the water intake hose when pumping water from the waterbodies and that all ice bridges will be constructed in accordance with DFO's Pacific Region Operational Statement regarding "Ice and Snow Fill Bridges" and the *Waters Act*.

Improved Access

The re-opening and frequent use of the winter trail may also result in easier access to fish bearing and/or fish spawning sites by humans. Improved access could also mean reckless use of the area with ATVs and snowmobiles which could lead to sedimentation, water contamination and damages to stream beds. Improved access could result in increased fishing pressure in the watershed and potentially significantly affect fish populations. However, the route is on an existing trail currently used for recreational snowmobiling. No new or additional access or clearing of existing access is proposed with the exception of an airstrip. Due to the cost of flights it is unlikely that people would fly to the strip to fish and therefore it is unlikely that the project will have an adverse effect on fish populations as a result of improved access.

It is the determination of the assessment that the project could result in significant adverse effects on fish and fish habitat.

2.3. Mitigations

- Prior to start-up, the proponent shall conduct a reconnaissance to identify suitable watercourse crossings and problematic areas along the trail including glaciation from seeps and other unanticipated constraints.

- The proponent and/or field representative shall ensure that the construction of water crossings are supervised and monitored by a qualified environmental professional.

- The proponent and/or field representative shall not use any material but clean snow or water in the construction of ice bridges and approaches.

- The proponent and/or field representative shall not allow the deposit of any unauthorized soils or debris in any watercourse, or in any location where these materials could be deposited into any watercourse.

- The proponent and/or field representative shall not deposit or allow the deposit of any deleterious substances (including but not limited to fuels, lubricants, hydraulics and coolants) of any type into any waters, or in any place under any conditions where the deleterious substances may enter any waters.

- Disturbance to stream and river banks at the crossings shall be avoided. The proponent shall make all efforts to maintain vegetation at the proposed water crossings.

- Fuel stored or cached along the proposed route must be located at least 60 m from any wetland, stream or waterbody.

- The proponent and/or field representative shall not allow any ice bridge to hinder the flow of water in any stream.

- All drainages, low-lying areas and wetlands must be frozen to a state capable of supporting 125% of the estimated total weight of the loaded equipment before commencement of project activities.

- The proponent and/or field representative shall ensure that all natural or constructed ice crossings are and remain capable of supporting the vehicles taken across them, by monitoring and testing of ice thickness and condition during the period of use.

- The proponent and/or field representative shall design, construct, maintain and decommission all temporary and permanent structures placed in streams which may be frequented by fish in such a manner that the up or downstream passage of fish is not obstructed.

- If equipment falls through the ice, the proponent and/or field representative shall the immediately advise Fisheries and Oceans Canada in Whitehorse. Telephone number is (867) 393-6721, or Fax (867) 393-6738. The land use inspector and the First Nation of Nacho Nyak Dun shall also be contacted.

- The proponent and/or field representative shall conduct all activities associated with the construction of water crossings in accordance with the Department of Fisheries and Oceans' Operational Statement, "Ice and Snow Fill Bridges". *(Attached)*

3. Heritage and Historic Resources and Land use

3.1. Temporal and spatial overlap summary

The principal project activity is the opening and using the existing Wind River winter trail and construction of an airstrip by widening and upgrading a portion of the trail. The proposal is to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River access using D-7 dozers. The activities are proposed to take place between January and April over the next 5 years.

The Yukon Government, Department of Tourism – Heritage Resources, has indicated that there are no archaeological or historic resources documented in the project area. The proposed project is located within the First Nation of Nacho Nyak Dun (NND) traditional territory. NND Council has indicated a high level of historical use of the Wind River trail and surrounding area. Evidence of traditional camps and trails has been documented and is further supported by the adjacent settlement land parcels.

Settlement Lands

The Wind River trail is identified as the boundary for portions of four NND settlement lands. NND R-11A, located near Nash Creek, NND R-17A, bordered by the Beaver River and Braine Creek, NND R-4A and NND R5-A are the first two settlement blocks on the trail and are around the Davidson and Patterson Ranges. NND R-9B is close to the trail near the trail head at the north end of McQuesten Lake. NND selected the above lands to protect and preserve areas of cultural, historic and subsistence harvest use.

NND has cultural ties to the Wind River watershed that date back to oral history. The Wind River trail is identified as part of the original trade route to MacPherson. During some years snowmobile trips are made to MacPherson as a cultural experience for youth. Use of the Wind River trail has a direct spatial overlap with historical use of the area by NND.

3.2. Effects characterization and significance determination

Effects to the Land

Effects caused to the land as a result of project activities could be in the form of soil instability, erosion, damage to wildlife and fish habitat, displacement/avoidance of wildlife from the area, and removal of the plants traditionally harvested by NND members. Use of heavy equipment for travel on the trail may cause it to be impassable affecting the ability of First Nation members to participate in the pursuit of traditional lifestyles and cultural activities.

Effects caused to the land as a result of project activities are considered in the valued components “environmental quality”, “wildlife and wildlife habitat”, “trapping and

outfitting", and "fish and fish habitat". It is the opinion of the assessor that the mitigations identified in the terms of the valued components will effectively reduce, eliminate, or control potential significant adverse effects to the land which may affect the pursuit of traditional lifestyles.

Effects to Heritage and Historic Resources

Yukon Government, Department of Tourism - Heritage Resources has indicated that there are no documented archaeological or historic resources identified within the proposed project footprint. However, there still remains a potential for historic sites and resources to be uncovered or disturbed during clearing and construction. The value of historic resources rests within their context upon the land in which they are located, in essence, when they are *in situ*. Once disturbed or removed the value can not be restored. Humans have been present in the proposed project area for a relatively short period of time (hundreds to thousands of years). Therefore, historic resources are essentially on or near the surface of the ground. The proposed project could result in historic resources being discovered and/or disturbed, during the construction of the airstrip.

The assessor has considered the requirements of:

1. the *Historic Resources Act*, specifically sections 64, Destruction of historic objects or human remains and 71, Report of findings;

2. the Archaeological Sites Regulation (O.I.C. 2003-73) specifically section 4, respecting historic resources, and;

3. Chapter 13 – Heritage, of the First Nation of Nacho Nyak Dun Final Agreement,

and is satisfied that compliance with the *Act*, Regulation, and Final Agreements will adequately eliminate, reduce or control the potential effects of the proposed project on historic resources so that they are not significant adverse effects.

3.3. Mitigations

n/a

4. Trapping and Outfitting

4.1. Temporal and spatial overlap summary

Big Game Outfitting

The principal project activity is the opening and using the existing Wind River winter trail and construction of an airstrip by widening and upgrading a portion of the trail. The proposal is to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River access using D-7 dozers. The activities are proposed to take place between January and April over the next 5 years. The proposed project overlaps with three registered outfitting concessions: Midnight Sun Outfitting Ltd., Bonnet Plume Outfitters Ltd. and Rouge River Outfitters Ltd. The big game hunting season in the Yukon runs from April 15th to June 21st for spring bear, August 1st to November 15th for fall bear, August 1st to March 31st for wolf and coyote, and August 1st to October 31st for other species. Each outfitting company has the exclusive right to guide non-resident hunters within their designated concession. Wilderness experience based on the remote location that is accessible only by air or horse is what makes this area unique. Yukoners have guided non-resident hunters in the territory since 1912 (Yukon Outfitters Association website). One of the well-known outfitters of the early years was Louis Brown, who guided extensively through the Peel watershed (Brown 1971). Local knowledge and comment submissions state that use of the Wind River Trail to access outfitting areas on horse dates back to the 1960's. The regular outfitting seasons for big game including spring bear does not overlap temporally with the proposed active hauling along the winter trail. Project activities that will overlap temporally with the outfitting season include use of the airstrip and cache sites.

Trapping

The proposed route overlaps six registered trapline concessions #43, 44, 42, 41, 40 and 9. Four of those lines are currently active and two are reserved for NND. The trapping season typically runs from October 1st to May 31st. The Wind River trail is used for access and active trapping. There is a direct overlap between the project and the trapping season.

4.2. Effects characterization and significance determination

Big Game Outfitting

Comments received during the assessment identified concerns that project activities may cause wildlife to utilize different travel routes due to avoidance of human activity. Creating a packed trail will reduce travel effort for some wildlife and may result in increased predator success. Increased predator success may result in reduced populations of species such as caribou, moose and sheep, negatively impacting outfitter success. Potential effects of the project regarding wildlife are considered in the valued component "wildlife and wildlife habitat".

Concerns were identified regarding the potential for fuel spills to cause water and environmental quality to deteriorate reducing the wilderness experience for clients of outfitters. Wilderness environment was identified as an integral part of the guided outfitting experience and affects.

The consideration of the effects to fish and wildlife and the environment are considered in the valued components “wildlife and wildlife habitat”, “fish and fish habitat” and “environmental quality”. The consideration of effects to wilderness experience is considered in the valued component “tourism”. The assessor recognizes the value of the area as it relates to the contemporary and historical use of the area for outfitting. It is the opinion of the assessor that the mitigations identified in the terms of the valued components will effectively reduce, eliminate, or control potential significant adverse effects to the land which may affect outfitting activities.

Trapping

Trapping within the Yukon provides is a valued lifestyle and source of revenue to many people. Project activities such as winter trail preparation, mobilization of supplies and materials, and frequent use of the trails by others, may disturb or damage traps, snares and other trapping equipment used by the trappers, which may in turn affect their ability to harvest fur bearing animals.

Trapline activities may be directly affected as a result of project activities. Potential effects may include destruction/damage to traps and trapping infrastructure, trapping infrastructure being buried underneath snow banks if the road is ploughed, and damage to snowmobile and other access trails along the Wind River trail. Failure to maintain the trail during the proposed active hauling season could impact accessibility to traplines. Degradation of the trail by the cat train may make it difficult to travel the trail with snowmachines, which is the primary transportation method of trappers. If access is difficult, this may result in the loss of or reduced numbers of harvested animals, and a potential loss of income for the trappers. While no plowing of the trail will be done and the company has proposed to leave two feet of snow where possible, the project could result in significant adverse effects on trapping.

4.3. Mitigations

- The proponent and/or field representative shall contact each active trapper in the vicinity of the project area 10 days prior to initiating the program by mail or through personal communications.

- The proponent and/or field representative shall avoid covering or destroying traps or snares.

- The proponent and/or field representative shall maintain the trail in a manner that leaves it passable by snowmobile at all times.

5. Tourism

5.1. Temporal and spatial overlap

The principal project activity is the opening and using the existing Wind River winter trail and construction of an airstrip by widening and upgrading a portion of the trail. The proposal is to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River access using D-7 dozers. The activities are proposed to take place between January and April over the next 5 years. The proposed route was established in 1959 along the Wind and Eagle Rivers. The Wind River watershed is 9,597 km² in size, or 2 percent of the Yukon. To put wilderness values in context, approximately 22% of the world's remaining wilderness lies in Canada. Within Yukon, 77% of the territory endures as wilderness (SoE 1999).

The proposed route follows the Wind River valley and in places intercepts the Wind River which has high wilderness tourism values and use particularly in the summer season by river travelers. However, comment submissions indicate that some winter tourism occurs along the route as well. Residents in the area use the trail in winter for snowmobile trips. The trail is used in summer and fall for travel on horseback.

The Wind River has a number of unique and appealing characteristics for wilderness recreational use. The river is relatively accessible for a fly-in trip at 130 km air kms from Mayo to the traditional McClusky Lake put-in. The Wind River watershed is relatively pristine and exhibits many wilderness attributes including excellent off river hiking opportunities and amazing wildlife viewing opportunities. The river is unique in that it is a challenging but navigable waterway for groups with moderate canoeing experience. The Wind River has superior water quality with clear blue-green waters along its 200 kms course from the put-in at McClusky Lake to the confluence with the Peel River.

5.2. Effects characterization and significance determination

Wilderness Travel and Experience

The Wind River has been a wilderness canoeing destination for several decades, and commercial operators have guided trips on the river for over twenty years. Today, a 12-14 day trips costs approximately $5,000 per person, and typically includes a variety of wilderness activities including hiking, wildlife viewing, fishing, photography and nature study. Most operators who offer guided trips on other Yukon rivers consider the Wind River as one of their 'top of the line' tours.

Wilderness features include exceptional mountain and tundra scenery, varied and interesting landforms and particularly clear water in the mountain reaches. Wildlife values are high throughout the corridor, with caribou, thinhorn sheep, moose, grizzly bears, and wolves all found in the valley.

The Wind River has a strong presence of human history which adds significantly to interpretive opportunities on river trips. First Nations history is extensive and the corridor was a historic patrol route of the North West Mounted Police, including the Lost Patrol.

Wilderness tourism operators build and market their products around features such as the river corridor, wildlife and hiking opportunities, but it is the remoteness and exceptional quality of the wild and undeveloped landscapes that make Wind River trips especially attractive. Travelers come to the watershed seeking a high-quality wilderness experience, and Wind River trips consistently meet or exceed their expectations.

Over the past several years, the Wind River has seen significant growth of self-guided visitors and increased use by commercial operators. In 2006, 6 operators guided 30 clients for a total of 257 user-days, and six rental operators provided canoes to 73 clients who spent 828 user days on the Wind River. Nearly all guided and rental clients were tourists. In addition, local and Whitehorse-based businesses provided ground and air transport, supplies and accommodation to guided and self-guided river travelers.

In recent years local Yukon recreational users have recognized the high quality off-river environment of the Wind River watershed and chosen to travel there for overland backpacking trips. There is potential for increased commercially guided trips and for multi-day dog mushing and hiking tours.

Project activities such as winter trail preparation, use of proposed airstrip and caches and water crossings may have significant adverse effects on wilderness experience. The consideration of effects related to winter trail preparation and water crossings are considered in the valued components “environmental quality”, “wildlife and wildlife habitat”, and “fish and fish habitat”. It is the opinion of the assessor that project activities associates with use of the airstrip and caches could result in significant adverse effects on tourism.

Visual Esthetics

Travel over vegetation with insufficient snow cover can lead to removal or disturbance of the vegetative mat resulting in slumping and erosion resulting in a visually displeasing scar. Placement of fuel caches within view of the river would adversely affect the pristine untouched wilderness experience anticipated by travelers. Construction of the approximately 23 m wide by 1050 m long airstrip in view of the river would be visually displeasing for river travelers that are looking for an untouched wilderness experience. The proponent describes the location of the proposed airstrip as being set back approximately 55 m from the high water mark at a location where the river bank is 10 m above the river. The proposed strip will not be visible from the river.

The proposed airstrip requires clearing of vegetation, removal and placement of soils. The use of heavy machinery may increase the risk of erosion and sedimentation in the area. Sediment allowed to enter streams causes the water to become turbid and dirty looking.

When sediment loaded water from streams enters the main river which is clear, it has a significant visual impact on that area of the river.

Use of the airstrip by fixed wing and rotary traffic may cause significant visual and auditory disturbance to travelers expecting a wilderness experience. Building the airstrip may result in increased air traffic in the area due to accessibility and opportunity. Low flying aircraft would have a significant adverse effect on the wilderness experience of travelers due to both visual and auditory disturbance. Local knowledge and the proponent indicate air traffic currently lands on gravel bars along the river. One gravel bar identified as a landing site is almost adjacent the proposed location of the new strip directly beside the river. Air traffic over the river would be highly disruptive to river travelers and potentially cause a safety risk. It is likely that current air traffic would choose to use a strip over a gravel bar, thus reducing the likelihood and extent of disturbance. Air traffic on the proposed strip would be 10 meters above the river with a 55 meter buffer and not be visible from the river and therefore reduce the magnitude of the disturbance. The proponent states that having the airstrip and caches will reduce the amount of air traffic use associated with this project by 40%, ultimately reducing the potential effects of the project associated with air traffic.

Hiking has been identified as a valued part of the Wind River travel experience. Hiking hotspots are outlined in the Peel Watershed atlas produced by Canadian Parks and Wilderness Society (CPAWS) May 2004. Use of heavy equipment over vegetation that does not have sufficient cover could lead to rutting and erosion that would leave a significant scar on the land and detract from the wilderness hiking experience. Construction of and placement of the airstrip could have a significant effect on the wilderness hiking experience if the placement was within a hiking hotspot. Placement of the caches within highly utilized hiking areas could significantly reduce the wilderness experience for hikers in the area. A review of the CPAWS Peel River atlas and the project proposal indicates there is no overlap between caches or the airstrip with the identified hiking hotspots. However, the project could result in significant adverse effects on hiking outside of the areas identified as hiking hotspots.

Horseback Wilderness Travel

Based on comments submitted by residents, the trail has been utilized by people on horseback as early as 1969 until present day. Outfitters have and continue to use portions of the Wind River trail route to trail horses into their base camps according to comment submission and local knowledge. Local people are known to utilize the route for summer travel on horseback. To date the trail has been utilized as a winter trail for heavy equipment, in fact that is how it was developed. Horseback trips occur in the summer season and will not overlap with the use of the trail for the purposes of this project. It is not anticipated that this project will have a significant adverse effect on horseback use of the trail.

5.3. Mitigations

- A field reconnaissance must be conducted by the proponent and/or a field representative prior to the construction of the winter access and to mobilization of associated equipment.

- The proponent and/or field representative shall ensure that all cache sites are located at a minimum 60 meters from the high water mark and all material is covered in a green tarp.

- The proponent and/or field representative shall make the locations of all caches available to wilderness tourism operators and travelers through the regulator. *(Provides opportunity for wilderness tourism operators and travelers to avoid these sites.)*

- The proponent and/or field representative shall ensure that the construction of the airstrip is done in such a manner as to prevent erosion and sediment discharge into surrounding waters.

- The proponent and/or field representative shall construct the airstrip with the minimal amount of clearing possible and in a location that is elevated and set back from the river and not visible from the river.

- The proponent and/or field representative shall make every effort to ensure that air traffic associated with the project do not fly directly above the river but rather gain elevation and fly across the river course when practicable. *(As discussed with proponent at November 14, 2007 meeting).*

6. Wildlife and Wildlife Habitat

6.1. Temporal and spatial overlap summary

The principal activity associated with this project is the opening and use of an existing winter trail and construction of a new airstrip. The proposal is to use D-7 bulldozers to haul up to 20 loads per year of fuel and supplies to four caches along 178 km of the Wind River trail and the Bear River. The project area is within the Wind River watershed, which is part of the Peel River Watershed. The area also falls within portions of the Taiga Plains, #51, 51 Peel River Plateau, the Taiga Cordillera #170, 170 Mackenzie Mountains, The Boreal Cordillera, #176, 176 Yukon Plateau-North eco-regions as stated in the project proposal.

A variety of mammal and bird species occupy the project area on a seasonal or annual basis. Wildlife includes species such as ungulates (caribou, moose, and sheep), grizzly and black bears, wolves, coyotes, hares, lynx, fox, and other fur-bearers. Bird species may

include ptarmigan, grouse, raptors, and various migratory waterfowl. The proposed project directly overlaps with key wildlife areas for several species.

Based on surveys conducted in spring 2007 and interviews with various users in the region, the Yukon Government Department of Environment has identified key areas for the Bonnet Plume caribou herd within the proposed project area. Key area polygons for winter range and fall rut overlap the proposed project. The Bonnet Plume caribou herd has been identified as the northernmost herd of the Northern Mountain Caribou Population and, under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), has a status designation of 'Special Concern'.

The Department of Environment has also identified key moose winter range and mineral lick locations along the proposed winter trail and in the general proposed project area. Other key wildlife areas within the proposed project area include golden eagle spring/summer nesting.

6.2. Effects characterization and significance determination

Habitat Loss and Fragmentation

The proposed project requires the maintenance and upgrade of the existing Wind River trail and approximately 23 km of an existing spur route along the Bear River. The right-of-way will be widened to approximately 5 m in width. The four caches will be located in areas that require minimal clearing. The airstrip will be located at the cache 3 location and will require the widening of a portion of the Wind River trail to approximately 23 m and the stripping of the vegetative mat and topsoil.

The proposed project is located within key habitat areas for various wildlife species including woodland caribou winter range, moose winter range, and golden eagle spring/summer nesting. Cache 3 and the fixed wing airstrip are located within a known migration corridor for the Bonnet Plume Caribou herd. The clearing of vegetation will remove and fragment wildlife habitat for certain species. There is also the potential for certain wildlife species to avoid areas of human disturbance greater than the immediate project footprint. Habitat fragmentation can result in a loss of functional range and discourage habitat use for various life stages. Habitat loss and fragmentation may reduce the long-term viability of various wildlife populations.

The clearing of vegetation to widen the existing Wind River trail may result in the loss of key eagle spring/summer nesting habitat. Nests are usually located in large trees along lakes or rivers and area used year after year. The loss of existing nests may force eagles to create new nests in less suitable areas. This may reduce the success of breeding eagles.

Research indicates that linear developments are used by animals as travel corridors due to their ease of travel and known to increase predatory pressure on ungulate species by

wolves. Cleared areas for the winter roads may redistribute snow and create berms along the route that may hinder ungulates from escaping predators.

The trail is currently used throughout the year by various users. It is likely that the magnitude of potential effects due to habitat loss, habitat fragmentation, and the use of linear developments will be relatively low considering the current use of the existing Wind River trail. However, due to the nature of the surrounding area and the key wildlife habitat, it is the determination of the assessor that the proposed project may result in significant adverse effects to wildlife and wildlife habitat due to habitat loss and fragmentation.

Increased Access and Presence

The upgrading and maintenance of the Wind River trail and approximately 39 km of existing spur route may increase the ease of access into the proposed project area. Activities associated with the proposed project such as the widening of the existing Wind River trail to 5m in width, may increase the ease of access to a large and fairly remote area to hunting. The Wind River trail will remain relatively inaccessible during the summer and fall months due to natural wetland and riparian areas. As trails provide easier access to wilderness and forested areas, people are more inclined to explore using off-road vehicles such as ATVs and snow machines. Easier access to an area tends to increase hunting pressure which can result in a decrease in population stock. An increase in hunting pressure may cause individual disruption and lead to elevated stress, increased energy expenditures, and injury or mortality to species. These effects may be magnified with increasing traffic levels along the trail.

Caribou on the wintering ground are more vulnerable to predation (both human and non-human) as they are grouped into larger aggregations within smaller regions. Caribou are sensitive animals that can be disturbed by continuous human activity. Frequent disturbance from people and their machines can affect the health of caribou during key life stages such as calving time. Caribou may reduce the use of their functional range when it overlaps with human activity, as compared to moose. Moose have a higher tendency to favor human activity as it may decrease the chances of predation as well as provide suitable browsing grounds. Moose are affected during late pregnancy and calving time when disturbance can cause stress and exertion which may deplete critical energy reserves.

Caribou distribution is restricted in seasons with deep snow fall and the Bear River-Wind River confluence is especially identified as having favorable snow conditions leading to concentrated winter use especially in deep snow years. Caribou distribution is determined by snow conditions throughout their winter range, not just along the Wind River. Cratering by caribou starts getting limited by snow conditions somewhere between 50 and 80 cm of snow depth. Numerous trips with heavy equipment through an area of high concentration would cause caribou to vacate the area in search of alternative suitable areas. Alienation of caribou from limited suitable winter habitats is considered significant and adverse.

Thinhorn sheep are known to be extremely sensitive to disturbance, and when disturbed during periods of foraging or resting may become stressed, which could lead to the exertion of critical energy resources. Generally, sheep wintering habitat is on wind-swept slopes out of the valley bottoms.

Sensory disturbances associated with the upgrade and use of the trail may cause wildlife to avoid any critical habitat that may be present within the project area. Avoidance of functional range can affect these animals during key life cycle stages, restrict access to habitat where the animals may find refuge from predators, and increase their vulnerability to hunting pressure. The frequency of disturbance within the area is expected to be intense during construction of the trail, mobilization of equipment and supplies, and from use of the trail by other persons.

The proposed four caches and the airstrip will be accessed in the summer months by aircraft. Air access via helicopter and fixed wing aircraft may disturb wildlife as a result of increased sensory disturbance leading to avoidance of the surrounding areas.

Residents in the area use the trail in winter for snowmobile trips. The trail is used in summer and fall for travel on horseback. Local knowledge indicates that ATV use of the existing trail in summer is unlikely. The proponent has indicated that up to two feet of snow will be left on the trail to discourage use by passenger vehicles.

It is the determination of the assessor that the proposed project may result in significant adverse effects to wildlife and wildlife habitat due to increased access and presence.

6.3. Mitigations

- The proponent and/or field representative shall take every precaution to ensure that wildlife habitat is not damaged.
- Encounters with wildlife shall be reported to the Conservation Officer in Mayo.
- The proponent and/or field representative shall not disturb, harass, feed, hunt or trap wildlife.
- The proponent and/or field representative shall give caribou encountered along the access route the right-of-way and leave them undisturbed with exception of emergency travel.
- The proponent and/or field representative shall not travel on the proposed spur route along the Bear River in years when the Bonnet Plume Caribou herd are congregated at the confluence of the Bear and Wind Rivers or in the Bear River drainage. Authorization to utilize the Bear River spur route shall be determined annually by the regulator.

- The proponent and/or field representative shall provide a copy of all documentation produced by Environmental Monitors to the Land Use Inspector in Mayo, Conservation Officer in Mayo and NND.

- The proponent and/or field representative shall employ sufficient numbers of Environmental Monitors to observe wildlife and wildlife habitat (meaning birds/other wildlife and their habitat) in the project area and surroundings. Tasks include but are not limited to the following:

    a) Conduct reconnaissance of project prior to start up to identify:
        i) Sensitive habitats;
        ii) General wildlife presents in the area;
        iii) Relative densities and distribution of wildlife in the area with specific emphasis on raptors and caribou;
        iv) Where observed, locations of raptors nests, possible dens, lodges and burrows;
        v) Any field issues that in combination with project activities may pose undue risk to wildlife during and after the project.

    b) Continue field observations by air and on ground throughout project duration to maintain current information on noted subjects.

    c) Promote and monitor compliance of mitigative measures associated with wildlife and wildlife habitat.

Cumulative Effects

YESAA instructs assessors make recommendations to decision bodies based on the determination of significant adverse environmental or socio-economic effects of a proposed project (YESAA s56). Recommendations relate to identified significant adverse effects of the project on environmental and socio-economic values of the area. When considering cumulative effects, YESAA instructs assessors to include existing and proposed activities known to them (YESAA s42(1)(d)). Only those known potential future developments may be considered within the context of the assessment of cumulative effects.

Based on the proposed winter use of the existing Wind River trail and Bear River access route, construction and use of an airstrip and four caches for five years, the assessor will be considering cumulative effects on the following valued components: environmental quality, fish and fish habitat, heritage and historic resources and traditional land use, trapping and outfitting, tourism and wildlife and wildlife habitat. The extent of the spatial scope consists of the Wind River trail, Wind River watershed, the Wernecke Mountains on either side of the river and all water bodies and mountain ranges adjacent to the Wind River trail.

The assessor is aware of six active quartz exploration projects (2005-0001, 2006-0064, 2007-0011, 2007-0067, 2007-0087 and 2007-0184 associated with 2005-0001), 2 winter access proposals on the Wind River trail (2005-0001 and 2006-0018), and one airstrip upgrade in the Patterson Range (2006-0120) that were previously assessed by this office and one additional quartz exploration project. At this time the assessor is not aware of any proposed activities that will be taken into consideration in the cumulative effects assessment. When considering cumulative effects the assessor takes into account the residual effects (project effects after mitigation) of this project in combination with the residual effects of other known projects or activities.

Environmental Quality

The active exploration projects identified above are air supported drill programs consisting of numerous drill pads approximately seven feet square, airstrips where water access is not available for staff and tent camps which usually include core sample boxes and storage. For all intents and purposes the impact of air supported drill programs is minimal. The area has undergone exploration and air supported drill programs since 1930 according to records at the Mayo Mining Recorder's office and is still considered primarily untouched and pristine by those who travel it.

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to environmental quality, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Fish and Fish Habitat

Residual effects associated with the two previously assessed winter access proposals directly overlap spatially with the proposed project. The quartz exploration projects and airstrip upgrade are far enough away that it is unlikely they will have any interaction.

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to fish and fish habitat, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Heritage and Historic Resources and Land use

Residual effects associated with the quartz exploration projects, the airstrip upgrade and the two previously assessed winter access proposals directly overlap spatially with heritage and historic resources and land use. However, the mitigations associated with these projects in combination with applicable laws and regulations reduce, eliminate or control potential effects to heritage and historic resources and land use.

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to heritage and historic resources and land use, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Trapping and Outfitting

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to trapping and outfitting, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Tourism

Residual effects associated with the quartz exploration projects, particularly air traffic is anticipated to decrease as a result of the proposed project. Land based traffic including the two previously assessed winter access proposals do not overlap temporally with tourism. Mitigations associated with the winter access reduce, eliminate or control potential effects to tourism.

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to tourism, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Wildlife and Wildlife Habitat

Increased predatory pressure on ungulates may occur as a result of winter trail use and increased hunting pressure as a result of improved access. Existing use of the access route by snowmobiles for recreation and trapping occurs throughout the winter providing packed trails. In consideration of existing use, activities associated with use of the trial as proposed are not anticipated to have a significant effect on current conditions related to increased predatory pressure.

With the application of the mitigative measures proposed, the assessor concludes that no significant adverse effects are anticipated to occur with respect to wildlife and wildlife habitat, as a consequence of the effects of this project in combination with the effects of other known projects or activities.

Conclusion

Approximately two hundred kilometers of existing winter trail is the current footprint on and the land. As a result of this project the increased project footprint on the land will be an additional four cache sites and an airstrip.

Cumulative effects have been considered for the valued components: environmental quality, fish and fish habitat, heritage and historic resources and traditional land use, trapping and outfitting, tourism and wildlife and wildlife habitat. The assessor has determined that no significant adverse cumulative environmental or socio-economic effects are likely to occur as a result of this project in combination with the effects of other known projects or activities.

9) Designated Office Recommendation

The Mayo Designated Office, in concluding its evaluation of Project #2007-0205, pursuant to Section 56(1) of the Yukon Environmental and Socio-economic Assessment Act:		
☐	**S56 (1)(a)**	recommends to the decision body(ies) that the project be allowed to proceed, as the Designated Office has determined that the project will not have significant adverse environmental or socio-economic effects in or outside Yukon;
☒	**S56 (1)(b)**	recommends to the decision body(ies) that the project be allowed to proceed, subject to specified terms and conditions, as the Designated Office has determined that the project will have significant adverse environmental or socio-economic effects in or outside Yukon that can be mitigated by those terms and conditions;
☐	**S56 (1)(c)**	recommends to the decision body(ies) that the project not be allowed to proceed, as the Designated Office has determined that the project will have significant adverse environmental or socio-economic effects in or outside Yukon that cannot be mitigated; or
☐	**S56 (1)(d)**	refers the project to the Executive Committee for a screening, as the Designated Office cannot determine whether the project will have significant adverse environmental or socio-economic effects after taking into account any mitigative measures included in the project proposal.

56(1)(b) Recommended Terms and Conditions for the Project

The following mitigative measures shall be complied with:

- The trail shall be used only under frozen ground conditions with a minimum maintained packed snow cover of 30 cm to the vegetation layer. Where required, an appropriate snow depth to avoid disturbing surface vegetation (i.e. tussock terrain) must be maintained. If a snowpack of 30 cm is not attainable in vegetated areas then low ground bearing equipment shall be used.

- The proponent and/or field representative shall suspend overland travel of equipment of vehicles if rutting occurs.

- The proponent and/or field representative shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.

- The proponent and/or field representative shall convoy materials and supplies on the winter trail in as few movements as possible.

- The proponent and/or field representative shall ensure that the construction of water crossings are supervised and monitored by a qualified environmental professional to ensure the integrity of crossing structures.

- The proponent and/or field representative shall conduct field observations throughout the project to ensure that the route has sufficient snow depth.

- The first crossing of each waterbody by equipment with a load shall not be carrying fuel.

- At the end of each season of trail use, the major watercourse crossings shall be inspected by a qualified environmental professional to document any accidental damaged to the riparian habitat at those locations. Any observed damages shall be reported to the Department of Fisheries and Oceans Canada (DFO) and appropriate stabilization measures shall be taken to reclaim accidental damages and stabilize the site.

- The proponent and/or field representative shall employ sufficient numbers of Environmental Monitors to observe and ensure environmentally safe practices.

- A field reconnaissance must be conducted by the proponent and/or field representative prior to construction of the winter access and mobilization of associated equipment.

- The proponent shall provide a detailed description of the route to the First Nation of Nacho Nyak Dun prior to opening the route. *(As proposed by the proponent)*

- The location of any spill of petroleum shall be clearly marked with stakes or flags and

the time, manner, location, amount and type of spill shall be reported forthwith in accordance with Part 11 of the *Environment Act*.

- The proponent and/or field representative shall at all times have on site and/or carry sufficient oil spill clean-up equipment and material in readiness to immediately clean-up all petroleum which may be spilled.
- The proponent and/or field representative shall ensure that the Spill Response Plan include the provision of sufficient spill clean-up equipment and material which must be in an appropriate state of readiness at all times in order to immediately clean-up all spills that may occur along the trail during the project life.
- The location of any spill of petroleum shall be clearly marked with stakes or flags and the time, manner, location, amount and type of spill shall be reported forthwith in accordance with Part 11 of the *Environment Act*.
- The proponent and/or field representative shall provide a security deposit in the amount determined by the regulator to be held under the *Territorial Lands (Yukon) Act*, prior to commencement of the proposed project activities.
- All solid waste and garbage will be hauled out and brought to land-fill facilities in Mayo.
- Prior to start-up, the proponent shall conduct a reconnaissance to identify suitable watercourse crossings and problematic areas along the trail including glaciation from seeps and other unanticipated constraints.
- The proponent and/or field representative shall ensure that the construction of water crossings are supervised and monitored by a qualified environmental professional.
- The proponent and/or field representative shall not use any material but clean snow or water in the construction of ice bridges and approaches.
- The proponent and/or field representative shall not allow the deposit of any unauthorized soils or debris in any watercourse, or in any location where these materials could be deposited into any watercourse.
- The proponent and/or field representative shall not deposit or allow the deposit of any deleterious substances (including but not limited to fuels, lubricants, hydraulics and coolants) of any type into any waters, or in any place under any conditions where the deleterious substances may enter any waters.
- Disturbance to stream and river banks at the crossings shall be avoided. The proponent shall make all efforts to maintain vegetation at the proposed water crossings.

- Fuel stored or cached along the proposed route must be located at least 60 m from any wetland, stream or waterbody.

- The proponent and/or field representative shall not allow any ice bridge to hinder the flow of water in any stream.

- All drainages, low-lying areas and wetlands must be frozen to a state capable of supporting 125% of the estimated total weight of the loaded equipment before commencement of project activities.

- The proponent and/or field representative shall ensure that all natural or constructed ice crossings are and remain capable of supporting the vehicles taken across them, by monitoring and testing of ice thickness and condition during the period of use.

- The proponent and/or field representative shall design, construct, maintain and decommission all temporary and permanent structures placed in streams which may be frequented by fish in such a manner that the up or downstream passage of fish is not obstructed.

- If equipment falls through the ice, the proponent and/or field representative shall the immediately advise Fisheries and Oceans Canada in Whitehorse. Telephone number is (867) 393-6721, or Fax (867) 393-6738. The land use inspector and the First Nation of Nacho Nyak Dun shall also be contacted.

- The proponent and/or field representative shall conduct all activities associated with the construction of water crossings in accordance with the Department of Fisheries and Oceans' Operational Statement, "Ice and Snow Fill Bridges". *(Appendix II)*

- The proponent and/or field representative shall contact each active trapper in the vicinity of the project area 10 days prior to initiating the program by mail or through personal communications.

- The proponent and/or field representative shall avoid covering or destroying traps or snares.

- The proponent and/or field representative shall maintain the trail in a manner that leaves it passable by snowmobile at all times.

- A field reconnaissance must be conducted by the proponent and/or a field representative prior to the construction of the winter access and to mobilization of associated equipment.

- The proponent and/or field representative shall ensure that all cache sites are located at a minimum 60 meters from the high water mark and all material is covered in a green

tarp.

- The proponent and/or field representative shall make the locations of all caches available to wilderness tourism operators and travelers through the regulator.

- The proponent and/or field representative shall ensure that the construction of the airstrip is done in such a manner as to prevent erosion and sediment discharge into surrounding waters.

- The proponent and/or field representative shall construct the airstrip with the minimal amount of clearing possible and in a location that is elevated and set back from the river and not visible from the river.

- The proponent and/or field representative shall make every effort to ensure that air traffic associated with the project do not fly directly above the river but rather gain elevation and fly across the river course when practicable. *(As discussed with proponent at November 14, 2007 meeting).*

- The proponent and/or field representative shall take every precaution to ensure that wildlife habitat is not damaged.

- Encounters with wildlife shall be reported to the Conservation Officer in Mayo.

- The proponent and/or field representative shall not disturb, harass, feed, hunt or trap wildlife.

- The proponent and/or field representative shall give caribou encountered along the access route the right-of-way and leave them undisturbed with exception of emergency travel.

- The proponent and/or field representative shall not travel on the proposed spur route along the Bear River in years when the Bonnet Plume Caribou herd are congregated at the confluence of the Bear and Wind Rivers or in the Bear River drainage. Authorization to utilize the Bear River spur route shall be determined annually by the regulator.

- The proponent and/or field representative shall provide a copy of all documentation produced by Environmental Monitors to the Land Use Inspector in Mayo, Conservation Officer in Mayo and NND.

- The proponent and/or field representative shall employ sufficient numbers of Environmental Monitors to observe wildlife and wildlife habitat (meaning birds/other wildlife and their habitat) in the project area and surroundings. Tasks include but are not limited to the following:

a) Conduct reconnaissance of project prior to start up to identify:

i)Sensitive habitats;

ii)General wildlife presents in the area;

iii)Relative densities and distribution of wildlife in the area with specific emphasis on raptors and caribou;

iv)Where observed, locations of raptors nests, possible dens, lodges and burrows;

v)Any field issues that in combination with project activities may pose undue risk to wildlife during and after the project.

b)Continue field observations by air and on ground throughout project duration to maintain current information on noted subjects.

c) Promote and monitor compliance of mitigative measures associated with wildlife and wildlife habitat.

10) Certification

Assessment Report Prepared By	
Signature Loralee Johnstone	**Date** December 24, 2007
Authorized By	
Signature Loralee Johnstone	**Date** December 24, 2007