Ecofor Consulting Ltd.
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ASSESSMENT REPORT

describing

Heritage Resource Overview & Impact Assessments

Field work performed August 7 – 11, 2018
of the

Blende Property

Max 1 – 64	YC50636 – YC50699
66 – 77	YC50700 – YC50711
78 – 85	YC50712 – YC50719
86 – 91	YC50720 – YC50725
92 – 99	YC50726 – YC50733
100 – 105	YC50734 – YC50739
106 – 113	YC50740 – YC50747
114 – 153	YC50748 – YC50787
154 – 161	YC54978 – YC54985
Mix 1 – 16	YC09985 – YC10000
Trax 1 – 28	YC39822 – YC39849
Trix 1- 46	YC11723 – YC11768
47 – 56	YC32293 – YC32302

NTS 106D/07
Centered at 64 24’ 39” N and 134 40’ 21” W

Located in the

Mayo Mining District
Yukon Territory

prepared by
Ecofor Consulting Ltd.

for

Blind Creek Resources Ltd.

by
James P. Mooney, MA, RPA, RPCA

December 6, 2018

ECOFOR
natural and cultural resource consultants

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STATEMENT OF QUALIFICATIONS – Yukon Class 2 Archaeological Permit Holder

Pursuant to section 83 of the *Historic Resources Act*; sections 6 and 7, of the *Yukon Archaeological Sites Regulations* (O.I.C. 2003/73); and the *Guidelines for Permit Holders*;

I, James Mooney swear that I am a qualified professional archaeologist who meets the criteria for the purpose of determining the eligibility to receive a Class 2 archaeological research permit. I have completed a master's degree in Anthropology, I am a member in good standing of the Register of Professional Archaeologist (since 2000), I am a member in good standing of the BC Association of Professional Archaeologists (since 2011), and I have completed similar archaeological research projects in Canada and abroad. I have over thirty years of cultural resource management experience and I am familiar with the heritage resources of the Yukon and best management practices associated with mineral exploration and mining development. Since 2008, I have been granted 62, Class 2 archaeological research permits by the Heritage Resources Unit of the Government of Yukon including permit 18-13ASR for the Heritage Resource Impact Assessment of the Blende Property on behalf of Blind Creek Resources Ltd.

James Mooney

James P. Mooney, MA, RPA, RPCA
V.P. Business Development,
Heritage Resources
Ecofor Consulting Ltd.

Dec 5, 2018
Date

ECOFOR
natural and cultural resource consultants

Heritage Resource Overview Assessment: Blende Property Class 3 Quartz Exploration

(TO BE INCLUDED IN YESAB MATERIALS – NO SITE SENSITIVE DATA)

Prepared for:
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Report also submitted to:
Na-Cho Nyak Dun First Nation

June 4, 2018

EXECUTIVE SUMMARY

On behalf of Blind Creek Resources Ltd., Ecofor Consulting Ltd. has conducted a Heritage Resource Overview Assessment (HROA) for the Blende Property Class 3 Quartz Exploration area. The proposed project involves mineral exploration and mining activities on 283 claims located 65 km northeast of Keno City, YT. The total study area covers approximately 5,300 ha and lies within the traditional territory of the Na-Cho Nyak Dun First Nation. The project area partially overlaps with outfitting concession #5 and trapping concession #41 and #42.

The objectives of this HROA are to assess the heritage resource potential and sensitivity within the Blende Property Class 3 Quartz Exploration area. To accomplish these objectives, Ecofor has completed a desktop review of the physical/environmental and cultural/historical setting of the study area, and used the data produced by that study to identify areas with elevated potential for encountering previously undocumented heritage resources. Elevated potential for encountering heritage resources is determined through review of multiple factors, including, but not limited to, landform, viewshed, proximity to natural resources (e.g. water, food gathering areas, lithic quarries), and proximity to previously recorded heritage resource sites. This methodology is commonly used in cultural resource management and is designed to err on the side of caution by identifying areas of potential concern before the commencement of any ground disturbing activities. No traditional knowledge/traditional land use information was collected or reviewed as part of this study.

This HROA identified multiple areas of elevated heritage potential for surface/subsurface heritage resource sites. Surface/subsurface site potential areas are primarily associated with high elevation ridgelines/tors, and knolls and terraces in low-lying valley bottoms; especially those valley bottoms associated with watercourses. There are no known heritage resource sites within the study area. Potential for culturally modified trees (CMTs) was not specifically assessed in this HROA due to a lack of available vegetation inventory data. Should old growth pine-leading stands of forest be encountered during any future field assessments, crews should be vigilant for CMTs. If pine-leading stands are not encountered, minor potential for certain types of CMT, such as blazes, trap trees, and Historic claim markers, may still exist in stands of spruce and/or aspen.

Based on the results of this HROA, **Heritage Resources Impact Assessments (HRIAs) are recommended for multiple areas of elevated potential for surface/subsurface heritage resource sites.** Review of this HROA by the Na-Cho Nyak Dun First Nation, and field participation of Na-Cho Nyak Dun representatives in any future fieldwork (e.g. HRIA), is also recommended and encouraged before any development is approved to proceed.

CREDITS

Report Author:	Tim Bennett, MA
HROA Research:	Tim Bennett, MA
Report Editing:	James Mooney, MA, RPA, RPCA
Graphics/GIS Technicians:	Jeff Minichiello, BSc., GIS Advance Diploma

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1.0 INTRODUCTION

On behalf of Blind Creek Resources Ltd., Ecofor Consulting Ltd. has conducted a Heritage Resource Overview Assessment (HROA) for the Blende Property Class 3 Quartz Exploration area. The proposed project involves mineral exploration and mining activities on 283 claims located 65 km northeast of Keno City, YT. The total study area covers approximately 5,300 ha and lies within the traditional territory of the Na-Cho Nyak Dun First Nation. The project area partially overlaps with outfitting concession #5 and trapping concession #41 and #42.

1.1 HROA Objectives

The objectives of this HROA are to assess the heritage resource potential and sensitivity within the Blende Property Class 3 Quartz Exploration area. To accomplish these objectives, Ecofor has completed a desktop review of the physical/environmental and cultural/historical setting of the study area, and used the data produced by that study to identify areas with elevated potential for encountering previously undocumented heritage resources. Elevated potential for encountering heritage resources is determined through review of multiple factors, including, but not limited to, landform, viewshed, proximity to natural resources (e.g. water, food gathering areas, lithic quarries), and proximity to previously recorded heritage resource sites. This methodology is commonly used in cultural resource management and is designed to err on the side of caution by identifying areas of potential concern before the commencement of any ground disturbing activities. No traditional knowledge/traditional land use information was collected or reviewed as part of this study.

1.2 Report Format

The report begins with a basic outline of the project and the objectives of the work undertaken. The proposed activities and their impacts are then discussed in Section 2.0. Section 3.0 describes the methods employed in assessing the archaeological potential. Section 4.0 provides a description of the physical/environmental and cultural/historical setting of the study area. Section 5.0 presents an evaluation of the heritage resource potential within the various localities being considered within the study area, Section 6.0 provides a summary of this analysis and a series of heritage resource management recommendations for the study area, and Section 7.0 lists the references cited. Two appendices are included at the end of the report. Appendix A presents mapping illustrating and supporting the recommendations, and Appendix B presents the Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites in the Yukon.

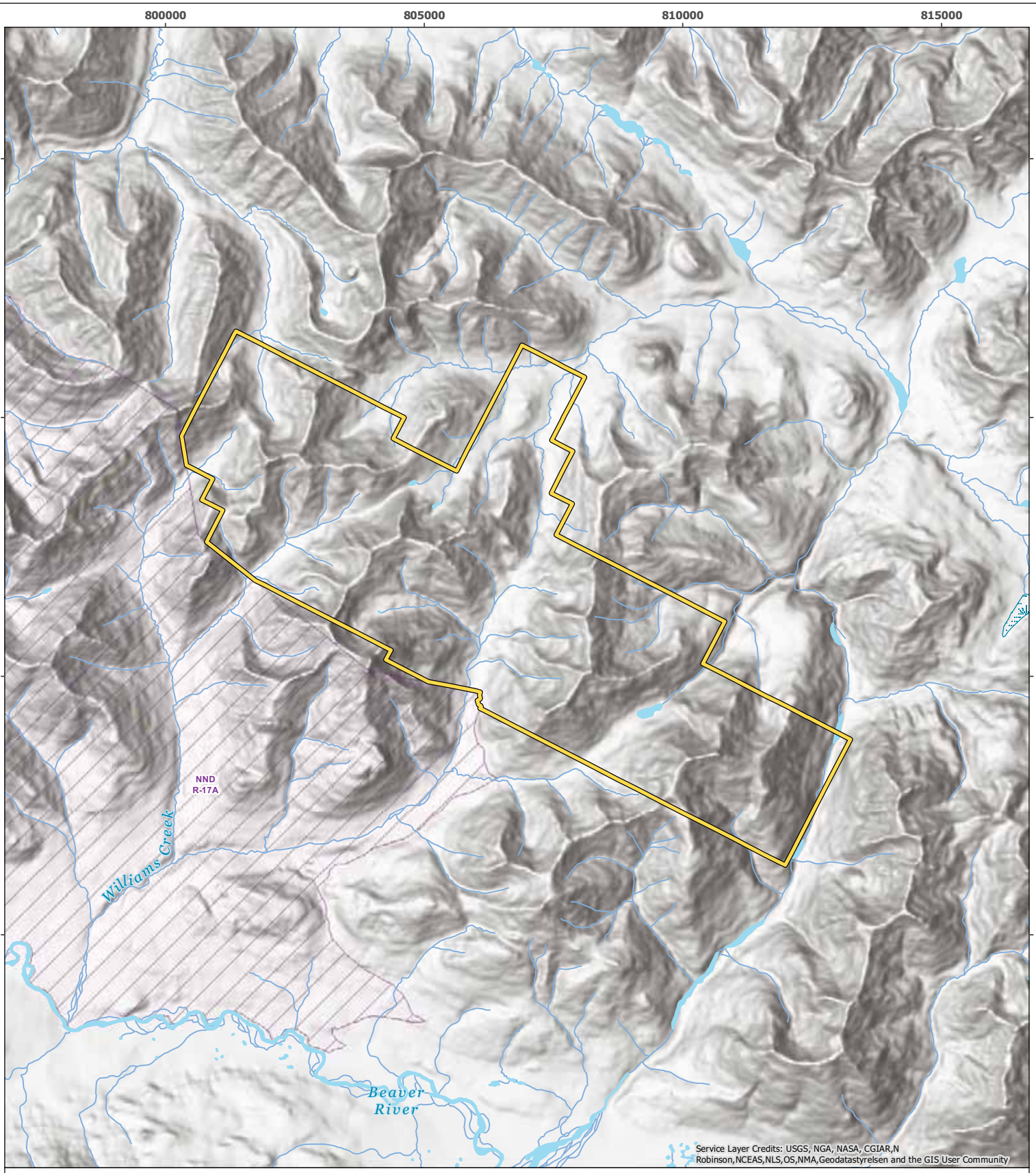

FIGURE 1

BLENDE PROPERTY GENERAL LOCATION MAP

Blind Creek

ECOFOR

Ecofor Consulting Ltd. June 1, 2018 (JM)

1:100,000

(At Original Document Size of 8.5x11")

N

0 2 4Km

NAD 1983 UTM Zone 7N

Disclaimer: Base layers were obtained from the National Topographic Database (NTDB), GeoYukon and ArcGIS Online.

- Watercourse
- Waterbody
- Wetland
- First Nation Settlement Land
- Study Area

2.0 PROJECT DETAILS AND PROPOSED ACTIVITIES WITHIN THE STUDY AREA[1]

The Blende property is located approximately 65 km northeast of Keno in the central Yukon (see Figure 1). The Blende property is owned by Blind Creek Resources Ltd. (BCRL) and consists of 283 contiguous claims. The Blende property was acquired in 2009 by BCRL from Eagle Plains Resources. Eagle Plains Resources submitted a project proposal to YESAB (2005-001) in 2005 to conduct an exploration program at the Blende property and received a class 3 Mining Land Use Approval (LQ00174). In 2011, BCRL received class 3 Mining Land Use Approval LQ00338 as a renewal to LQ00174, which is now expired.

BCRL is proposing to conduct seasonal (May 1 to October 31) mineral exploration in the Mount Williams area at the Blende property through soil and silt sampling, trenching and diamond drilling. BCRL will be applying for a five-year term Class 3 Mining Land Use Approval in support of the proposed activities, including the operation of one camp. The proposed exploration activities will be limited by the snow free season from May 1 to October 31.

In 2018, BCRL is proposing to collect soil samples, trench up to 1800 m^3, conduct ground geophysics surveys, and diamond drill up to 30 drill holes and 20,000 m at the Blende property. All drill holes will be grouted shut upon completion using bentonite or similar grouting method. Further drilling may occur in 2019 through 2022 at the Blende property with additional programs that may include 15-100 drill holes per year and 5,000 m to 30,000 m of drilling per year. Exploration activities will not take place on Na-Cho Nyak Dun settlement land.

2.1 Access

Currently access to the property is via the Silver Trail from Mayo and the McQuesten Lake road to a staging area. Personnel and equipment are mobilized by helicopter from the McQuesten Lake staging area. As an alternative access route, BCRL is proposing to construct an airstrip in the eastern portion of the property. The development of the airstrip will require levelling of subalpine soil and minor clearing of brush and trees. The airstrip will be approximately 900 m in length and 20 m wide. Flight frequency would be up to 48 per year (up to 6 months a year, 2 flights a week).

The proponent has not identified specific areas for proposed road construction, but expects any new roads to be build as spur roads off the existing road to new drill sites. The proponent does not anticipate the proposed new roads to involve new creek crossings. The proponent may cross

[1] Information provided in this section was adapted from the Blende Property YESAB project proposal document (Doc No. 2017-0156-003-1; available at http://www.yesabregistry.ca/wfm/lamps/yesab/lowspeed/projectdetails.jsp;time=1527545482937).

Williams Creek on the existing roads. The proponent will take the appropriate measures to protect the banks and riparian area at each crossing site to mitigate any potential effects. Williams Creek is classified by the Placer stream classifications as having no salmon spawning on Williams Creek in the project area. Williams Creek within the upper watershed area is small, with high velocities and has steep grades that are typical of being fish barriers, therefore the proponent expects the fish value to be low or zero for the identified creek crossings.

The proponent will use the Wind River trail for up to 2 round trips (3 days) to mobilize equipment as required, and to demobilize equipment and final decommissioning. If moose or other wildlife are encountered along the winter road, work will stop until wildlife has passed through the area. Snow berm height along the trail will be minimized and will include periodic gaps.

2.2 Camp

One camp will be established to support the exploration program. Fuel will be stored in both drums and tanks at the proposed locations. Fuel storage tanks will include secondary containment systems. Outhouses will be used to manage human waste.

The camp will support up to 50 people and will potentially be in operation from May 1 to October 31. It may be composed of up to 20 wall tents. Potable water for camp will be pumped from the water source and UV treated. Additionally, water for drilling at the Blende property will be pumped from the nearest water body. In total, the camp and drill program when in operation, up to 150 m^3/day of water may be required.

2.3 Exploration Activities

BCRL is proposing to collect soil samples, lay 80 ground based geophysics lines, (0.5m wide up to 900 m in length), trench ~ 1800 m^3, and diamond drill up to 30 drill holes and 20,000 m on the Blende property that will be supported by a helicopter in 2018. Drill sites will have secondary containment on the fuel storage. Drill sumps will be placed down gradient to collect drill water and drill cuttings. When a sump cannot be located down gradient due to permafrost or bedrock, a closed loop/tank system will be used to collect drill water and cuttings. Drill locations will be reclaimed to previous ground conditions by replacing the removed vegetative mat or re-contouring the talus material. Minimal earth work is anticipated for the drill clearings as minimal vegetative mat is expected since the majority of the locations are above the tree line where they contain minimal vegetation/soil and only talus or bedrock ground. BCRL is applying for a five year term Class 3 Mining Land Use Approval and is requesting up to 15 clearings per claim, up 20 trenches will be dug totalling 1800 m^3, and up to 120,000 m of drilling over the proposed 5 year

term. Water for drilling will come from Williams Creek and possibly other, currently unidentified water sources.

2.4 Site Reclamation

The proponent will follow the Yukon Mineral and Coal Exploration Best Management Practices and Regulatory Guide (Yukon Chamber of Mines 2010) guidance on reclamation measures:

- Seasonal Closure/ Partial Deactivation/Final Decommissioning
  - Slope stability in steep areas will be checked and recontoured/revegetated as required
  - Any ditches or berms that may cause water to channel will be re-graded
  - On steep slopes, earth berms may be built to divert surface runoff away from the road surface
  - Compacted surfaces will be scarified
  - Stockpiled topsoil, brush, and other organic debris will be distributed over disturbed areas to promote revegetation

3.0 METHODOLOGY

This report presents the results of a desktop study designed to predict the potential for encountering heritage resources within the Blende Property Class 3 Quartz Exploration area. The methodology used in this desktop HROA to develop these predictions is described below.

The desktop review relies on two primary lines of evidence, the physical/environmental and cultural/historical setting of the study area:

1. The first line of evidence is predicated upon attributes of the physical/ environmental setting. These attributes are derived from an analysis of the biogeoclimatic zones, physiography, hydrology, bedrock and surficial geology, and vegetation and wildlife distributions. Aerial photographs and topographic maps were also reviewed. This approach relies on the assumption that specific geographic features, such as elevated landforms (e.g. ridges, knolls, terraces, etc.), water features (e.g. lakes, rivers, creeks, wetlands, and their associated banks/margins), and resource patches (e.g. hunting and foraging locales, quarry sources), can be linked to specific settlement and resource exploitation patterns. Close proximity to these types of landforms is considered to be an indicator of high potential for heritage resources regardless of whether previous heritage resources studies have identified sites of interest in the vicinity.

2. The second approach is built upon a review of previous heritage resource management research conducted within the study area and adjacent lands aimed at understanding the area's cultural/historical setting. The review includes a general overview of the culture historical context of the study area, and a detailed review of previous archaeological studies and historical records. In this stage of the analysis, closer proximity to previously recorded heritage resource sites is considered to be evidence for human use of the area, and it is therefore interpreted as an indicator of elevated potential for heritage resources.

The data obtained through these reviews will then be used to assess the potential for development related impacts to both known and previously undocumented heritage resource sites. In terms of the physical/ environmental setting, the analysis will be based upon the criteria described in section 3.1 of this report. A list of potential site types expected for the study area, and the physical/environmental attributes they are expected to be correlated with, are presented below in Section 3.2. The cultural/historical assessment will be based on a general review of the documented Precontact (Section 4.2.1), Protohistoric (Section 4.2.2), and Historic

(Section 4.2.3) periods in the broader region and modern First Nations whose traditional/ asserted territory overlaps with the proposed project area (Section 4.2.4), as well as specific reviews of previous heritage resource studies, documented archaeological site inventory, and Historic sites on file with the Yukon Government Heritage Resource Unit (Section 4.2.5).

3.1 Landforms and Geographic Features with High Heritage Resource Potential

In addition to the areas around known sites, a number of landforms and landscape features can be used to help identify areas of heightened heritage resource potential. They include:

1. Elevated landforms such as valley edges, terraces, ridges, mid-slope benches, and knolls. These landforms are considered areas of potential for heritage resources because they often offer better drained soils, relative proximity to water and game, and larger viewsheds. Elevated landforms with south-facing margins are considered especially high potential because of their warmer temperatures and better airflow which helps reduce insects. These types of landforms are associated with a wide variety of site types including campsites, lookout sites, cache sites, etc.

2. Areas within close proximity to water are also considered to be areas of potential for heritage resources. The potential of these areas is bolstered both by human water needs, but also those of large game animals, fish, and bird species. The easy access to water makes these areas ideal for habitation and hunting sites.

3. Areas near lithic raw material sources are considered to have potential for heritage resources due to their value as quarry sites.

4. Caves, rockshelters, and tors, are listed as possessing increased potential for heritage resources due to possible use as temporary shelters from poor weather, as possible quarries for lithic raw materials, and as special places on the landscape that may be associated with spiritualism, ritual practices, and rock art in traditional cultures.

5. Sedimentary rock beds with the potential to contain palaeontological remains.

6. A final component of assessing the physical environment is determining the level of previous disturbance in the area. If areas have been severely disturbed in the past it reduces the potential of finding intact archaeological remains. Disturbance can include previous activities such as mining, oil and gas exploration, winter road or airport construction, etc. Disturbance is determined through analysis of the maps and historical

information which indicate locations of previous known industrial activities. Professional judgment is used to determine the level of impact resulting from a given disturbance.

3.2 Potential Site Types Expected in Study Area

Eleven broad site types are considered in this heritage resource assessment for their likelihood to be present within the study areas. Definitions of these site types, and the physical/ environmental attributes they are expected to be correlated with, are presented below. These general assumptions are extrapolated from previous archaeological studies and known sites in the larger area. Please note these broad site types overlap and are not mutually exclusive (e.g. a habitation site may also have been used as a hunting or fishing site).

3.2.1 Permanent/Long-Term Habitation Sites

Permanent/long-term habitation sites would indicate prolonged or repeated occupation of a locality. In this area, permanent/long-term habitation sites could be considered those sites which are returned to seasonally year after year, such as a summer campsite. Based on previous archaeological and ethnographic research, these sites are considered most likely to be associated with high, well-drained, south-facing landforms with grassy margins and/or open, pine dominated forests, and good access to water. Essentially, permanent/long-term habitation sites are only expected in optimal locations.

3.2.2 Temporary Habitation/Subsistence Sites

Temporary habitation sites tend to be associated with resource gathering activities such as hunting and foraging, but can sometimes be related to ceremonial activities. Subsistence related sites are typically represented by lithic tools, evidence of tool production/maintenance, hearths, hunting blinds, and possibly faunal remains. Ceremonial sites related to puberty and shamanistic rituals are often represented by cairns, isolated hearths, and lithics. The locations of hunting related temporary habitation sites are heavily influenced by landforms that also attract animals (e.g. water features) or that offer a commanding view of areas where animals are likely to congregate (e.g. elevated lookouts). Foraging related temporary habitation sites will be focused on areas that support commonly foraged resources such as berries. The exact criteria for these sites will vary depending on the resource being foraged. Ceremonial sites will not necessarily be connected to any specific type of resource, but are often found in difficult to reach places such as high elevation ridges and plateaus. One final area of potential for temporary habitation sites is along travel corridors such as trails. Typically, if found along a travel corridor, these sites will also be associated with some other noteworthy geographic feature such as a lookout or clearing (anything to make the area stand out relative to its surroundings).

3.2.3 Quarry Sites

These sites are found in areas where natural stone was quarried for the fabrication of stone tools. Desirable qualities in raw material types for stone tool manufacture include conchoidal fracture properties and low occurrences of internal flaws and inclusions. Such materials are typically found in a number of contexts including natural veins in bedrock, volcanic formations, or in secondary deposits (e.g. riverbeds).

3.2.4 Rock Art Sites

Rock art is man-made markings or etchings/peckings on natural stone surfaces. Rock art tends to be located along major watercourses, trails, or at boundaries of traditional territories.

3.2.5 Fishing Sites

Fishing sites typically include fish weirs or natural narrowing of major rivers and streams where fish could be caught more easily. Some potential also exists in lakes, but most lakes in the study area, besides the Yukon River, are not associated with waterways that are utilized by high yield fish resources such as salmon.

3.2.6 Human Remains

Unexpected human remains are rarely encountered during heritage resource studies, however the potential for their presence always exists, especially in areas where higher densities of people are known to have congregated in the past. Prior to the influence of Christian missionaries, First Nations people would often place graves and spirit houses on prominent points or terraces near village/camp sites, or on low, level ground near trails. Once Christian practices became commonplace, graveyard burials became the norm for most people.

3.2.7 Culturally Modified Trees

Culturally modified trees (CMTs) are trees that have been altered by humans for a variety of purposes including cambium, sap, kindling, and/or bark collection, marking trails (blazes), and communicating messages. Most documented CMTs in the Yukon are pine trees.

3.2.8 Trails

Trails are pedestrian travel routes that may be marked by a well-worn trail bed, blazed trees and/or other CMT types, and/or cairns. Trails are often associated with natural corridors such as rivers and elevated ridges.

3.2.9 Historic Sites

European trading began in the region in the 1840s, and it is likely that Europeans stuck closer to their trading routes (rivers and trails), relying on First Nations to procure items from further away. As such, early Historic Period sites are most frequently encountered along documented travel corridors and settlement sites, but could also be found away from these areas in association with early European trapping and prospecting activities. Moreover, artifacts of European origin could have been traded to First Nations persons then transported to locations generally considered to be more indicative of Precontact sites. Early historic sites aside, most historic sites within the study area are likely to be associated with 20th century mining and prospecting.

3.2.10 Isolated Finds

Isolated finds are small scale archaeological sites, typically of a single artifact. Due to the scale of these sites, they offer little behavioural insight into the people who created them, but they do document human use of the land in the past.

3.2.11 Palaeontological Sites

Palaeontological remains within the study area are most likely to be associated with hardrock exposures or placer deposits in the valley bottoms.

4.0 ANALYSIS OF STUDY AREA

The proposed project involves mineral exploration and mining activities on 283 claims located 65 km northeast of Keno City, YT. The total study area covers approximately 5,300 ha and lies within the traditional territory of the Na-Cho Nyak Dun First Nation. The project area partially overlaps with outfitting concession #5 and trapping concession #41 and #42.

The Blende Property Class 3 Exploration area is located within the Selwyn/Wernecke Mountains. Mount Williams is the one named mountain within the study area, but several peaks are present. Elevations range from approximately 880 m to 1,860 m a.s.l. Valleys between these mountains are typically stream bearing. The one named watercourse is Williams Creek, but several other unnamed streams are present. These creeks drain into the Beaver River to the south of the study area. Soil cover is generally thin in the area of the Blende quartz claims, with no soil developed at higher elevations. Lower elevations support spruce, pine, and willow, but the area is generally sparsely vegetated with higher elevations being completely barren. Fauna known to inhabit the area include bear, moose, caribou, sheep, beaver, marten, lynx, coyote, fox, ptarmigan, and a variety of raptors and waterfowl.

Exploration activities have been ongoing since the 1990s, hence the area has been subject to some minor previous disturbance. The property includes approximately 36km of existing roads. However, these disturbance areas are small, and the majority of the study area appears to be largely intact.

Further information regarding the broader physical/environmental and cultural/historical setting of the study area are presented below.

4.1 Physical/Environmental Setting

The study area is located within Taiga Cordillera Ecozone and the Mackenzie Mountains Ecoregion. The following Section provides a summary of this ecoregion to provide environmental context to the results of this HROA (see Smith et al. 2004 for full ecozone and ecoregion discussion).

The Mackenzie Mountains Ecoregion is characterized by Broad U-shaped valleys and bare mountain ridges (Smith et al. 2004). It includes the portions of the Mackenzie Mountains, including the Bonnet Plume Range and the Knorr Range in northeastern Yukon, and the northern portions of the Backbone and Canyon ranges, as well as the South Ogilvie and Wernecke mountains (Mathews 1986; Smith et al. 2004). Terrain ranges from 400 m a.s.l. to 2,750 m a.s.l. in elevation with the majority falling between 750 and 1,500 m a.s.l. (Smith et al. 2004). Mount

McDonald is the highest of the mountains within the ecoregion. The mountain ranges here form part of the Mackenzie–Yukon hydrologic divide. Major rivers in the northern part of the ecoregion, including the Ogilvie, Blackstone, Hart, Wind, Bonnet Plume, and Snake, drain north into the Mackenzie River and Beaufort Sea (Smith et al. 2004). In the southern part of the ecoregion the Stewart, Nadaleen, McQuesten, and Klondike Rivers flow to the Yukon River and Bering Sea (Smith et al. 2004). Lakes are uncommon, and tend to be small where they do occur.

Mean annual temperatures in the Mackenzie Mountains Ecoregion are near –6°C. Seasonal variability is less extreme than in many other ecoregions in the Yukon. In January, average temperatures fall around -25°C while July temperatures average 8°C (Smith et al. 2004). Recorded extreme tempuratures range from -50°C during winter to 30°C in summer on the valley floors, but only range from -35°C to 15°C at higher elevations (Smith et al. 2004). Frosts and/or thawing temperatures can occur year round in the ecoregion. Precipitation is relatively heavy with 450 mm to 600 mm annually with July and August being the wettest months and the period between December and May being the driest (Smith et al. 2004). Snow is possible year round.

In terms of bedrock geology, the entire ecoregion lies within the Cordilleran Foreland Fold and Thrust Belt (Gabrielse and Yorath 1991). Sedimentary carbonate rocks form as steep and rugged ridges, with clear mountain-scale folds, while recessive siltstone, shale, and major faults underlie the intervening valleys (Smith et al. 2004). The oldest of these rocks date to as long as 1.6 billion years ago, forming in the Early Proterozoic (Smith et al. 2004). These oldest rocks are overlain in places by somewhat younger rocks (Late Proterozoic ~750 Ma to 600 Ma) belonging to the Wernecke Supergroup (Delaney 1981), the Mackenzie Mountain Supergroup (Smith et al. 2004), the Fifteenmile Group (Thompson 1995), and Pinguicula Group (Thorkelson and Wallace 1995), then even younger materials of Upper Paleozoic through Jurassic age (Smith el al. 2004). A multitude of metallic minerals are known in the Mackenzie Mountains Ecoregion, including uraniferous mineral brannerite, abundant iron as hematite, copper, barium, cobalt, lead, zinc, lead, nickel, platinum, arsenic, uranium, and gold (Archer and Schmidt 1978; Turner and Abbott 1990; Bremner 1994; Smith et al. 2004). Coal seams are also common in the northeast and northwest portions of the ecoregion (Smith et al. 2004).

Colluvial deposits related to long exposed and weathered surfaces dominate the majority of the surficial geology of the Mackenzie Mountains Ecoregion with approximately 70% coverage (Smith et al. 2004). Glacial deposits, primarily within glaciated valleys, cover an additional 25%, with the remaining 5% being organic, alluvial, and lacustrine deposits (Smith et al. 2004). Modern processes affecting the surficial geology include landslides, rotational slumps, rock fall, and debris flows in areas of exposed rock, solifluction and soil creep in permafrost areas, and active rock

glaciers (Smith et al. 2004). The southern boundary of the continuous permafrost zone runs through this ecoregion, with some thawed areas resulting in thermokarstic lakes (Smith et al. 2004).

Several pre-Reid glaciations recorded within the Mackenzie Mountains Ecoregion in the Tintina Trench and along the northern slopes of the South Ogilvie Mountains (Duk-Rodkin 1996). Further evidence from younger glaciations, the Reid (ca. 200 ka) and the McConnell (ca. 23 ka), can be found in most mountain valleys (Duk-Rodkin 1996; Kennedy and Smith 1999). The Wernecke Mountains portion of the ecoregion was largely covered by the Cordilleran Ice Sheet that merged with local glaciers from the South Ogilvie Mountains (Smith et al. 2004). The Snake and Bonnet Plume river valleys, in the northern part of the ecoregion, were affected by the Late Wisconsinan Laurentide Ice Sheet (ca. 30 ka; Hughes et al. 1981; Schweger and Matthews 1991), which blocked the drainage of all streams in the Mackenzie and Wernecke mountains, creating a meltwater channel system that exited through a meltwater channel connecting the Arctic Red, Snake, and Bonnet Plume Rivers and the Bonnet Plume Depression, and drained into Glacial Lake Hughes (Duk-Rodkin and Hughes 1995).

Vegetation within the Mackenzie Mountains Ecoregion generally consists of alpine tundra at higher elevations with valleys of taiga forest (Smith et al. 2004). The treeline sits at approximately 1,200 m a.s.l. (Smith et al. 2004). Areas above 1,500 m a.s.l. are typically bare rock or rubble with lichens and sparse forbs, graminoids, and bryophytes in sheltered pockets (Kennedy and Smith 1999). Some gentler high elevation slopes may also include dwarf willow and ericaceous shrubs (Jingfors and McKenna 1991). Mid-elevation mountain slopes and subalpine river valley terraces are dominated by shrub birch-willow communities (Russell et al. 1992; MacHutcheon 1997; Kennedy and Smith 1999), with understories of net-veined willow, lowbush cranberry, Labrador tea and lichen in drier areas and moss, lichen, and commonly bearberry, lowbush cranberry, alpine blueberry, cloudberry, and sometimes horsetail in wetter areas (Smith et al. 2004). At low elevations, stands of black and white spruce or mixed stands of spruce, aspen, paper birch and balsam poplar are common, with understories including Labrador tea, willow, rose, soapberry and alpine blueberry, horsetail, lupine, and bear root (LGL 1981; Stanek et al. 1981; Kennedy 1992; MacHutcheon 1997). Lodgepole pine and subalpine fir are largely absent from the ecoregion (Smith et al. 2004).

A number of large mammals populate the Mackenzie Mountains Ecoregion, including grizzly bear, wolverine, Dall sheep, and Stone sheep (Barichello et al. 1989; Smith et al. 2004). Woodland caribou of the Bonnet Plume, Hart River, and Redstone herds. The Bonnet Plume herd (n=~5,000 individuals) and the Redstone herd (n=~10,000 individuals) are among the largest

woodland caribou herds in the Yukon (Smith et al. 2004). Smaller mammals include collared pika, singing vole, and Ogilvie Mountains lemming, deer mouse, least chipmunk, and hoary marmot (Smith et al. 2004). Bird populations in higher elevations include a wide range of species such as Townsend's Solitaire, Willow Ptarmigan, Northern Shrike, Wilson's Warbler, American Tree, White-crowned, Golden-Crowned Sparrows, Rock Ptarmigan, White-tailed Ptarmigan, Northern Wheatear, Gray-crowned Rosy Finch, Horned Lark, Surfbird, Short-eared Owl, American Pipit, Golden Eagle, and Gyrfalcon (Osgood 1909; Frisch 1975, 1987; Sinclair 1995, 1996; Canadian Wildlife Service 1995). Lower elevation forests provide homes for Merlin, Northern Flicker, Swainson's Thrush, Yellow-rumped Warbler, Blackpoll Warbler, Dark-eyed Junco, Peregrine Falcon, Northern Goshawk, Northern Hawk Owl, Three-toed Woodpecker, Gray Jay, Common Raven, and Boreal Chickadee (Osgood, 1909; Frisch 1975, 1987; Canadian Wildlife Service 1995). although waterbird populations are low due to limited suitable habitat, Harlequin Duck, Wandering Tattler, American Dipper, Trumpeter Swans, Mew Gull, Belted Kingfisher, and Solitary and Spotted Sandpipers (Osgood 1909; Frisch 1987, McKelvey and Hawkings 1990) can be found within the Mackenzie Mountains Ecoregion. And finally, riparian thickets support several species of songbird including Alder Flycatcher, Orange-crowned Warbler, Yellow Warbler, Northern Waterthrush, Savannah Sparrow, and Lincoln's Sparrow (Frisch 1987).

4.2 Cultural/Historical Setting

The following is an overview of the culture history for the broader region surrounding the study area including south-central and southwestern Yukon, and northern British Columbia. Many researchers have reviewed the cultural history of this broader area and have presented the information using a variety of terms and temporal ranges (Clark 1981; West 1996; Workman 1978; J. V. Wright 1995, 1999).

4.2.1 Precontact Period (ca. 11,000 BP to ca. AD1700s)

The earliest Precontact occupation, which dates to early post-glacial times, is known as the Northern Cordilleran Tradition (Clark 1983; Hare 1995). The earliest Northern Cordilleran Tradition occupation known at present is a site located near Beaver Creek, dated to 10,670 BP (Heffner 2002). The majority of sites appear to date older than 7,000 to 8,000 BP. The Northern Cordilleran Tradition, with some overlap, predates the introduction of microlithic technology from Alaska into the interior of the central and southern Yukon (Clark 1983; Hare 1995).

The Northern Cordilleran Tradition was followed by the Little Arm Phase, which dates from 7,000 to 4,500 BP (Clark and Gotthardt 1999; Workman 1978) and can be defined by the use of microlithic technologies. After about 4,500 BP, there is less evidence of microblade use in the

Yukon, and an increase in the use of notched projectile points and a variety of scraping and carving tools. This new tool industry is known as the Taye Lake Phase in southwest Yukon, or more broadly in Yukon and Alaska as the Northern Archaic Tradition (Hare 1995; Workman 1978).

The most recent archaeological culture of southern Yukon is that of the Aishihik Phase (Workman 1978). This phase is thought to be a cultural development from the earlier Taye Lake culture, although there are some significant differences in technology. The most notable is the introduction of the bow and arrow, replacing a type of throwing spear known as an atlatl (Hare et al. 2004). These Aishihik Phase sites are found above the White River Volcanic Ash layer (also known as White River Tephra) that is dated to about 1,250 BP (Clague et al. 1995).

The Aishihik Phase has been evaluated as ranging from approximately AD 750 to AD 1750, and also includes the use of native copper tools, stemmed projectile points, and gorges. Also indicative of the Aishihik Phase are small stemmed Kavik points, end and side scrapers, and ground adzes (Hare 1995). The poor preservation of organic materials makes the task of diet reconstruction more difficult than at the coastal sites, but there is evidence of continued use of a variety of large and small mammals, fish, and birds. In the high elevations of the southern Yukon ice patches, examples of the transition from the older atlatl technology to the bow and arrow use has been clearly documented by recent finds (Hare at al. 2004). The shift to the new technology was a rather abrupt one at roughly AD 750 based on a good sample of preserved and dated atlatl dart shafts and bow and arrow remains.

4.2.2 Protohistoric Period (ca. AD1700s to ca AD1840s)

The Protohistoric Period, as presented here, can be defined by the appearance of non-native goods, other early trade items, and foreign (western or eastern) influences, but not the documented accounts of non-native peoples themselves. As such, it spans the time between the first introduction of non-native influences or artifacts, and the recording of first hand or primary written accounts. Other indicators of the Protohistoric Period are the arrival of the first non-native diseases and information concerning non-natives. Unlike other cultural periods with more specific temporal ranges it is difficult and perhaps impossible to determine when the first ‘outside’ influences from Russian, Asian, European, or other more distant cultures began to impact First Nations people in the Yukon interior.

Some of these far reaching effects may have been passed along from Russian exploration in the early and mid-1700s (Veniaminov 1984) and other Asian and European (Andreev 1944, Quimby 1985) exploration and contact with coastal communities. The Chilkat Tlingit from the Northwest Coast travelled and traded with many interior First Nation peoples throughout this Protohistoric

Period including the Northern Tutchone from the Dawson and Mayo areas and occasionally the Mountain Dene people from as far away as Fort Norman on the Mackenzie River. The Tlingit protected and controlled the trading routes into the interior and fiercely defended those routes when they were threatened. News of early non-native explorers and traders would have travelled inland along with foreign items such as metals, cloths, glass beads, and later tobacco and other goods.

In some of the earliest cases the impacts of these foreign cultures could have had significant impacts even without the presence of the foreigners themselves. Such is the case for what is called 'drift-iron' whereby metals and other materials from Asian or European shipwrecks wash ashore in wood debris. Historical accounts of shipwrecks have been reported in the mid-1700s, but much earlier wrecks were possible. Metals and other foreign trade items have been derived from shipwrecks off what is now British Columbia, Southeast Alaska, and perhaps the Northwest Alaska as well.

4.2.3 Historic Period (post ca. AD1840s)

4.2.3.1 Historic Period Overview

During the early years of this period the Russians were exploring along the Pacific coast and up the major rivers of the Alaskan interior, while the British were exploring eastward into what would become Canada's Northwest and Yukon Territories, and Alaska. In the 1840s, representatives of the Hudson Bay Company (HBC) established trading posts throughout the northern territories. The closest trading post to the study area would have been the HBC Fort Francis post, located on the north side of Frances Lake, at the junction of the East and West Arms. In 1840 Robert Campbell of the HBC built "Glenlyon House" and began trading there in 1842. When trading began Campbell changed the name from Glenlyon House to Fort Francis, after Lady Francis Simpson the wife of the governor of the HBC. It was the first trading post in the Yukon Territory and was successful for the first few years however when Fort Selkirk and Fort Pelly Banks were established it deteriorated and eventually shut down in 1852 (Coutts 1980). The location of Fort Selkirk was known to upset the Chilkat Tlingit who controlled the trade routes from the coast to the central Yukon. In 1852, a Chilkat Tlingit raiding party travelled inland and forced Robert Campbell and his crew to leave the trading post, which was consequently burned by the Northern Tutchone (Castillo 2012). After the post at Frances Lake and the Fort at Pelly Banks were abandoned by the Hudson's Bay Company by 1851-1852, Fort Halkett remained open until 1865.

In 1867, US Secretary of State William Seward was able to focus increasing American interests, and he convinced the United States Senate to purchase Alaska from Russia. Soon after the purchase, the US Army sent Captain Raymond up the Yukon River on the first sternwheeler steamer to reach Fort Yukon (Grauman 1977). Raymond surveyed the location of Fort Yukon and proved that it was within US territory. The British sold the Fort to the US Government and relocated east across the 141st Meridian.

The inland fur industry continued to drive exploration and settlement into the late 1800s, but mining would shift the focus to the placer gold found in streams and alluvial deposits. Mining in the second half of the nineteenth century was a risky, but often very lucrative enterprise. The impacts of mining would spread quickly and drastically change life in the Yukon.

Mineral prospecting and mining efforts in the second half of the nineteenth century were, in some ways, very dependent on the existing infrastructure of the fur trading and missionary efforts. As the competition for the inland fur trade grew, so would the number of sternwheelers on the Yukon River. These steamers could better supply the small number of trading posts along the Yukon and its tributaries and reduce the risk of prospectors running short of supplies. Therefore, more of the fur traders and other explorers turned their attention to search for gold and other minerals. Three key prospectors to the north were L. S. (Jack) McQuesten, Al Mayo, and Arthur Harper. They wrote to miners in the United States to encourage them to come north. They also established outposts along the Yukon River, including Fort Reliance, established in 1874 near the confluence of the Klondike River (what would become Dawson City) (A. A. Wright 1976).

Harper and another man may have been the first to travel up the Fortymile in search of gold in 1881 (Buzzell 2003). They collected a very rich sample but were unable to relocate the exact location. In 1886, McQuesten, Harper, and Mayo built a post on the confluence of the Stewart and Yukon Rivers which provided supplies for additional prospectors. Also in 1886, Howard Franklin made a richer find on the Fortymile River. Others rushed in and these claims along the Fortymile River attracted miners from across Central and Eastern Alaska, and even Southeast Alaska. Fortymile was the first town to grow to over a thousand people by the mid-1890s (Buzzell 2003), and in 1887 the Stewart River post was deserted. Some prospectors that did not find easy success in Fortymile returned to the Stewart and continued work in the area. In 1890, Harper re-established a trading post at the site of the old HBC post at Selkirk as interest in the area grows. This was followed by Jack Dalton who developed a series of existing First Nation trails from tide water at Haines Alaska, into Fort Selkirk.

Then, on August 16, 1896, George Carmack, Skookum Jim, and Tagish Charlie discovered a very rich claim on Bonanza Creek, a tributary to the Klondike River near Dawson. This discovery sparked one of the largest gold rushes in history.

It would take almost a year for the news of the Klondike gold fields to spread south, even to places relatively close by in southeast Alaska. Most of the prospectors and traders in the Alaskan and Yukon interior had already converged on the Dawson area during the winter and spring, and supplies ran dangerously low. That would quickly change in the summer of 1897 and spring of 1898 as new towns and supply posts sprang up along the Gold Rush routes to cash in on the increased demand.

The population of Dawson City grew very fast and in 1898 reached a peak of over 30,000. However, the boom period did not last long, and the vast majority of population moved on very quickly with the news of other discoveries and hopes of other bonanzas. The Gold Rush period saw greatly increased steamer traffic on the entire Yukon River drainage basin and across the interior. Just prior to the Gold Rush there were only a few steamers, while at its peak there would be hundreds of vessels working the rivers. These shallow draft steamers were supported by a network of wood camps, shipyards, and a large workforce which kept the river traffic moving. This network provided the infrastructure backbone for trading posts, fish camps, missionaries, and mail routes, while meeting the needs of the growing number of prospectors and traders.

The boom period around Dawson did not last long and when gold was discovered on Duncan Creek in 1901, the area was the focus of enough people that a Mining District was created with an office at the mouth of Duncan Creek on the Mayo River. This boom was likely responsible for bringing in additional prospecting around Mayo Lake (Mayo Lake had been named by Alexander MacDonald in 1887 after Captain Alfred Mayo).

At its peak the placer mining on Duncan Creek drove the establishment of a trading post and trail head named Gordon Landing near the confluence of Janet Creek and the Stewart River. From there a two-mile trail up Janet Creek to Janet Lake allowed people and goods to travel further north along Davidson Creek to what was called Mayo Bridge which was close to where Duncan Creek drained into the Mayo River. People could take one of two trails to Mayo Bridge from the southeast end of Janet Lake. These trails are roughly mapped on the 1905 Geological Survey of Canada map of a portion of the Duncan Creek Mining District (Mayo Historical Society 1999:32). One trail continued north crossing north-northeast to Davidson Creek then down Davison Creek almost to the Mayo River then west along the south side to close the Duncan Creek confluence. The second trail followed along the north side of Janet Lake to about the midway point on the

north shore of the lake then turned approximately due north to the Mayo River, near Duncan Creek confluence (near what is believed to be "Old Town"). The early communities are mapped in E. L. Bleiler's map showing creeks and rivers in the Mayo Area (Mayo Historical Society 1999:34). Of interest is the mapped community of Mayo Bridge shown west (or upstream on Mayo River) of the Duncan River confluence. This Mayo Bridge area may overlap with what some informants call "Old Town" (downstream of the current bridge over the Mayo River to Davidson Creek).

The travel route from Gordon Landing on the Stewart River up to Duncan Creek was used primarily from 1902 till 1903 when the townsite of Mayo was established at the mouth of the Mayo River. In this short period the entire length of Duncan Creek from its mouth to its headwaters had been staked.

In 1902, Frank Brain and Percival Nash, accompanied by a group of families from Fort Good Hope, established a post at the confluence of the Stewart and Lansing Rivers (Mayo Historical Society 1999). In 1902 a winter road was also built to connect Whitehorse and Dawson, and in 1903 the community of Mayo Landing was established at the confluence of the Mayo and Stewart Rivers. Mayo Landing would later be known as Mayo following improved road access which replaced the sternwheeler traffic. By 1903 several of the creeks draining into Mayo Lake had been prospected and worked including Steep, Ledge, Cascade, Anderson, Gull, and Edmonton Creeks. Also in 1903, Jacob Davidson stated "Hell's Gate" claim, found galena near Duncan Creek, and was the first to record the silver-lead ore and stake a silver claim in the area.

In 1904, an overland trail was built from Dawson to Duncan Creek which linked a good wagon road from Duncan Creek to Mayo Landing. In 1912, Harry McWhorter along with Grant Huffman and Jack Alverson returned to the area previously stated by Jacob Davidson known as the Silver King. In 1913 Huffman staked the "Mabel" claim after his daughter and Alverson staked the "Webfoot" claim. By 1914, after significant efforts, Huffman and Alverson netted roughly five thousand dollars profit each (based on a lease agreement with McWhorter) and the area began its long standing and continuing association with galena. In 1918, Grant Huffman built a farmstead on the Mayo Canyon associated with the road to Keno and in the 1920s was a market hunter for the Treadwell Yukon Company (Mayo Historical Society 1999). He was said to have supplemented his hunting with produce from his farmstead including cabbages, carrots, and potatoes. He was known to have built two cabins in the Silver King area and two others near the Mayo Canyon, the remains of which were identified during past fieldwork.

Following the success of Huffman and Alverson, McWhorter cancelled the lease and optioned the property to Thomas Aitken who in turn purchased the property for $75,000. Over the winter of 1916-1917, with the help of a large crew Aitken mined approximately 1,386 tons of high grade silver. He then optioned the property to his partners and left them with little high grade remaining. Overall Aitken was said to have earned roughly $500,000 from Silver King (Mayo Historical Society 1999).

In July 1919, Alfred Schellinger staked the Keno claim on Keno Hill and over that winter more than 500 additional claims were staked. Another boom began in what would be become associated with the community of Elsa. However, unlike other quickly lived communities, this Mayo-Elsa-Keno area provided jobs and revenue that carried the Territory between World War I and World War II.

Further detail specific to the history of the Blende Property is presented in the following section.

4.2.3.2 Blende Property Exploration History[2]

Mineralization was originally noted in this vicinity by the Geological Survey of Canada in 1961 and was first staked as Will claims 1-60 (Y97990) in July 1975 by Cyprus Anvil Mining Corporation, which carried out geological mapping, geochemical silt and soil sampling and prospecting later in the year.

The are was restaked as Blende claims 1-15 (YA43524) in March 1981 by Archer, Cathro and Associates (1981) Limited, which carried out geochemical rock sampling in 1981, geochemical rock sampling, prospecting, and air photo interpretation in 1982, and hand trenching and geochemical rock sampling in 1984. The property was subsequently optioned by Canadian Nickel Company Ltd., which staked Blende claims 16-88 (YA77655) to surround the existing claims in October 1984 and carried out geological mapping and prospecting of the newly staked claims in 1985 before dropping the option.

In 1986, the Blende claims 1-15 were sold to NDU Resources Ltd. which carried out prospecting, hand trenching, and drilled 3 holes (718 m), before staking Blende claims 16-56 (YB02529) to the north and east in July 1988 and Blende claims 57-66 (YB02700) to the west in August 1988. NDU staked Blende claims 67-104 (YB03051) to the east and north in June 1989 and Blende claims 105-122 (YB03089) to the north and west in July 1989, and carried out geological mapping, grid

[2] Information presented in this section is adapted from Blind Creek Resources' Ltd. website (accessed May 29, 2018 at http://www.blindcreekresources.com/s/Blende.asp?ReportID=447734) and Yukon Minfile 106D 064 (http://data.geology.gov.yk.ca/Occurrence/13934)

geochemical soil sampling, road construction, and geophysical magnetometer and VLF-EM surveying.

Billiton Metals Canada Inc. optioned the property in October 1989 and the following year carried out geological mapping, baseline water quality testing, road construction, drilled 15 holes (3,659.7 m) and staked Blende claims 123-128, 1fr-28fr (YB03863) in August 1990. Billiton's 1991 work included completion of the soil geochemical and geophysical coverage, drill-testing of the deposit over a 3.3 km strike length, preliminary metallurgical testing, and the staking of Blende claims 129-169 (YB18179) in June 1991 and Zinc claims 1-48 (YB18553) in July 1991. The 1991 drilling consisted of 62 holes (11,525.1 m), including 15 holes in the west zone, 34 holes in the east zone, and 13 holes in the central area between the east and west zones.

In 1994 NDU drilled seven holes (596 m) in an area of relatively high grade surface exposures located at the base of a cliff immediately west of the West Zone reserve block. Eagle Plains Resources Ltd. restaked the occurrence as Mix claims 1-16 (YC09986) in March 2002 and carried out a one day property examination to assess the property's infrastructure. Eagle Plains staked Trix claims 1-46 (YC11723) to surround the Mix claims in Apr/2004, announced that it had executed an option agreement with Shoshone Silver Mining Company whereby Shoshone could earn a 60% interest in the Blende deposit in May 2004, and staked Trix claims 47-56 (YC32293) contiguously to the southeast in August 2004. Shoshone released a technical report which verified the resource calculations originally prepared in 1991 by Billiton Metals Canada Ltd. Shoshone terminated its option in May 2005.

In August 2005, Eagle Plains optioned the property to Blind Creek Resources Ltd. which carried out an exploration program consisting of re-logging historical diamond drill core, a ground-based gravity survey, geological mapping, geochemical sampling, and prospecting. In March 2006 Blind Creek constructed a winter road into the property. The company then carried out geological mapping, geochemical sampling, prospecting, and a diamond drill program consisting of 23 holes (4,233 m). In 2007 the company drilled an addition 13 diamond drill holes (3,210 m) and carried out further geological mapping, geochemical sampling, and prospecting programs. In 2008, the company completed seven diamond drill holes (1,047 m) on the property. In 2009, Blind Creek Resources finalized the purchasing agreement for the Blende from Eagle Plains Resources and assumed 100% interest in the property. Additional metallurgical testing was conducted by Blind Creek Resources Ltd. in 2017.

4.2.4 Modern First Nations

The study area falls within the traditional territory of the Na-Cho Nyak Dun First Nation (NND). The NND First Nation is part of the Northern Tutchone language and culture group. In the past, the Tutchone peoples were highly mobile, travelling in small groups in order to exploit the greatest number of resources. They would modify their movements depending on the patterns of large game animals and fish, or in later years to trade their furs with Westerners. In the summer, small domestic units gathered together to catch fish so that they could dry and store it for the winter months. By mid-summer several family groups moved upland together in order to kill large game mammals that they would dry and store in caches scattered in a variety of areas. From there some units moved away independently during the coldest months to trap and live off of the cached foods. The leanest months were March and April. In spring, several units often came together at this point to catch spawning whitefish or trap muskrat and beaver. May was the most plentiful month, with migrating waterfowl, fat ground squirrels, larger and more abundant fish, as well as the arrival of the Coastal Tlingit traders (McClellan 1981).

The principal ethnographic descriptions of the Tutchone are available in Cruikshank (1974, 1975), Johnson and Raup (1964), McClellan (1950, 1964, 1970a, 1970b, 1975), and Tanner (1966). Additional information on camp and village locations can be found in Schwatka (1885). Although villages were not inhabited year round, people would return to good fishing and/or hunting spots year after year. This would eventually change with the influence of Westerners. Watercraft were constructed for use, however during the summer months Tutchone people preferred to walk overland, rather than brave the sudden winds on the large lakes or the treacherous river rapids. Boats were not the preferred method of transport.

The NND First Nation remained somewhat isolated until the discovery of gold in the area in 1883 (Mayo Historical Society 1999). The NND are known to have used many traditional camps, lookout sites, hunting areas, berry patches, and trails in the larger project area with extensive use of rivers. McClellan (1981) summarized the common seasonal activities beginning in the spring with grayling fishing following spring break up. The NND people remained almost completely isolated from non-First Nation people, except for a few explorers passing through, until miners set up a supply post along the McQuesten River in 1886. The supply post soon turned into a village and from then on permanent camps and villages have existed in the larger area surrounding Mayo Lake. During the Duncan Creek gold rush, a trading post called Gordon Landing was established near the confluence of Janet Creek and the Stewart River. From there a trail allowed people to travel north partially along Davidson Creek to the confluence of Duncan Creek on the Mayo River. The Town of Mayo was established in 1903 and the people of

McQuesten and a few other small encampments moved there or to the “Old Village” just outside of town (Mayo Historical Society 1999). This village made it possible for people to receive a western education, live close to Mayo, and continue their preferred way of life and cultural celebrations. Eventually the “Old Village” was abandoned when in 1958 the local health officials determined the drinking water was polluted and the NND were requested to move to the Town of Mayo. The First Nations people in the Mayo area officially chose the name “Na-Cho Nyak Dun” in 1987 which means “Big River People” in reference to the now named Stewart River.

4.2.5 Previous Heritage Investigations

Consultation with staff at Yukon Heritage revealed that no heritage resource assessment work has investigated the study area. As such, no archaeological or Yukon Historic Sites Inventory (YHSI) sites have been previously recorded within the study area.

5.0 RESULTS

This section presents the results of the HROA analysis. These results are divided into three categories: areas of elevated potential for previously undocumented heritage resource sites (Section 5.1), previously recorded archaeological sites (Section 5.2), previously recorded Historic Period sites (Section 5.3). Potential for CMTs was not specifically assessed in this HROA due to a lack of available vegetation inventory data. CMT potential is primarily identified through the presence or absence of old growth pine-leading stands, with the presence of such stands being interpreted as a potential elevating factor. Should old growth pine-leading stands of forest be encountered during any future field assessments, crews should be vigilant for CMTs. If pine-leading stands are not encountered, minor potential for certain types of CMT, such as blazes, trap trees, and historic claim markers, may still exist in stands of spruce and/or aspen.

It should be noted that although all efforts were made during the production of this report to make its assessment of heritage resource potential as comprehensive and accurate as possible, the methods employed provide relatively coarse resolution. As such, small undocumented areas of heritage resource potential may be present within the study area that were not captured by this overview. Moreover, there is always a possibility that chance finds of heritage resources will be made in areas of low perceived potential. If such areas or finds are encountered at any point during development, all work in the find area should cease and staff at the Yukon Government Heritage Resources Unit should be contacted immediately.

5.1 Areas of Elevated Potential for Previously Undocumented Heritage Resource Sites

This HROA identified multiple areas of elevated heritage potential for surface/subsurface heritage resource sites. Surface/subsurface site potential areas are primarily associated with high elevation ridgelines/tors, and knolls and terraces in low-lying valley bottoms; especially those valley bottoms associated with watercourses. Maps showing the identified areas of elevated heritage resource potential are presented in Appendix A, and an assessment of the potential for encountering each of the eleven site types outlined in Section 3.2 of this report is presented in Table 1.

5.2 Previously Recorded Archaeological Sites

Consultation with staff at Yukon Heritage revealed that no archaeological sites have been previously recorded within the study area. However, this lack of known sites most likely a by-product of the lack of previous heritage resource assessment work within the study area than a true lack of archaeological sites.

Site Type	Potential	Comments
Permanent/ Long-Term Habitation	Low	Permanent/long-term habitation sites tend to be located near significant landscape features that provide optimal places for campsites such as major rivers and lakes. Such features are absent within the study area.
Temporary Habitation/ Subsistence	High	The probability of finding temporary habitation sites is high within the study area. The most likely temporary habitation sites to be encountered are those related to subsistence activities. They are most likely to be located on well-drained terraces above creeks and prominent landforms in well-drained upland areas (e.g. knolls, ridgelines, and tors).
Quarry Sites	Moderate	Review of geological bedrock mapping shows that the study area is located primarily a sedimentary (carbonate/clastic) domain, with small plutonic pockets. Common rock types include limestone, dolostone, siltstone, mudstone, sandstone, shale, chert, and quartzite. siltstone, mudstone, chert, and quartzite are commonly used in the production of stone tools, but the suitability (quality) of these rocks within the study area is unknown.
Rock Art Sites	Low	The potential for rock art is considered to be low.
Fishing Sites	Low	The potential for finding fishing sites within the study area is low due to fish natural barriers in the watercourses flowing through the study area (e.g. steep grades and high velocities).
Human Remains	Low	Organic preservation conditions in the study area is not considered to be favorable for the preservation of undocumented human remains.
Culturally Modified Trees	Unknown	CMT potential is primarily identified through the presence or absence of old growth pine-leading stands, with the presence of such stands being interpreted as a potential elevating factor. Should old growth pine-leading stands of forest be encountered during any future field assessments, crews should be vigilant for CMTs. If pine-leading stands are not encountered, minor potential for certain types of CMT, such as blazes, trap trees, and historic claim markers, may still exist in stands of spruce and/or aspen.
Trails	Low	No previously documented heritage trails are present within the study area. However, some valleys and low passes may have served as travel corridors for people moving between the Beaver and Wind Rivers.
Historic	Low	No YHSI registered sites have been documented within the study area. Moreover, documented prospecting activity did not begin within the study area until the 1990s. As such the potential for historic sites is considered to be low.

Table 1: Assessment of the probability of encountering predicted site types.

Site Type	Potential	Comments
Isolated Finds	High	The potential for isolated finds exists throughout the study area. If other site types are present, the probability of identifying additional associated isolated finds in their vicinity will be elevated.
Palaeonto-logical Sites	Moderate	The study area is primarily located within a sedimentary geological domain. As such, potential for pre-Pleistocene palaeontological remains is present. Holocene remains may also be present in placer deposits.

Table 1: Assessment of the probability of encountering predicted site types (continued).

5.3 Previously Documented Historic Sites

Consultation with staff at Yukon Heritage revealed that no historic sites have been previously recorded within the study area. However, the study area has never been assessed for heritage resources, so undocumented historic sites may be present.

6.0 SUMMARY AND RECOMMENDATIONS

The goal of this study was to identify areas of archaeological potential within the Blende Property Class 3 Exploration area. This was accomplished through a detailed review of the physical/environmental setting, cultural/historical setting, previous heritage studies/identified sites within the study area, topographic maps, geological maps, and aerial photographs.

Through this review, multiple areas of elevated heritage potential for surface/subsurface heritage resource sites were identified. Surface/subsurface site potential areas are primarily associated with high elevation ridgelines/tors, and knolls and terraces in low-lying valley bottoms; especially those valley bottoms associated with watercourses. There are no known heritage resource sites within the study area. Potential for CMTs was not specifically assessed in this HROA due to a lack of available vegetation inventory data. Should old growth pine-leading stands of forest be encountered during any future field assessments, crews should be vigilant for CMTs. If pine-leading stands are not encountered, minor potential for certain types of CMT, such as blazes, trap trees, and Historic claim markers, may still exist in stands of spruce and/or aspen.

Heritage resource management recommendations for the Blende Property Class 3 Exploration area directly follow the assessment of heritage resource potential discussed in Section 5.0. These recommendations include:

1. Heritage Resource Impact Assessments (HRIAs) are recommended for all lands with elevated heritage resource potential, as illustrated in the potential areas identified in this study, before any development be approved to proceed within them. Should additional areas of potential be identified within a proposed development area during HRIA work, they should be assessed following the same standards recommended for the areas of potential identified in this report. HRIA work should be conducted under a Class 2 archaeological research permit issued by the Heritage Resources Unit of Yukon Tourism and Culture. HRIAs should, at minimum, include provisions for surficial survey and subsurface testing within the boundaries of the HRIA area identified in this document and any associated areas of potential that are identified in the field which are at risk of being impacted by proposed developments. Additional recommendations may be made following an HRIA depending on the results obtained.

2. No specific recommendations are made in regard to CMTs due to a lack of available vegetation inventory data. However, field crews should be vigilant for CMTs in all forested areas.

3. No Further Work (NFW) is recommended in areas identified as having low heritage resource potential prior to allowing development. However, development should only be allowed to proceed on the condition that all chance finds of heritage resource materials be reported immediately to the Heritage Resources Unit of Yukon Tourism and Culture, and that all work at the location of a chance find cease until the Heritage Resources Unit is able to assess the finds and issue a response (clearance to proceed or requirements for avoidance/further mitigative work).

It is also recommended that this HROA report be submitted to the Na-Cho Nyak Dun First Nation for review and consultation with regard to traditional knowledge/traditional land use. Moreover, if further heritage resource work is conducted within the Blende Property Class 3 Exploration area, it is recommended that representatives from the Na-Cho Nyak Dun First Nation be given opportunity to participate in any field investigations.

Should future HRIA work be conducted, all heritage resource sites identified, whether new or revisited, should be recorded as per the requirements outlined in the Yukon Archaeological Sites Regulation (O.I.C. 2003/73). Once recorded/revisited, specific heritage resource management recommendations should be made for each site that reflect the potential impacts associated with the proposed development that spurred the HRIA.

Lastly, although all efforts were made during the production of this report to make its assessment of heritage resource potential as comprehensive and accurate as possible, the methods employed provide relatively coarse resolution. As such, small undocumented areas of heritage resource potential may be present within the study area. Moreover, there is always a possibility that chance finds of heritage resources will be made in areas of low perceived potential. The recommendations contained herein are intended to be used for planning purposes. Should intensive development be proposed for areas within the Blende Property Class 3 Exploration area in the future, further assessment, focused on the specific footprint of the proposed development is recommended.

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APPENDIX A: HROA Mapping

FIGURE 2 HERITAGE RESOURCES OVERVIEW ASSESSMENT

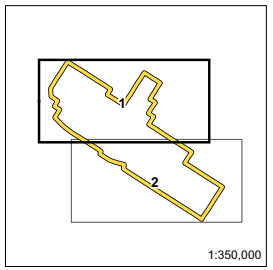
BLEND PROPERTY MAP 1 OF 2

1:30,000 (at current document size of 11" x 17")

0 500 1,000 1,500m

NAD 1983 UTM Zone 8N

Disclaimer:
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Base layers were obtained from the National Topographic Database (NTDB), and GeoYukon.



Base Features
- Contour (100ft)
- Watercourse
- First Nation Settlement Land
- Waterbody

Assessment Features
- Study Area
- Area of Potiental (AOP)

Blind Creek

ECOFOR

Ecofor Consulting Ltd. Date: June 1, 2018 (JM)

FIGURE 2 HERITAGE RESOURCES OVERVIEW ASSESSMENT

BLEND PROPERTY MAP 2 OF 2

1:30,000 (at current document size of 11" x 17")

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NAD 1983 UTM Zone 8N

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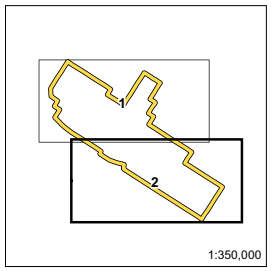

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- Watercourse
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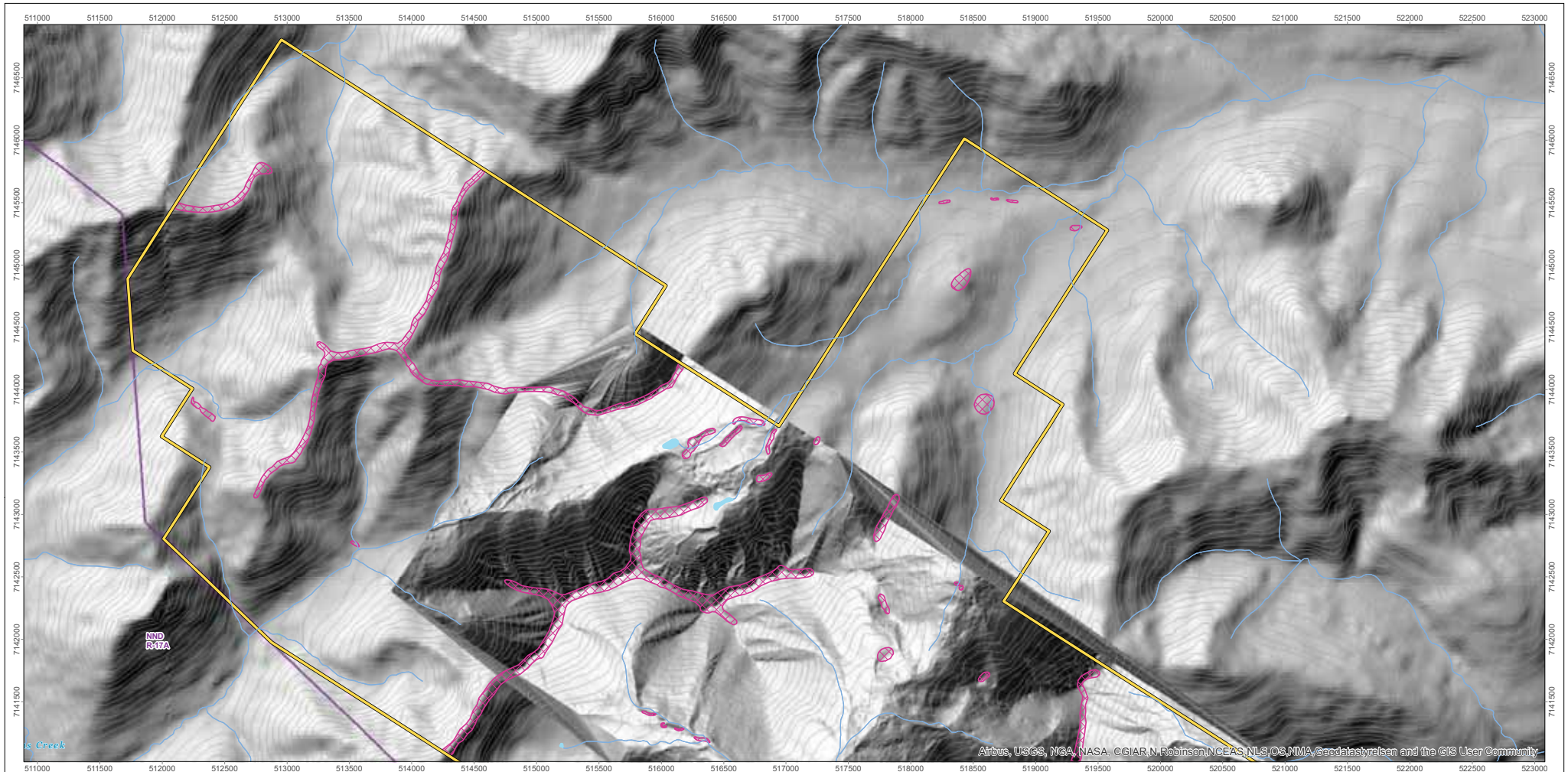
- Waterbody

Assessment Features
- Study Area
- Area of Potiental (AOP)

Blind Creek

ECOFOR

Ecofor Consulting Ltd. Date: June 1, 2018 (JM)



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BLEND PROPERTY MAP 1 OF 2

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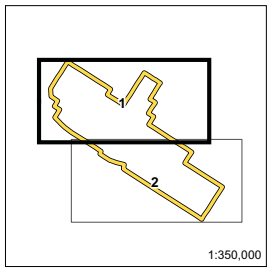

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Blind Creek

ECOFOR

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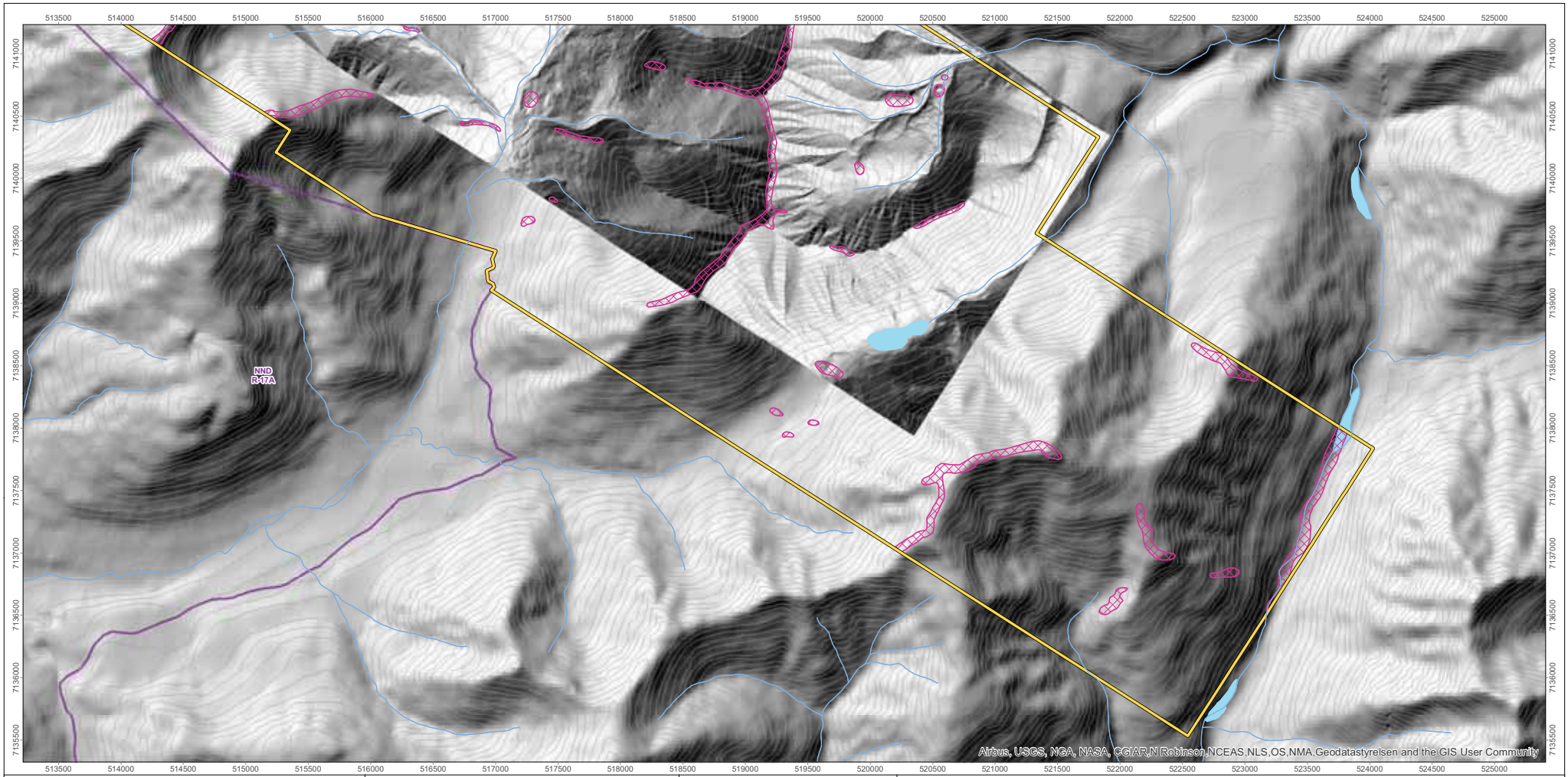

FIGURE 3 HERITAGE RESOURCES OVERVIEW ASSESSMENT

BLEND PROPERTY MAP 2 OF 2

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NAD 1983 UTM Zone 8N

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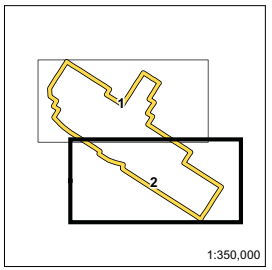

Base Features
- Contour (100ft)
- Watercourse
- First Nation Settlement Land
- Waterbody

Assessment Features
- Study Area
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Blind Creek

ECOFOR

Ecofor Consulting Ltd. Date: June 1, 2018 (JM)

APPENDIX B: Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites in the Yukon

Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites in the Yukon

With approvals as of August 1999

This document was prepared pursuant to provisions of
Yukon First Nation Final Agreements
and the Yukon Transboundary Agreement with the Gwich'in Tribal Council

Yukon
Tourism
Heritage Branch

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List of Figures and Appendices

Introduction and Background

The treatment of every burial site requires respect. Legislation of various types protects burial sites and cemeteries from being disturbed. Government agencies and First Nations keep and consult records of known sites so that land use plans or proposals can avoid such sites.

There are many historic and First Nation graves in the Yukon however which are no longer marked and which may be disturbed accidentally through land use or development. Other sites may be disturbed by natural forces, such as erosion, leading to the exposure of human remains.

As more people travel in backcountry areas, for work or pleasure, it is expected that the number of such discoveries may increase. It is important therefore to have guidelines for reporting, investigating and managing such sites in a coordinated and effective manner, to give them proper respect.

Yukon First Nation (YFN) Final Agreements (Section 13.9.0) and the transboundary agreement with the Gwich'in Tribal Council (Tetlit Gwich'in) (Section 9.5) require the development of procedures to protect and manage YFN or TG burial sites, and specify certain actions when such sites are discovered.

Consistent with these obligations, these guidelines were developed at two workshops held jointly in March and October l998, involving First Nation Elders, heritage and implementation staff, the RCMP, Coroner and other Yukon and federal government officials.

Purpose

To provide direction on the reporting, identification, treatment and disposition of human remains found outside of recognized cemeteries in the Yukon, to ensure these remains are respected and protected consistent with legislation and Yukon land claims agreements.

Scope and Application

These guidelines apply to anyone who discovers human remains or grave goods outside of recognized cemeteries in the Yukon, and to the Yukon, Federal and First Nation government officials involved in protecting and caring for such sites.

The guidelines reflect existing practices in many ways. They do not replace legislation or regulations protecting burial sites, but are intended to integrate obligations contained in Yukon land claim agreements with land use permitting regimes and the Development Assessment Process . These guidelines may apply on Settlement Lands at the discretion of each First Nation. Government approval is required for management plans for sites on non-Settlement Land.

Existing known burial sites that are marked or otherwise recorded are protected by existing legislation. Management plans for these sites may be developed on a case by case basis.

Burial sites discovered within the boundaries of a designated heritage site may be subject to the management plan for that site.

The guidelines do not apply within National Historic Sites or National Parks. Parks Canada has its own guidelines respecting burial sites and human remains.

Evaluation and Revision of Guidelines

The implementation of these guidelines will be evaluated as necessary to ensure that they are fulfilling their purpose.

GUIDING PRINCIPLES

All human remains, and items found at graves (grave offerings, markers etc.) shall be treated with respect and dignity regardless of their cultural affiliation.

Actions taken following the discovery of sites will be consistent with Yukon and transboundary land claim agreement provisions respecting Yukon First Nation and Tetlit Gwich'in Burial Sites.

Each discovery will be handled on a case by case basis in consultation with the affected parties, in a coordinated and timely manner.

Definitions - see Appendix 1
References - see Appendix 2
Land claims provisions - see Appendix 3

Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites

See also Figure 1.

These guidelines cover five steps: discovery and notification; site protection and investigation; investigation and reporting; and site disposition or management agreements. A final step, arbitration, is provided for where no disposition agreement is reached.

1. Discovery and Notification

If human burial remains are accidentally discovered the following guidelines apply:

a) The finder will immediately cease any further activity at the site and report the site to the RCMP.

b) *If the finder is operating under a land use licence or permit*, the site must also be reported immediately to the land manager/permitting authority, as set out on the permit. The land manager/permitting authority shall confirm that the site is reported to the RCMP.

c) Based on the information it receives, the RCMP will notify: 1) the Coroner's office if the site is of a forensic or criminal nature; or 2) both the First Nation(s) in whose Traditional Territory the Site is located and the Heritage Branch, if the site is a suspected historic or First Nation burial site.

2. Site Protection and Identification

a) the land manager/permitting authority shall take reasonable measures to protect the site from environmental factors and any form of unauthorized interference or disturbance.

b) based on the evidence reported at the scene, the RCMP/Coroner will investigate the site and make a preliminary determination as to the nature of the remains.

c) *if the site is of a criminal or forensic nature* (potential crime scene or missing person), then the Coroner's office and police will assume authority over the site/remains.

d) Heritage Branch may recommend that an archaeologist assist police or coroner in the preliminary assessment of the site.

e) *If the site is **not** of police/coroner interest* then the Director, Heritage Branch, the affected First Nation(s) and the land manager will assume interim responsibility for protection and investigation of the site. If it's a suspected First Nation site, the Heritage Branch and First Nation would assume this responsibility.

f) the Director, Heritage Branch, the affected First Nation(s) and land manager shall take reasonable measures to restrict access and ensure that the human remains and any grave offerings are not further disturbed pending the investigation and identification of the remains. The RCMP may be consulted about protecting the site.

Figure 1

Guidelines respecting the Discovery of Human Remains and First Nation* Burial Sites

2. Site Protection and Investigation
-protection/no disturbance or access

If not a criminal matter, Heritage Branch takes lead with affected FN or transboundary group. RCMP may assist if requested.

- *First Nation, Minister*
- *permitting authority - person may continue activity*

with FN consent. If consent is not provided, proceed according to terms and conditions of arbitrator(UFA 26.7.0 TG Ch.18)

or

- *rebury, relocate or remove remains*
- *restrict/specify access if necessary and possible*
- *may designate existing or new site as burial site/cemetery or heritage site*
- *management plan (jointly prepared/approved by FN and Government on Non-Settlement Lands)*

Maps, inventories, reports, plans, agreements.

**the Tetlit Gwich'in will be involved in steps to protect and manage Tetlit Gwich'in burial sites discovered within their Primary Use Area (Fort McPherson Group Trapping area within the Peel River Basin).*

g) Where human remains are at risk of being destroyed or damaged, the Minister of Tourism for Heritage may issue a stop work order prohibiting any further activities and may make an agreement with the First Nation or the Tetlit Gwich'in or land owner or user for any investigation, excavation, examination and preservation and removal of the remains, consistent with land claim provisions. (s.*72, Historic Resources Act- This would address concerns about unknown remains.)*

Existing site inventories, land use records, affected First Nations and community elders, and military authorities, should be consulted as soon as possible about possible identification of the remains.

Some examination of the site/remains may be required to determine its cultural affiliation and age, and whether or not the site is modern or historic.

3. Investigation and Reporting

a) The Heritage Branch/land manager will direct an archaeologist or qualified examiner to carry out an investigation under any required permits, in consultation with the affected First Nation and other affected parties, to make an initial report citing, if possible*, the cultural affiliation of the human remains.

b) Within a reasonable time to be specified by the Minister, and the affected First Nation(s), the archaeologist or qualified examiner shall deliver a written report and any notification not yet made, to:
- the Minister, and the affected First Nation(s) if appropriate;
- the Director of the Heritage Branch;
- the land manager/permitting authority;
- any other representative of the interred, if known.

c) The written report shall attempt *to identify:
- the representative group of the interred;
- the geographic boundaries of the site;
- the grave offerings or other heritage resources that may be associated with the remains or the site.

d) The archaeologist or examiner may, with the agreement of the proper authority and the representative of the interred, if known, remove all or part of the human remains for further analysis or for temporary custody where the remains may otherwise be at risk.

e) Any exhumation, examination and reburial of human remains from a YFN/TG burial site shall be at the discretion of the affected YFN/TG; and if ordered by an arbitrator pursuant to land claim provisions, will be done or supervised by the YFN or Tetlit Gwich'in.

*it is often difficult to determine the cultural ancestry or affiliation of fragmentary human remains

3.1 Reporting

a) If the site is determined to be a Yukon First Nation Burial Site, or Tetlit Gwich'in burial site, the appropriate representative will be contacted in writing to provide further direction on the disposition of the remains. *

b) A person carrying out Government or First Nation authorized activity where a First Nation site is discovered can continue that activity with the consent of the First Nation in whose Traditional Territory the Yukon site is located. The consent of the Tetlit Gwich'in is required if the site is in the Tetlit Gwich'in primary use area. If consent is denied, the person can seek terms and conditions from an arbitrator about continuing the activity (see Section 5).

c) If after the final report, the human remains are found to be those of a different aboriginal people than those mentioned previously, the proper authority of that group shall be notified in order that they may assume the role of the representative.

d) Where a site is **not** found to be a Yukon First Nation or Tetlit Gwich'in burial site, or a military or mariner's burial site, the Director, Heritage Branch may publish notice of the discovery in a newspaper or other public notice seeking information on the remains.

4. Site Disposition Agreement (Management Plan)

4.1 When the site or remains are identified

a) The site shall not be disturbed and the Director, Heritage Branch or First Nation if on Settlement Land, shall initiate discussions towards entering into a site disposition agreement with the representative of the interred.

b) If the site is a Yukon First Nation Burial Site or a Tetlit Gwich'in burial site on non-settlement land, there must be joint approval of the site management plan by the Yukon First Nation in whose Traditional Territory the site is located and the Government. If the site is a Tetlit Gwich'in burial site located off Tetlit Gwich'in land but in the primary use area, the management plan must be jointly approved by the Tetlit Gwich'in and the Government.

c) Decisions regarding reburial, relocation or other disposition should be determined on a case by case basis in consultation with those concerned and in a timely manner.

Site disposition agreements shall determine such things as: *1.* the interim care of the human remains*;*

2. the scope and extent of analysis to be performed on the human remains, if any;
3. the exact location of the place where the human remains are to remain or to be interred;
4. the style and manner of disinterment, if applicable;
5. the style and manner of reinterment, if applicable;
6. the time period in which disinterment and reinterment is to take place;
7. the procedures relating to, and the final disposition of any grave offerings discovered with the human remains and any additional analysis of them;
8. the provision for future maintenance of the cemetery or site where the human remains are to be located;
9. access to the site and ways to prevent disturbance;
10. any other issue agreed upon.

*it is often difficult to determine the cultural ancestry or affiliation of fragmentary human remains

4.2 When no representative is identified or no disposition is specified:

If disposition is not specified by a representative, or the remains are not claimed or no affiliation is established within a reasonable time, the Minister, or First Nation if on Settlement Land, shall with the necessary permits and approvals provide for the following disposition:

a) cover and leave the remains where they were found and have the site recorded as a burial site/ heritage site, if on land suitable for a burial site; or
b) have the remains disinterred and reinterred in the nearest appropriate cemetery; or
c) remove the remains from the site for analysis and may have them reinterred in a recognized cemetery or;
d) may act as the temporary repository of the remains.

(Where the remains were found on Settlement Land but are not considered First Nations remains, the Government may remove the remains in consultation with the First Nation.)

5. Arbitration

a) If no disposition agreement or management plan is reached within a reasonable time the matter may be referred to arbitration for settlement. If this matter concerns a Yukon First Nation Burial Site, this shall be done pursuant to 26.7.0 of the UFA; or Chapter 18, if the matter concerns a Tetlit Gwich'in site in the primary use area.

6. Records

a) A record of the site and a report of the discovery and disposition plan shall by kept by the Government and the affected First Nation(s)/representative for future reference to protect the site.

b) Access to information about discovered sites will be addressed in any site management plan developed under these guidelines, and will be protected under the *Access to Information and Protection of Privacy Act*, and the *Historic Resources Act* or *any similar First Nations legislation.*

Appendix 1

Definitions

burial site

the location of any human grave or remains that have been interred, cremated or otherwise placed, and include ossuaries, single burials, multiple burials; rock cairns; cave or cache burials etc. not situated within a cemetery

First Nation Burial Site

This refers to a Yukon First Nation Burial Site or a Tetlit Gwich'in burial site, which is defined as: a place outside a recognized cemetery where the remains of a cultural ancestor of a Yukon Indian Person (or the Tetlit Gwich'in) have been interred, cremated or otherwise placed."

[from the Definitions section of the *Umbrella Final Agreement for the Council for Yukon Indians (now Council of Yukon First Nations) and the Transboundary Agreement between Canada and the Gwich'in Tribal Council*]

human remains

mean the remains of a dead human body and include partial skeletons, bones, cremated remains and complete human bodies that are found outside a recognized cemetery" *(adapted from Historic Resources Act)*

grave offering

any object or objects associated with the human remains which may reflect the religious practices, customs or belief system of the interred.

historic

under the Historic Resources Act this generally means something older than 45 years.

land manager

Agency responsible for the administration of the land on which the site is located. For example, currently territorial parks are managed by Yukon Parks and Outdoor Recreation; gravel pits and rural airports are administered by Community and Transportation Services. Settlement Land is administered by the First Nation. Private land is administered by the land owner. (Burial sites may not be disturbed on any land without proper authorization.)

Recognized cemetery

a defined area of land that is set aside for the burial of human bodies.

representative

means a descendant of the interred or of the person whose remains are found, or where no descendant survives or is identified, an official representative of the appropriate First Nation in whose Traditional Territory the burial site is located or the closest culturally affiliated group, religious denomination, military or marine authority as evidenced by the location or mode of burial.

Where no representative can be determined the Minister shall act as the representative on Non-Settlement Lands and on Settlement Lands at the discretion and with the consent of the First Nation

representative group

means the appropriate Yukon First Nation or the closest culturally affiliated group, religious denomination, military or marine authority as evidenced by mode and style of burial which is willing to act as a representative.

Site disposition agreement

means a written agreement to be reached between the Director of the Heritage Branch and the representative of the interred regarding the disposition of the remains, including any disinterment and reinterment, and management plan

Management plan

means a plan to identify the roles of the representative, Government and land owner or manager respecting the care and protection of the site, including a consideration of site records, site access, and ways to protect a site from disturbance.

Appendix 2

References

The following include requirements to protect burial sites and were considered in the development of these Guidelines.

Umbrella and Yukon First Nation Final Agreements, Sections 13.9.0 and 26.7.0, and Implementation Plans
Yukon Transboundary Agreement (Gwich'in Tribal Council), Sections 9 and 18, and Implementation Plan
Yukon Historic Resources Act, Part 6
Criminal Code
Cemeteries and Burial Sites Act
Coroner's Act
Territorial Land Use Regulations
Yukon Archaeological Sites Regulations
Yukon Quartz Mining Act, and Regulations
Yukon Placer Mining Act, and Regulations
Yukon Surface Rights Act
Vital Statistics Act

Appendix 3

Land Claims Provisions Relating to Burial Sites

13.9.0 Yukon First Nation Burial Sites*

13.9.1 Government and Yukon First Nations shall each establish procedures to manage and protect Yukon First Nation Burial Sites which shall:

13.9.1.1 restrict access to Yukon First Nation Burial Sites to preserve the dignity of the Yukon First Nation Burial Sites;

13.9.1.2 where the Yukon First Nation Burial Site is on Non-Settlement Land, require the joint approval of Government and the Yukon First Nation in whose Traditional Territory the Yukon First Nation Burial Site is located for any management plans for the Yukon First Nation Burial Site; and

13.9.1.3 provide that, subject to 13.9.2, where a Yukon First Nation Burial Site is discovered, the Yukon First Nation in whose Traditional Territory the Yukon First Nation Burial Site is located shall be informed, and the Yukon First Nation Burial Site shall not be further disturbed.

13.9.2 Where a Person discovers a Yukon First Nation Burial Site in the course of carrying on an activity authorized by Government or a Yukon First Nation, as the case may be, that Person may carry on the activity with the agreement of the Yukon First Nation in whose Traditional Territory the Yukon First Nation Burial Site is located.

13.9.3 In the absence of agreement under 13.9.2, the Person may refer the dispute to arbitration under 26.7.0 for a determination of the terms and conditions upon which the Yukon First Nation Burial Site may be further disturbed.

13.9.4 Any exhumation, examination, and reburial of human remains from a Yukon First Nation Burial Site ordered by an arbitrator under 13.9.3 shall be done by, or under the supervision of, that Yukon First Nation.

13.9.5 Except as provided in 13.9.2 to 13.9.4, any exhumation, scientific examination and reburial of remains from Yukon First Nation Burial Sites shall be at the discretion of the affected Yukon First Nation.

13.9.6 The management of burial sites of a transboundary claimant group in the Yukon shall be addressed in that Transboundary Agreement.

*This is an excerpt from the Umbrella Final Agreement between Canada, the Council for Yukon Indians and the Government of the Yukon (l993),Ch. 13, pp. 128-129, and subsequent Yukon First Nation Final Agreements.

9.5. Tetlit Gwich'in Burial Sites*

9.5.1 Government and Tetlit Gwich'in shall each establish procedures to manage and protect Tetlit Gwich'in burial sites which shall:

(a) restrict access to Tetlit Gwich'in burial sites to preserve the dignity of Tetlit Gwich'in burial sites;

(b) where the Tetlit Gwich'in burial site is outside the primary use area *(Fort McPherson Group Trapping Area)*, require the joint approval of government and the Yukon First Nation in whose traditional territory the Tetlit Gwich'in burial site is located for any management plans for the Tetlit Gwich'in burial site;

(c) where the Tetlit Gwich'in burial site is on land in the primary use area which is not Tetlit Gwich'in Yukon land, require the joint approval of government and the Tetlit Gwich'in for any management plans for the Tetlit Gwich'in burial site; and

(d) provide that, subject to 9.5.2, where a Tetlit Gwich'in burial site is discovered, the Yukon First Nation in whose traditional territory the Tetlit Gwich'in burial site is located or the Tetlit Gwich'in, if the Tetlit Gwich'in burial site is in the primary use area, shall be informed and the Tetlit Gwich'in burial site shall not be further disturbed.

9.5.2 Where a person discovers a Tetlit Gwich'in burial site in the course of carrying on an activity authorized by government, a Yukon First Nation or the Tetlit Gwich'in, as the case may be, that person may carry on the activity with the agreement of the Yukon First Nation in whose traditional territory the Tetlit Gwich'in burial site is located or the Tetlit Gwich'in if the Tetlit Gwich'in burial site is in the primary use area.

9.5.3 In the absence of agreement under 9.5.2, the person may refer the dispute to arbitration under chapter 18 of this appendix for a determination of the terms and conditions upon which the Tetlit Gwich'in burial site may be further disturbed.

9.5.4 Any exhumation, examination and reburial of human remains from a Tetlit Gwich'in burial site ordered by an arbitrator under 9.5.3 shall be done by, or under the supervision of, the Tetlit Gwich'in.

9.5.5. Except as provided in 9.5.2 to 9.5.4, any exhumation, scientific examination and reburial of remains from Tetlit Gwich'in burial sites shall be at the discretion of the Tetlit Gwich'in**.**

*This is an excerpt from Appendix C - Yukon Transboundary Agreement between Canada and the Gwich'in Tribal Council, (l992), p. 32.

ECOFOR
natural and cultural resource consultants

Heritage Resource Impact Assessment: Blende Property Class 3 Quartz Exploration (18-13ASR)

(TO BE INCLUDED IN YESAB MATERIALS – NO SITE SENSITIVE DATA)

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Report also submitted to:
Na-Cho Nyak Dun First Nation

November 5, 2018

EXECUTIVE SUMMARY

On behalf of Blind Creek Resources Ltd., Ecofor Consulting Ltd. (Ecofor), conducted a Heritage Resource Impact Assessment (HRIA) of the Blende Property Class 3 Quartz Exploration area. The proposed project involves mineral exploration and mining activities on 283 claims located 65 km northeast of Keno City, YT. This HRIA focused on proposed exploration target areas that overlap with predicted areas of elevated heritage resource potential (AOPs) that were identified in a preceding Heritage Resources Overview Assessment (HROA; see Bennett 2018). The total Blende Property claim area covers approximately 5,300 ha and lies within the traditional territory of the Na-Cho Nyak Dun First Nation.

Exploration areas that overlap with HROA predicted AOPs were first inspected by helicopter, then walked and surface inspected were terrain and access allowed. Several AOPs within the Shanghai, Far East, and Breccia target areas were assessed as having little to no potential for cultural materials. The landforms at these AOPs consisted of very narrow angular rock ridge line segments between extremely high slopes. These AOPs were removed from the HRIA efforts. The remaining HROA predicted AOPs, and additional AOPs identified in the field, were then subjected to pedestrian survey, surface inspection, and/or shovel testing. The field crew conducted shovel testing at one location along the south side of the East Pit Target area (Shovel Test Location [STL #1]). In total, seven Shovel Test Pits (STP) were excavated. No archaeological sites, historic sites, or culturally modified trees (CMTs) were identified.

One non-heritage related concern was noted during this HRIA when the field crew sighted collared pika (*Ochotona collaris*) at two locations on the south facing slope, among the angular rock fields southeast of the proposed West Pit. Collared pika are a species of concern under the Federal Species at Risk Act (Schedule 1) and are listed as “vulnerable” in the Yukon because of their limited range and dispersal.

Based on these results, **no additional heritage assessment work is recommended for the five exploration target areas (West Pit Target; Breccia Target; East Pit Target, Far East Target; and the Shanghai Target), and the three preliminary pit design areas (West Pit, Far West Pit, and the East Pit). Blind Creek Resources Ltd. should be aware of and monitor pika occurrences in the alpine at the Blende Property and if noted occurrences are in potential impact areas, they should commission a professional biologist to develop mitigation measures. If any additional development areas are added to the project, then those new areas should also be reviewed for possible impacts to heritage resources. This follow-up heritage review may be conducted through desktop overview and/or field study. Moreover, although all efforts were made to make this assessment as comprehensive as possible, chance finds of heritage resource**

materials still may be made during construction. If such finds are made, all work in the affected area should cease until staff at the Yukon Government Heritage Resource Unit can be contacted for further direction. These recommendations are subject to review and approval/revision by the Yukon Government Heritage Resources Unit.

CREDITS

Permit Holder:	James Mooney, MA
Report Author:	James Mooney, MA Tim Bennett, MA
Field Crew:	James Mooney, MA Daniel Alfred Tommy Plouffe (NND)
Report Editing:	Tim Bennett, MA James Mooney, MA
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1.0 INTRODUCTION

On behalf of Blind Creek Resources Ltd. (BCRL), Ecofor Consulting Ltd. (Ecofor), conducted a Heritage Resource Impact Assessment (HRIA) of the Blende Property Class 3 Quartz Exploration area (Figure 1). The proposed project involves mineral exploration and mining activities on 283 claims located 65 km northeast of Keno City, YT. This HRIA focused on proposed exploration target areas that overlap with predicted areas of elevated heritage resource potential (AOPs) that were identified in a preceding Heritage Resources Overview Assessment (HROA; see Bennett 2018). The total Blende Property claim area covers approximately 5,300 ha and lies within the traditional territory of the Na-Cho Nyak Dun First Nation.

1.1 Project Overview

The Blende property was acquired in 2009 by BCRL from Eagle Plains Resources. Eagle Plains Resources submitted a project proposal to YESAB (2005-001) in 2005 to conduct an exploration program at the Blende property and received a class 3 Mining Land Use Approval (LQ00174). In 2011, BCRL received class 3 Mining Land Use Approval LQ00338 as a renewal to LQ00174, which is now expired.

BCRL is proposing to conduct seasonal (May 1 to October 31) mineral exploration in the Mount Williams area at the Blende property through soil and silt sampling, trenching and diamond drilling. BCRL will be applying for a five-year term Class 3 Mining Land Use Approval in support of the proposed activities, including the operation of one camp. The proposed exploration activities will be limited by the snow free season from May 1 to October 31.

In 2018, BCRL is proposing to collect soil samples, trench up to 1800 m3, conduct ground geophysics surveys, and diamond drill up to 30 drill holes and 20,000 m at the Blende property. All drill holes will be grouted shut upon completion using bentonite or similar grouting method. Further drilling may occur in 2019 through 2022 at the Blende property with additional programs that may include 15-100 drill holes per year and 5,000 m to 30,000 m of drilling per year. Exploration activities will not take place on Na-Cho Nyak Dun settlement land.

Areas assessed in this HRIA are located within five exploration target areas (Breccia, East Pit, Far East, Shanghai, and West Pit), and the three preliminary pit design areas (East Pit, West Pit, and Far West Pit).

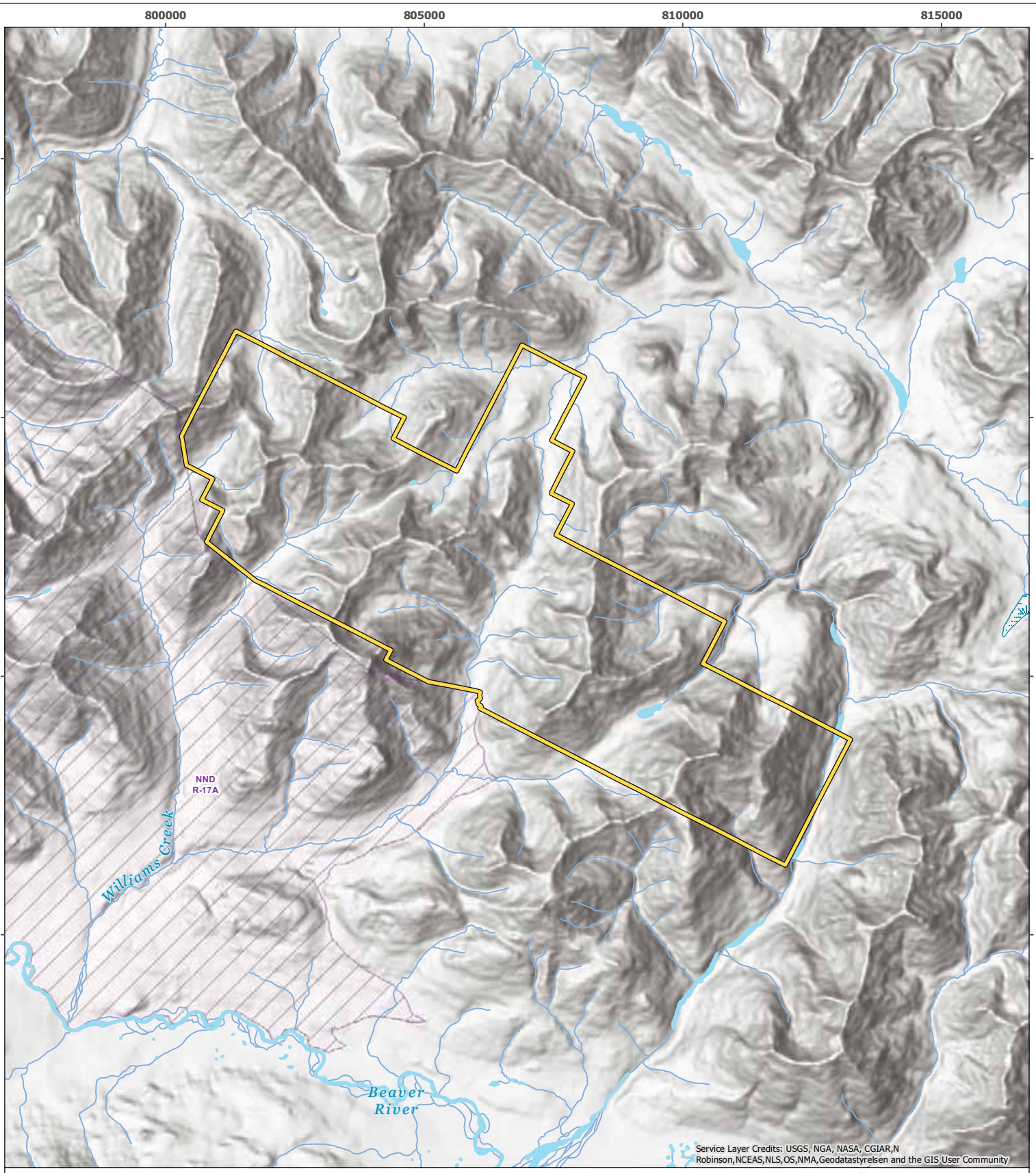

FIGURE 1

BLENDE PROPERTY GENERAL LOCATION MAP

Blind Creek

ECOFOR

Ecofor Consulting Ltd. June 1, 2018 (JM)

1:100,000

(At Original Document Size of 8.5x11")

N

0 2 4Km

NAD 1983 UTM Zone 7N

Disclaimer: Base layers were obtained from the National Topographic Database (NTDB), GeoYukon and ArcGIS Online.

- Watercourse
- Waterbody
- Wetland
- First Nation Settlement Land
- Study Area

1.2 Personnel

Fieldwork was conducted from August 8-10, 2018 by a combined Ecofor and NND heritage team consisting of the James Mooney (Ecofor; permit holder), Daniel Alfred (Ecofor), and Tommy Plouffe (NND).

1.3 Report Format

Following this introduction in Section 1.0, Section 2.0 provides a discussion of the environmental setting that the proposed project is located within, Section 3.0 discusses the culture history of the area in which the proposed project is located, Section 4.0 details the methodologies employed in completing this work, Section 5.0 presents the results of this HRIA, Section 6.0 provides a summary and recommendations for the ongoing management of heritage resources within the assessed project area, and Section 7.0 closes the report with a listing of references cited. Three appendices are included at the end of this report. Appendix A shows project mapping, Appendix B provides project photographs, Appendix C includes the project field notes.

2.0 ENVIRONMENTAL SETTING

The following section begins with a general discussion of the greater ecoregion within which the Blende Property Class 3 Exploration area is located, then provides brief details regarding the specific environmental setting within the Blende Property claim area.

2.1 Mackenzie Mountains Ecoregion

The study area is located within Taiga Cordillera Ecozone and the Mackenzie Mountains Ecoregion. The following Section provides a summary of this ecoregion to provide environmental context to the results of this HROA (see Smith et al. 2004 for full ecozone and ecoregion discussion).

The Mackenzie Mountains Ecoregion is characterized by Broad U-shaped valleys and bare mountain ridges (Smith et al. 2004). It includes the portions of the Mackenzie Mountains, including the Bonnet Plume Range and the Knorr Range in northeastern Yukon, and the northern portions of the Backbone and Canyon ranges, as well as the South Ogilvie and Wernecke mountains (Mathews 1986; Smith et al. 2004). Terrain ranges from 400 m a.s.l. to 2,750 m a.s.l. in elevation with the majority falling between 750 and 1,500 m a.s.l. (Smith et al. 2004). Mount McDonald is the highest of the mountains within the ecoregion. The mountain ranges here form part of the Mackenzie–Yukon hydrologic divide. Major rivers in the northern part of the ecoregion, including the Ogilvie, Blackstone, Hart, Wind, Bonnet Plume, and Snake, drain north into the Mackenzie River and Beaufort Sea (Smith et al. 2004). In the southern part of the ecoregion the Stewart, Nadaleen, McQuesten, and Klondike Rivers flow to the Yukon River and Bering Sea (Smith et al. 2004). Lakes are uncommon, and tend to be small where they do occur.

Mean annual temperatures in the Mackenzie Mountains Ecoregion are near –6°C. Seasonal variability is less extreme than in many other ecoregions in the Yukon. In January, average temperatures fall around -25°C while July temperatures average 8°C (Smith et al. 2004). Recorded extreme temperatures range from -50°C during winter to 30°C in summer on the valley floors, but only range from -35°C to 15°C at higher elevations (Smith et al. 2004). Frosts and/or thawing temperatures can occur year-round in the ecoregion. Precipitation is relatively heavy with 450 mm to 600 mm annually with July and August being the wettest months and the period between December and May being the driest (Smith et al. 2004). Snow is possible year-round.

In terms of bedrock geology, the entire ecoregion lies within the Cordilleran Foreland Fold and Thrust Belt (Gabrielse and Yorath 1991). Sedimentary carbonate rocks form as steep and rugged ridges, with clear mountain-scale folds, while recessive siltstone, shale, and major faults underlie

the intervening valleys (Smith et al. 2004). The oldest of these rocks date to as long as 1.6 billion years ago, forming in the Early Proterozoic (Smith et al. 2004). These oldest rocks are overlain in places by somewhat younger rocks (Late Proterozoic ~750 Ma to 600 Ma) belonging to the Wernecke Supergroup (Delaney 1981), the Mackenzie Mountain Supergroup (Smith et al. 2004), the Fifteenmile Group (Thompson 1995), and Pinguicula Group (Thorkelson and Wallace 1995), then even younger materials of Upper Paleozoic through Jurassic age (Smith el al. 2004). A multitude of metallic minerals are known in the Mackenzie Mountains Ecoregion, including uraniferous mineral brannerite, abundant iron as hematite, copper, barium, cobalt, lead, zinc, lead, nickel, platinum, arsenic, uranium, and gold (Archer and Schmidt 1978; Turner and Abbott 1990; Bremner 1994; Smith et al. 2004). Coal seams are also common in the northeast and northwest portions of the ecoregion (Smith et al. 2004).

Colluvial deposits related to long exposed and weathered surfaces dominate the majority of the surficial geology of the Mackenzie Mountains Ecoregion with approximately 70% coverage (Smith et al. 2004). Glacial deposits, primarily within glaciated valleys, cover an additional 25%, with the remaining 5% being organic, alluvial, and lacustrine deposits (Smith et al. 2004). Modern processes affecting the surficial geology include landslides, rotational slumps, rock fall, and debris flows in areas of exposed rock, solifluction and soil creep in permafrost areas, and active rock glaciers (Smith et al. 2004). The southern boundary of the continuous permafrost zone runs through this ecoregion, with some thawed areas resulting in thermokarstic lakes (Smith et al. 2004).

Several pre-Reid glaciations recorded within the Mackenzie Mountains Ecoregion in the Tintina Trench and along the northern slopes of the South Ogilvie Mountains (Duk-Rodkin 1996). Further evidence from younger glaciations, the Reid (ca. 200 ka) and the McConnell (ca. 23 ka), can be found in most mountain valleys (Duk-Rodkin 1996; Kennedy and Smith 1999). The Wernecke Mountains portion of the ecoregion was largely covered by the Cordilleran Ice Sheet that merged with local glaciers from the South Ogilvie Mountains (Smith et al. 2004). The Snake and Bonnet Plume river valleys, in the northern part of the ecoregion, were affected by the Late Wisconsinan Laurentide Ice Sheet (ca. 30 ka; Hughes et al. 1981; Schweger and Matthews 1991), which blocked the drainage of all streams in the Mackenzie and Wernecke mountains, creating a meltwater channel system that exited through a meltwater channel connecting the Arctic Red, Snake, and Bonnet Plume Rivers and the Bonnet Plume Depression, and drained into Glacial Lake Hughes (Duk-Rodkin and Hughes 1995).

Vegetation within the Mackenzie Mountains Ecoregion generally consists of alpine tundra at higher elevations with valleys of taiga forest (Smith et al. 2004). The treeline sits at approximately

1,200 m a.s.l. (Smith et al. 2004). Areas above 1,500 m a.s.l. are typically bare rock or rubble with lichens and sparse forbs, graminoids, and bryophytes in sheltered pockets (Kennedy and Smith 1999). Some gentler high elevation slopes may also include dwarf willow and ericaceous shrubs (Jingfors and McKenna 1991). Mid-elevation mountain slopes and subalpine river valley terraces are dominated by shrub birch-willow communities (Russell et al. 1992; MacHutcheon 1997; Kennedy and Smith 1999), with understories of net-veined willow, lowbush cranberry, Labrador tea and lichen in drier areas and moss, lichen, and commonly bearberry, lowbush cranberry, alpine blueberry, cloudberry, and sometimes horsetail in wetter areas (Smith et al. 2004). At low elevations, stands of black and white spruce or mixed stands of spruce, aspen, paper birch and balsam poplar are common, with understories including Labrador tea, willow, rose, soapberry and alpine blueberry, horsetail, lupine, and bear root (LGL 1981; Stanek et al. 1981; Kennedy 1992; MacHutcheon 1997). Lodgepole pine and subalpine fir are largely absent from the ecoregion (Smith et al. 2004).

A number of large mammals populate the Mackenzie Mountains Ecoregion, including grizzly bear, wolverine, Dall sheep, and Stone sheep (Barichello et al. 1989; Smith et al. 2004). Woodland caribou of the Bonnet Plume, Hart River, and Redstone herds. The Bonnet Plume herd (n=~5,000 individuals) and the Redstone herd (n=~10,000 individuals) are among the largest woodland caribou herds in the Yukon (Smith et al. 2004). Smaller mammals include collared pika, singing vole, and Ogilvie Mountains lemming, deer mouse, least chipmunk, and hoary marmot (Smith et al. 2004). Bird populations in higher elevations include a wide range of species such as Townsend's Solitaire, Willow Ptarmigan, Northern Shrike, Wilson's Warbler, American Tree, White-crowned, Golden-Crowned Sparrows, Rock Ptarmigan, White-tailed Ptarmigan, Northern Wheatear, Gray-crowned Rosy Finch, Horned Lark, Surfbird, Short-eared Owl, American Pipit, Golden Eagle, and Gyrfalcon (Osgood 1909; Frisch 1975, 1987; Sinclair 1995, 1996; Canadian Wildlife Service 1995). Lower elevation forests provide homes for Merlin, Northern Flicker, Swainson's Thrush, Yellow-rumped Warbler, Blackpoll Warbler, Dark-eyed Junco, Peregrine Falcon, Northern Goshawk, Northern Hawk Owl, Three-toed Woodpecker, Gray Jay, Common Raven, and Boreal Chickadee (Osgood, 1909; Frisch 1975, 1987; Canadian Wildlife Service 1995). although water bird populations are low due to limited suitable habitat, Harlequin Duck, Wandering Tattler, American Dipper, Trumpeter Swans, Mew Gull, Belted Kingfisher, and Solitary and Spotted Sandpipers (Osgood 1909; Frisch 1987, McKelvey and Hawkings 1990) can be found within the Mackenzie Mountains Ecoregion. And finally, riparian thickets support several species of songbird including Alder Flycatcher, Orange-crowned Warbler, Yellow Warbler, Northern Waterthrush, Savannah Sparrow, and Lincoln's Sparrow (Frisch 1987).

2.2 Blende Property Class 3 Exploration Area Environmental Setting

The Blende Property Class 3 Exploration area is located within the Selwyn/Wernecke Mountains. Mount Williams is the one named mountain within the study area, but several peaks are present. Elevations range from approximately 880 m to 1,860 m a.s.l. Valleys between these mountains are typically stream bearing. The one named watercourse is Williams Creek, but several other unnamed streams are present. These creeks drain into the Beaver River to the south of the study area. Soil cover is generally thin in the area of the Blende quartz claims, with no soil developed at higher elevations. Lower elevations support spruce, pine, and willow, but the area is generally sparsely vegetated with higher elevations being completely barren. Fauna known to inhabit the area include bear, moose, caribou, sheep, beaver, marten, lynx, coyote, fox, ptarmigan, and a variety of raptors and waterfowl.

Exploration activities have been ongoing since the 1990s, hence the area has been subject to some minor previous disturbance. The property includes approximately 36km of existing roads. However, these disturbance areas are small, and the majority of the study area appears to be largely intact.

3.0 CULTURAL HISTORY

The following is an overview of the culture history for the broader region surrounding the study area including south-central and southwestern Yukon, and northern British Columbia. Many researchers have reviewed the cultural history of this broader area and have presented the information using a variety of terms and temporal ranges (Clark 1981; West 1996; Workman 1978; J. V. Wright 1995, 1999).

3.1 Precontact Period (ca. 11,000 BP to ca. AD1700s)

The earliest Precontact occupation, which dates to early post-glacial times, is known as the Northern Cordilleran Tradition (Clark 1983; Hare 1995). The earliest Northern Cordilleran Tradition occupation known at present is a site located near Beaver Creek, dated to 10,670 BP (Heffner 2002). The majority of sites appear to date older than 7,000 to 8,000 BP. The Northern Cordilleran Tradition, with some overlap, predates the introduction of microlithic technology from Alaska into the interior of the central and southern Yukon (Clark 1983; Hare 1995).

The Northern Cordilleran Tradition was followed by the Little Arm Phase, which dates from 7,000 to 4,500 BP (Clark and Gotthardt 1999; Workman 1978) and can be defined by the use of microlithic technologies. After about 4,500 BP, there is less evidence of microblade use in the Yukon, and an increase in the use of notched projectile points and a variety of scraping and carving tools. This new tool industry is known as the Taye Lake Phase in southwest Yukon, or more broadly in Yukon and Alaska as the Northern Archaic Tradition (Hare 1995; Workman 1978).

The most recent archaeological culture of southern Yukon is that of the Aishihik Phase (Workman 1978). This phase is thought to be a cultural development from the earlier Taye Lake culture, although there are some significant differences in technology. The most notable is the introduction of the bow and arrow, replacing a type of throwing spear known as an atlatl (Hare et al. 2004). These Aishihik Phase sites are found above the White River Volcanic Ash layer (also known as White River Tephra) that is dated to about 1,250 BP (Clague et al. 1995).

The Aishihik Phase has been evaluated as ranging from approximately AD 750 to AD 1750, and also includes the use of native copper tools, stemmed projectile points, and gorges. Also indicative of the Aishihik Phase are small stemmed Kavik points, end and side scrapers, and ground adzes (Hare 1995). The poor preservation of organic materials makes the task of diet reconstruction more difficult than at the coastal sites, but there is evidence of continued use of a variety of large and small mammals, fish, and birds. In the high elevations of the southern Yukon ice patches, examples of the transition from the older atlatl technology to the bow and

arrow use has been clearly documented by recent finds (Hare at al. 2004). The shift to the new technology was a rather abrupt one at roughly AD 750 based on a good sample of preserved and dated atlatl dart shafts and bow and arrow remains.

3.2 Protohistoric Period (ca. AD1700s to ca AD1840s)

The Protohistoric Period, as presented here, can be defined by the appearance of non-native goods, other early trade items, and foreign (western or eastern) influences, but not the documented accounts of non-native peoples themselves. As such, it spans the time between the first introduction of non-native influences or artifacts, and the recording of first hand or primary written accounts. Other indicators of the Protohistoric Period are the arrival of the first non-native diseases and information concerning non-natives. Unlike other cultural periods with more specific temporal ranges it is difficult and perhaps impossible to determine when the first 'outside' influences from Russian, Asian, European, or other more distant cultures began to impact First Nations people in the Yukon interior.

Some of these far-reaching effects may have been passed along from Russian exploration in the early and mid-1700s (Veniaminov 1984) and other Asian and European (Andreev 1944, Quimby 1985) exploration and contact with coastal communities. The Chilkat Tlingit from the Northwest Coast travelled and traded with many interior First Nation peoples throughout this Protohistoric Period including the Northern Tutchone from the Dawson and Mayo areas and occasionally the Mountain Dene people from as far away as Fort Norman on the Mackenzie River. The Tlingit protected and controlled the trading routes into the interior and fiercely defended those routes when they were threatened. News of early non-native explorers and traders would have travelled inland along with foreign items such as metals, cloths, glass beads, and later tobacco and other goods.

In some of the earliest cases the impacts of these foreign cultures could have had significant impacts even without the presence of the foreigners themselves. Such is the case for what is called 'drift-iron' whereby metals and other materials from Asian or European shipwrecks wash ashore in wood debris. Historical accounts of shipwrecks have been reported in the mid-1700s, but much earlier wrecks were possible. Metals and other foreign trade items have been derived from shipwrecks off what is now British Columbia, Southeast Alaska, and perhaps the Northwest Alaska as well.

3.3 Historic Period (post ca. AD1840s)

3.3.1 Historic Period Overview

During the early years of this period the Russians were exploring along the Pacific coast and up the major rivers of the Alaskan interior, while the British were exploring eastward into what would become Canada's Northwest and Yukon Territories, and Alaska. In the 1840s, representatives of the Hudson Bay Company (HBC) established trading posts throughout the northern territories. The closest trading post to the study area would have been the HBC Fort Francis post, located on the north side of Frances Lake, at the junction of the East and West Arms. In 1840 Robert Campbell of the HBC built "Glenlyon House" and began trading there in 1842. When trading began Campbell changed the name from Glenlyon House to Fort Francis, after Lady Francis Simpson the wife of the governor of the HBC. It was the first trading post in the Yukon Territory and was successful for the first few years however when Fort Selkirk and Fort Pelly Banks were established it deteriorated and eventually shut down in 1852 (Coutts 1980). The location of Fort Selkirk was known to upset the Chilkat Tlingit who controlled the trade routes from the coast to the central Yukon. In 1852, a Chilkat Tlingit raiding party travelled inland and forced Robert Campbell and his crew to leave the trading post, which was consequently burned by the Northern Tutchone (Castillo 2012). After the post at Frances Lake and the Fort at Pelly Banks were abandoned by the Hudson's Bay Company by 1851-1852, Fort Halkett remained open until 1865.

In 1867, US Secretary of State William Seward was able to focus increasing American interests, and he convinced the United States Senate to purchase Alaska from Russia. Soon after the purchase, the US Army sent Captain Raymond up the Yukon River on the first sternwheeler steamer to reach Fort Yukon (Grauman 1977). Raymond surveyed the location of Fort Yukon and proved that it was within US territory. The British sold the Fort to the US Government and relocated east across the 141st Meridian.

The inland fur industry continued to drive exploration and settlement into the late 1800s, but mining would shift the focus to the placer gold found in streams and alluvial deposits. Mining in the second half of the nineteenth century was a risky, but often very lucrative enterprise. The impacts of mining would spread quickly and drastically change life in the Yukon.

Mineral prospecting and mining efforts in the second half of the nineteenth century were, in some ways, very dependent on the existing infrastructure of the fur trading and missionary efforts. As the competition for the inland fur trade grew, so would the number of sternwheelers on the Yukon River. These steamers could better supply the small number of trading posts along

the Yukon and its tributaries and reduce the risk of prospectors running short of supplies. Therefore, more of the fur traders and other explorers turned their attention to search for gold and other minerals. Three key prospectors to the north were L. S. (Jack) McQuesten, Al Mayo, and Arthur Harper. They wrote to miners in the United States to encourage them to come north. They also established outposts along the Yukon River, including Fort Reliance, established in 1874 near the confluence of the Klondike River (what would become Dawson City) (A. A. Wright 1976).

Harper and another man may have been the first to travel up the Fortymile in search of gold in 1881 (Buzzell 2003). They collected a very rich sample but were unable to relocate the exact location. In 1886, McQuesten, Harper, and Mayo built a post on the confluence of the Stewart and Yukon Rivers which provided supplies for additional prospectors. Also in 1886, Howard Franklin made a richer find on the Fortymile River. Others rushed in and these claims along the Fortymile River attracted miners from across Central and Eastern Alaska, and even Southeast Alaska. Fortymile was the first town to grow to over a thousand people by the mid-1890s (Buzzell 2003), and in 1887 the Stewart River post was deserted. Some prospectors that did not find easy success in Fortymile returned to the Stewart and continued work in the area. In 1890, Harper re-established a trading post at the site of the old HBC post at Selkirk as interest in the area grows. This was followed by Jack Dalton who developed a series of existing First Nation trails from tide water at Haines Alaska, into Fort Selkirk.

Then, on August 16, 1896, George Carmack, Skookum Jim, and Tagish Charlie discovered a very rich claim on Bonanza Creek, a tributary to the Klondike River near Dawson. This discovery sparked one of the largest gold rushes in history.

It would take almost a year for the news of the Klondike gold fields to spread south, even to places relatively close by in southeast Alaska. Most of the prospectors and traders in the Alaskan and Yukon interior had already converged on the Dawson area during the winter and spring, and supplies ran dangerously low. That would quickly change in the summer of 1897 and spring of 1898 as new towns and supply posts sprang up along the Gold Rush routes to cash in on the increased demand.

The population of Dawson City grew very fast and in 1898 reached a peak of over 30,000. However, the boom period did not last long, and the vast majority of population moved on very quickly with the news of other discoveries and hopes of other bonanzas. The Gold Rush period saw greatly increased steamer traffic on the entire Yukon River drainage basin and across the interior. Just prior to the Gold Rush there were only a few steamers, while at its peak there would be hundreds of vessels working the rivers. These shallow draft steamers were supported by a

network of wood camps, shipyards, and a large workforce which kept the river traffic moving. This network provided the infrastructure backbone for trading posts, fish camps, missionaries, and mail routes, while meeting the needs of the growing number of prospectors and traders.

The boom period around Dawson did not last long and when gold was discovered on Duncan Creek in 1901, the area was the focus of enough people that a Mining District was created with an office at the mouth of Duncan Creek on the Mayo River. This boom was likely responsible for bringing in additional prospecting around Mayo Lake (Mayo Lake had been named by Alexander MacDonald in 1887 after Captain Alfred Mayo).

At its peak the placer mining on Duncan Creek drove the establishment of a trading post and trail head named Gordon Landing near the confluence of Janet Creek and the Stewart River. From there a two-mile trail up Janet Creek to Janet Lake allowed people and goods to travel further north along Davidson Creek to what was called Mayo Bridge which was close to where Duncan Creek drained into the Mayo River. People could take one of two trails to Mayo Bridge from the southeast end of Janet Lake. These trails are roughly mapped on the 1905 Geological Survey of Canada map of a portion of the Duncan Creek Mining District (Mayo Historical Society 1999:32). One trail continued north crossing north-northeast to Davidson Creek then down Davison Creek almost to the Mayo River then west along the south side to close the Duncan Creek confluence. The second trail followed along the north side of Janet Lake to about the midway point on the north shore of the lake then turned approximately due north to the Mayo River, near Duncan Creek confluence (near what is believed to be “Old Town”). The early communities are mapped in E. L. Bleiler’s map showing creeks and rivers in the Mayo Area (Mayo Historical Society 1999:34). Of interest is the mapped community of Mayo Bridge shown west (or upstream on Mayo River) of the Duncan River confluence. This Mayo Bridge area may overlap with what some informants call “Old Town” (downstream of the current bridge over the Mayo River to Davidson Creek).

The travel route from Gordon Landing on the Stewart River up to Duncan Creek was used primarily from 1902 till 1903 when the townsite of Mayo was established at the mouth of the Mayo River. In this short period the entire length of Duncan Creek from its mouth to its headwaters had been staked.

In 1902, Frank Brain and Percival Nash, accompanied by a group of families from Fort Good Hope, established a post at the confluence of the Stewart and Lansing Rivers (Mayo Historical Society 1999). In 1902 a winter road was also built to connect Whitehorse and Dawson, and in 1903 the community of Mayo Landing was established at the confluence of the Mayo and Stewart Rivers.

Mayo Landing would later be known as Mayo following improved road access which replaced the sternwheeler traffic. By 1903 several of the creeks draining into Mayo Lake had been prospected and worked including Steep, Ledge, Cascade, Anderson, Gull, and Edmonton Creeks. Also in 1903, Jacob Davidson stated "Hell's Gate" claim, found galena near Duncan Creek, and was the first to record the silver-lead ore and stake a silver claim in the area.

In 1904, an overland trail was built from Dawson to Duncan Creek which linked a good wagon road from Duncan Creek to Mayo Landing. In 1912, Harry McWhorter along with Grant Huffman and Jack Alverson returned to the area previously stated by Jacob Davidson known as the Silver King. In 1913 Huffman staked the "Mabel" claim after his daughter and Alverson staked the "Webfoot" claim. By 1914, after significant efforts, Huffman and Alverson netted roughly five thousand dollars profit each (based on a lease agreement with McWhorter) and the area began its long standing and continuing association with galena. In 1918, Grant Huffman built a farmstead on the Mayo Canyon associated with the road to Keno and in the 1920s was a market hunter for the Treadwell Yukon Company (Mayo Historical Society 1999). He was said to have supplemented his hunting with produce from his farmstead including cabbages, carrots, and potatoes. He was known to have built two cabins in the Silver King area and two others near the Mayo Canyon, the remains of which were identified during past fieldwork.

Following the success of Huffman and Alverson, McWhorter cancelled the lease and optioned the property to Thomas Aitken who in turn purchased the property for $75,000. Over the winter of 1916-1917, with the help of a large crew Aitken mined approximately 1,386 tons of high grade silver. He then optioned the property to his partners and left them with little high grade remaining. Overall Aitken was said to have earned roughly $500,000 from Silver King (Mayo Historical Society 1999).

In July 1919, Alfred Schellinger staked the Keno claim on Keno Hill and over that winter more than 500 additional claims were staked. Another boom began in what would be become associated with the community of Elsa. However, unlike other quickly lived communities, this Mayo-Elsa-Keno area provided jobs and revenue that carried the Territory between World War I and World War II.

Further detail specific to the history of Blende Property exploration is presented in the following section.

3.3.2 Blende Property Exploration History[1]

Mineralization was originally noted in this vicinity by the Geological Survey of Canada in 1961 and was first staked as Will claims 1-60 (Y97990) in July 1975 by Cyprus Anvil Mining Corporation, which carried out geological mapping, geochemical silt and soil sampling and prospecting later in the year.

The area was re-staked as Blende claims 1-15 (YA43524) in March 1981 by Archer, Cathro and Associates (1981) Limited, which carried out geochemical rock sampling in 1981, geochemical rock sampling, prospecting, and air photo interpretation in 1982, and hand trenching and geochemical rock sampling in 1984. The property was subsequently optioned by Canadian Nickel Company Ltd., which staked Blende claims 16-88 (YA77655) to surround the existing claims in October 1984 and carried out geological mapping and prospecting of the newly staked claims in 1985 before dropping the option.

In 1986, the Blende claims 1-15 were sold to NDU Resources Ltd. which carried out prospecting, hand trenching, and drilled 3 holes (718 m), before staking Blende claims 16-56 (YB02529) to the north and east in July 1988 and Blende claims 57-66 (YB02700) to the west in August 1988. NDU staked Blende claims 67-104 (YB03051) to the east and north in June 1989 and Blende claims 105-122 (YB03089) to the north and west in July 1989, and carried out geological mapping, grid geochemical soil sampling, road construction, and geophysical magnetometer and VLF-EM surveying.

Billiton Metals Canada Inc. optioned the property in October 1989 and the following year carried out geological mapping, baseline water quality testing, road construction, drilled 15 holes (3,659.7 m) and staked Blende claims 123-128, 1fr-28fr (YB03863) in August 1990. Billiton's 1991 work included completion of the soil geochemical and geophysical coverage, drill-testing of the deposit over a 3.3 km strike length, preliminary metallurgical testing, and the staking of Blende claims 129-169 (YB18179) in June 1991 and Zinc claims 1-48 (YB18553) in July 1991. The 1991 drilling consisted of 62 holes (11,525.1 m), including 15 holes in the west zone, 34 holes in the east zone, and 13 holes in the central area between the east and west zones.

In 1994 NDU drilled seven holes (596 m) in an area of relatively high grade surface exposures located at the base of a cliff immediately west of the West Zone reserve block. Eagle Plains Resources Ltd. re-staked the occurrence as Mix claims 1-16 (YC09986) in March 2002 and carried

[1] Information presented in this section is adapted from Blind Creek Resources' Ltd. website (accessed May 29, 2018 at http://www.blindcreekresources.com/s/Blende.asp?ReportID=447734) and Yukon Minfile 106D 064 (http://data.geology.gov.yk.ca/Occurrence/13934)

out a one day property examination to assess the property's infrastructure. Eagle Plains staked Trix claims 1-46 (YC11723) to surround the Mix claims in Apr/2004, announced that it had executed an option agreement with Shoshone Silver Mining Company whereby Shoshone could earn a 60% interest in the Blende deposit in May 2004, and staked Trix claims 47-56 (YC32293) contiguously to the southeast in August 2004. Shoshone released a technical report which verified the resource calculations originally prepared in 1991 by Billiton Metals Canada Ltd. Shoshone terminated its option in May 2005.

In August 2005, Eagle Plains optioned the property to Blind Creek Resources Ltd. which carried out an exploration program consisting of re-logging historical diamond drill core, a ground-based gravity survey, geological mapping, geochemical sampling, and prospecting. In March 2006 Blind Creek constructed a winter road into the property. The company then carried out geological mapping, geochemical sampling, prospecting, and a diamond drill program consisting of 23 holes (4,233 m). In 2007 the company drilled an addition 13 diamond drill holes (3,210 m) and carried out further geological mapping, geochemical sampling, and prospecting programs. In 2008, the company completed seven diamond drill holes (1,047 m) on the property. In 2009, Blind Creek Resources finalized the purchasing agreement for the Blende from Eagle Plains Resources and assumed 100% interest in the property. Additional metallurgical testing was conducted by Blind Creek Resources Ltd. in 2017.

3.4 Modern First Nations

The study area falls within the traditional territory of the Na-Cho Nyak Dun First Nation (NND). The NND First Nation is part of the Northern Tutchone language and culture group. In the past, the Tutchone peoples were highly mobile, travelling in small groups in order to exploit the greatest number of resources. They would modify their movements depending on the patterns of large game animals and fish, or in later years to trade their furs with Westerners. In the summer, small domestic units gathered together to catch fish so that they could dry and store it for the winter months. By mid-summer several family groups moved upland together in order to kill large game mammals that they would dry and store in caches scattered in a variety of areas. From there some units moved away independently during the coldest months to trap and live off of the cached foods. The leanest months were March and April. In spring, several units often came together at this point to catch spawning whitefish or trap muskrat and beaver. May was the most plentiful month, with migrating waterfowl, fat ground squirrels, larger and more abundant fish, as well as the arrival of the Coastal Tlingit traders (McClellan 1981).

The principal ethnographic descriptions of the Tutchone are available in Cruikshank (1974, 1975), Johnson and Raup (1964), McClellan (1950, 1964, 1970a, 1970b, 1975), and Tanner (1966). Additional information on camp and village locations can be found in Schwatka (1885). Although villages were not inhabited year round, people would return to good fishing and/or hunting spots year after year. This would eventually change with the influence of Westerners. Watercraft were constructed for use, however during the summer months Tutchone people preferred to walk overland, rather than brave the sudden winds on the large lakes or the treacherous river rapids. Boats were not the preferred method of transport.

The NND First Nation remained somewhat isolated until the discovery of gold in the area in 1883 (Mayo Historical Society 1999). The NND are known to have used many traditional camps, lookout sites, hunting areas, berry patches, and trails in the larger project area with extensive use of rivers. McClellan (1981) summarized the common seasonal activities beginning in the spring with grayling fishing following spring break up. The NND people remained almost completely isolated from non-First Nation people, except for a few explorers passing through, until miners set up a supply post along the McQuesten River in 1886. The supply post soon turned into a village and from then on permanent camps and villages have existed in the larger area surrounding Mayo Lake. During the Duncan Creek gold rush, a trading post called Gordon Landing was established near the confluence of Janet Creek and the Stewart River. From there a trail allowed people to travel north partially along Davidson Creek to the confluence of Duncan Creek on the Mayo River. The Town of Mayo was established in 1903 and the people of McQuesten and a few other small encampments moved there or to the “Old Village” just outside of town (Mayo Historical Society 1999). This village made it possible for people to receive a western education, live close to Mayo, and continue their preferred way of life and cultural celebrations. Eventually the “Old Village” was abandoned when in 1958 the local health officials determined the drinking water was polluted and the NND were requested to move to the Town of Mayo. The First Nations people in the Mayo area officially chose the name “Na-Cho Nyak Dun” in 1987 which means “Big River People” in reference to the now named Stewart River.

3.5 Previous Heritage Investigations

Consultation with staff at Yukon Heritage revealed that no heritage resource assessment work has investigated the study area with the exception of the Blende Property HROA study that preceded this HRIA (see Bennett 2018). As such, no archaeological or Yukon Historic Sites Inventory (YHSI) sites have been previously recorded within the study area.

4.0 METHODOLOGY

The combined Ecofor and NND heritage team assessed the AOPs within the target areas as recommended in the preceding HROA (see Bennett 2018). The exploration areas to be assessed in the field were flown by helicopter, in a low and slow fashion, and where possible, the HROA predicted AOPs were walked and surface inspected. The confirmed AOPs and additional AOPs identified in the field within the exploration target areas, were then subjected to surface inspection and/or shovel testing. Subsurface shovel testing was used when surface visibility was reduced. In the early morning of August 10, the highest areas along the West Pit Target, Far West Pit, and West Pit were covered with a light snowfall, but the ground surface was partially visible, and the snow cover melted off quickly in approximately 1.5 hours during transects and surface inspection.

During the field survey, areas of high heritage resource potential were transected at intervals of approximately 5 m to 15 m with shovel tests being excavated approximately 3 m to 10 m apart in areas deemed to have potential for subsurface heritage resources. Shovel tests measured at least 35 cm by 35 cm, and were excavated with shovel and trowel into sterile sub soils. All excavated sediments were screened though ¼ inch mesh and representative sediment profiles were recorded for each shovel test location (STL). All shovel tests were backfilled and returned to as close to natural conditions as possible.

5.0 RESULTS

Exploration areas that overlap with HROA predicted AOPs were first inspected by helicopter, then walked and surface inspected were terrain and access allowed. After field review, the predicted AOPs within the Shanghai Target, the western AOP and the higher section of the eastern AOP in the Far East Target, and the AOPs in the Breccia Target were determined to contain little to no potential for cultural materials. The landforms at these AOPs consisted of very narrow angular rock ridge line segments between extremely high slopes. No further assessment was conducted in these AOPs.

The remaining AOPs, and additional AOPs identified in the field within the exploration target areas, were then subjected to pedestrian survey, surface inspection, and/or shovel testing. The upper elevation areas consisted mainly of angular rock fields with sporadic small level benches with thinly developed soils and frost boils, while the lower elevation target areas consisted of numerous small benches and knolls with frost boils and exposed soils from rodent disturbance and previously disturbed machine-made access trails (Photos 1 to 5). Detailed assessment transects and surface inspection were conducted within sections of the East Pit, Far East, and West Pit target areas, and the West Pit and Far West Pit preliminary pit design areas.

The field crew conducted shovel testing at one location (STL #1) along the south side of the East Pit Target area. Further details of the assessment work conducted in these areas, and one non-heritage related wildlife concern, are presented below.

5.1 Areas of Potential

The AOPs confirmed in the field consisted mainly of small level benches, knolls, and vistas or look-outs at higher elevations, and rounded knolls and benches at lower elevations. These AOPs were covered in little to no vegetation at higher elevations, and minimal vegetation, scrub birch, alder, some spruce, berry shrubs, lichens, and thin soils in the lower elevations (Photos 6 and 7). These AOPs provided fair to excellent surface visibility. No archaeological or historic cultural materials were identified via surface inspection. The vast majority of the target areas are above the tree line (Photos 8 to 15) and no culturally modified trees (CMTs) were identified.

5.2 STL #1

This AOP provided fair surface visibility, but due to the increased potential of the landform and proximity to the drainage below, shovel testing was conducted (Photos 16 to 19). Seven negative shovel tests were excavated on a low knoll on the south-central side of the East Pit Target area. Spacing between shovel tests ranged from approximately 3-5 m, and the depth of the shovel

tests ranged from approximately 20-35 cm. The landform was covered with sparse vegetation consisting of lichens, sporadic mosses, grasses, and berry shrubs. The soils at this landform consisted of a black, humic rich silt loam with approximately 20% angular pebbles from 0-8 cm below surface, followed by a brown silt loam with approximately 30% angular pebbles to a depth of 22 cm below surface. The landform sloped down to the drainage in the northeast and east. No cultural materials were identified on surface or while shovel testing.

5.3 Wildlife Concerns

While transecting across angular rock fields southeast of the West Pit, the field crew heard numerous collared pika (*Ochotona collaris*) calls and confirmed sightings of Pika at two locations on the south facing aspect in the rock rubble (Photos 20 to 22). Collared pika are a species of concern under the Federal Species at Risk Act (Schedule 1) and are listed as “vulnerable” in the Yukon because of their limited range and dispersal.

6.0 SUMMARY AND RECOMMENDATIONS

On behalf of Blind Creek Resources Ltd., Ecofor Consulting Ltd. (Ecofor), conducted an HRIA of the Blende Property Class 3 Quartz Exploration area. HRIA work focused on proposed exploration target areas that overlap with predicted AOPs that were identified in a preceding HROA study (see Bennett 2018), and included portions of the greater claim area within five exploration target areas (Breccia, East Pit, Far East, Shanghai, and West Pit), and the three preliminary pit design areas (East Pit, West Pit, and Far West Pit).

Subsequent to initial helicopter survey of the study area, AOPs within the Shanghai Target, the western AOP and the higher section of the eastern AOP in the Far East Target, and the AOPs in the Breccia Target were determined to contain little to no potential for cultural materials, and no further assessment was conducted in these AOPs. The remaining AOPs, and additional AOPs identified in the field within the exploration target areas, were subjected to pedestrian survey, surface inspection, and/or shovel testing. Shovel testing was conducted at one locality, but no heritage resources were identified in any of the assessed areas.

One non-heritage related concern was noted during this HRIA when the field crew sighted collared pika (*Ochotona collaris*) at two locations on the south facing slope, among the angular rock fields southeast of the proposed West Pit. Collared pika are a species of concern under the Federal Species at Risk Act (Schedule 1) and are listed as "vulnerable" in the Yukon because of their limited range and dispersal.

Based on these results, **no additional heritage assessment work is recommended for the five exploration target areas (West Pit Target; Breccia Target; East Pit Target, Far East Target; and the Shanghai Target), and the three preliminary pit design areas (West Pit, Far West Pit, and the East Pit). Blind Creek Resources Ltd. should be aware of and monitor pika occurrences in the alpine at the Blende Property and if noted occurrences are in potential impact areas, they should commission a professional biologist to develop mitigation measures. If any additional development areas are added to the project, then those new areas should also be reviewed for possible impacts to heritage resources. This follow-up heritage review may be conducted through desktop overview and/or field study. Moreover, although all efforts were made to make this assessment as comprehensive as possible, chance finds of heritage resource materials still may be made during construction. If such finds are made, all work in the affected area should cease until staff at the Yukon Government Heritage Resource Unit can be contacted for further direction.** These recommendations are subject to review and approval/revision by the Yukon Government Heritage Resources Unit.

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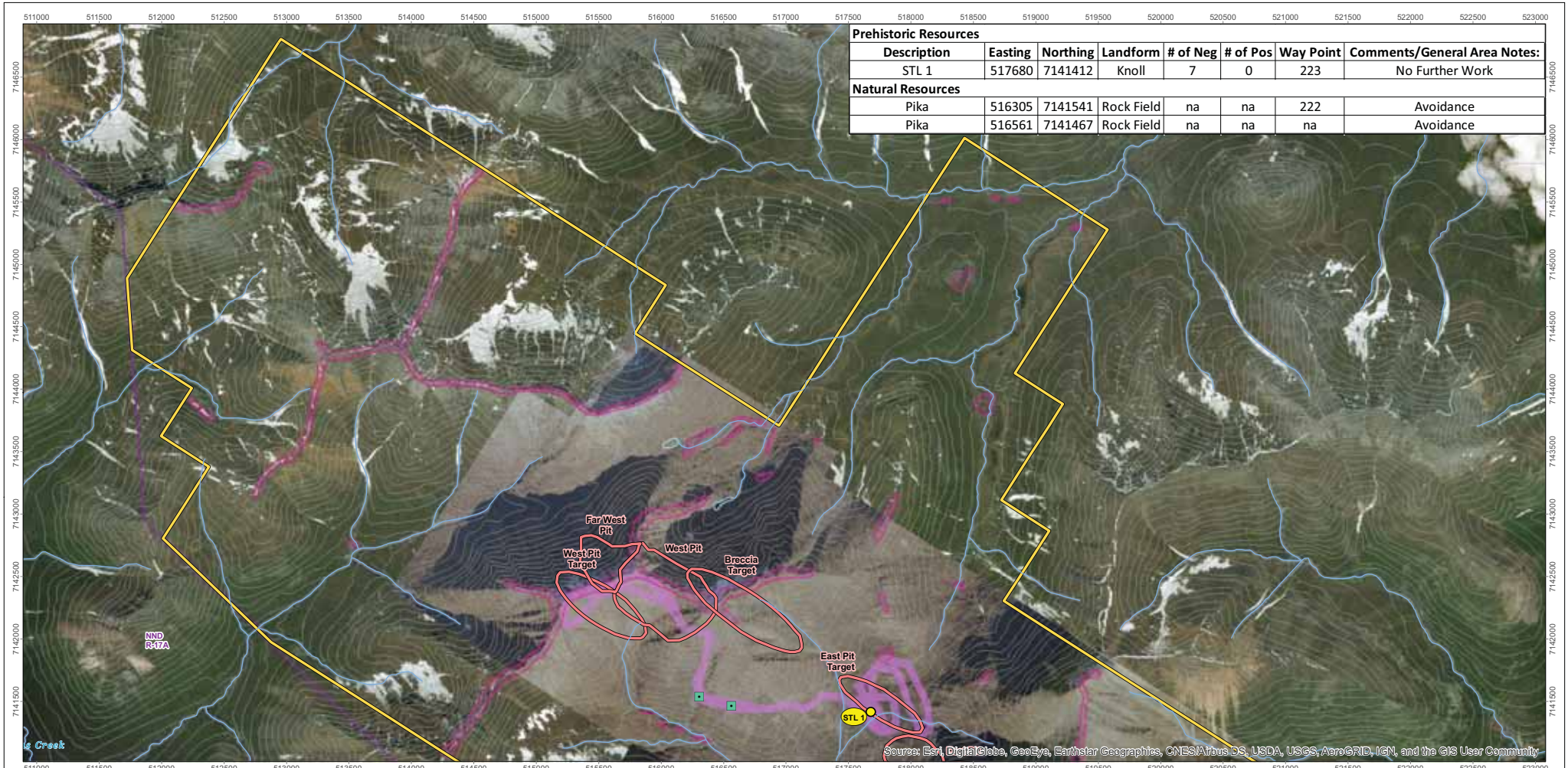
APPENDIX A: Project Mapping



Prehistoric Resources

Description	Easting	Northing	Landform	# of Neg	# of Pos	Way Point	Comments/General Area Notes:
STL 1	517680	7141412	Knoll	7	0	223	No Further Work
Natural Resources							
Pika	516305	7141541	Rock Field	na	na	222	Avoidance
Pika	516561	7141467	Rock Field	na	na	na	Avoidance

FIGURE 2 HERITAGE RESOURCES IMPACT ASSESSMENT

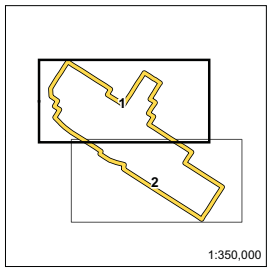
BLENDE PROPERTY MAP 1 OF 2

1:30,000 (at current document size of 11" x 17")

0 500 1,000 1,500m

NAD 1983 UTM Zone 8N

Disclaimer:
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Base layers were obtained from the National Topographic Database (NTDB), and GeoYukon.



Base Features
- Contour (100ft)
- Watercourse
- Waterbody
- First Nation Settlement Land

Assessment Features
- Pika
- Subsurface Test Location (STL)
- Study Area
- 2018 Exploration Target
- Area of Potiental (AOP)
- Pedestrian Survey Transect Area

Blind Creek resources ltd.

ECOFOR

Ecofor Consulting Ltd. Date: August 28, 2018 (MM)

FIGURE 3 HERITAGE RESOURCES IMPACT ASSESSMENT

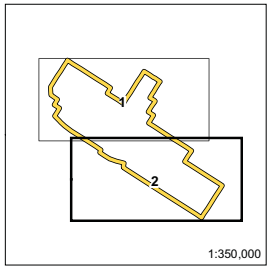
BLENDE PROPERTY MAP 2 OF 2

1:30,000 (at current document size of 11" x 17")

0 500 1,000 1,500m

NAD 1983 UTM Zone 8N

Disclaimer:
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Base layers were obtained from the National Topographic Database (NTDB), and GeoYukon.



Base Features
- Contour (100ft)
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- Pika
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Blind Creek resources ltd.

ECOFOR

Ecofor Consulting Ltd. Date: August-28-18 (MM)

APPENDIX B: HRIA Photographs

ECOFOR
natural and cultural resource consultants

Archaeological Survey Photodocumentation

Permit: 18-13ASR **Development Area:** Blende Property HRIA

Client: Blind Creek Resources Ltd. **Date:** August 16, 2018

Photo 1: AOP north of East Pit Target area, view North.

Photo 2: Within East Pit Target central area surface visibility, view East.

Photo 3: Surface inspection on small knoll within East Pit Target central area surface, view Northeast.

Photo 4: Sample view of upper elevation in West Pit area with rock rubble view North.

Photo 5: Sample view of lower end of rock rubble with West Pit Target in background view Northwest.

Photo 6: Sample view southeast of Breccia Target area view North.

ECOFOR
natural and cultural resource consultants

Archaeological Survey Photodocumentation

Permit: 18-13ASR **Development Area:** Blende Property HRIA

Client: Blind Creek Resources Ltd. **Date:** August 16, 2018

Photo 7: Sample view of benches and knolls surface inspected in the central section of the East Pit Target area, view northeast.

Photo 8: Sample surface inspection of small raised knoll in the East Pit Target, view North.

Photo 9: Sample surface visibility of small raised knoll in the East Pit Target, detail view.

Photo 10: Sample view upslope of steep rock rubble slope with bench on west end of Far East Target area, view North from helicopter.

Photo 11: Sample view (down view) of steep rock rubble slope with bench on west end of Far East Target area, view East from helicopter.

Photo 12: Sample view surface inspection of bench on west end of Far East Target area, view West.

ECOFOR
natural and cultural resource consultants

Archaeological Survey Photodocumentation

Permit: 18-13ASR **Development Area:** Blende Property HRIA

Client: Blind Creek Resources Ltd. **Date:** August 16, 2018

Photo 13: Sample view surface inspection of bench on west end of Far East Target area, view West with Breccia and West Pit areas in background.

Photo 14: Sample view of west side of Far East Target area, view North.

Photo 15: Sample view of East Pit previous disturbance, view East.

Photo 16: STL #1, prior to excavation, view South.

Photo 17: STL #1, view Northeast.

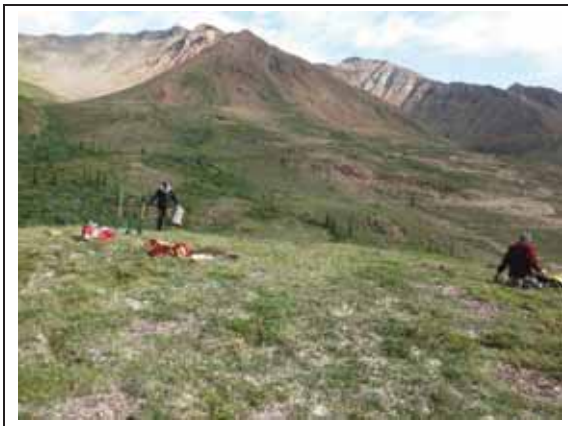

Photo 18: STL #1, view East.

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Archaeological Survey Photodocumentation

Permit: 18-13ASR **Development Area:** Blende Property HRIA

Client: Blind Creek Resources Ltd. **Date:** August 16, 2018

Photo 19: STL #1, STP#3, view East.

Photo 20: View of Collared Pika on rock view South (also downslope).

Photo 21: Detailed view of Collared Pika sitting on rock, view South (also downslope).

Photo 22: Approximate location of second Collared Pika sighting along south facing slope with previous cat cut, view East-northeast.

APPENDIX C: Project Field Notes

(1)

Bleede Property HRIA Aug 7, 2018

8:30 JM/DA leave WHSE
pick up Daniel's gear in Pelly
drive to Mayo - stop in at NND
Heritage - have supper w Tommy
pick up Tommy's gear leave
Mayo 6:00 pm arrive Keno 7:00
pm
- also in Mayo we stopped in to
say hi to Norm - the heli pilot
from fireweed to confirm 7:30 am
pick up, discuss logistics. I did
test of InReach Message to Norm's
cell phone + it worked and sent him
decimal degrees Lat + Long for our
location - he will loan us a
handheld radio but I will also
send InReach Messages as needed

Aug 8, 2018

Get to helipad at 7:30 No chopper
fog/raining in - multiple calls -
will restart for 2:30 pm Norm came up
to Keno + did safety briefing w/ + Kat

Aug 8, 2018 Blende Property HRIA

... flight up + towards McQuesten over start of ATAC survey area by 14:57 (2:57pm)

~2009 (2010) landslide over Blende Camp

we flew in and around/over East Pit + walked the AOP above East Pit Target + walked + inspected the upper/NW section + a bit of the south side of east Pit target - but fear of getting fogged in we only stayed in the area for ~2 hrs (approx) the NORM got us out. we left the East Pit target area at a bit before 5:30 pm - land unpack - get back to hotel unload - 6:30 pm 6 hrs for DA/TP

Aug 9, 2018 Blende HRIA

rained/fogged in confirm weather with Norm the pilot Norm @ 7:05 am and 9:00 am he has a rescue on the Peel River to work on today but does not have InReach

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No.392

Aug 9, 2018 Blende HRIA

Norm asked me to go along with him to help in rescue trip so I did. Drove down to MAYO, then we flew to NASH creek to refuel then up to Wind River + Peel, then shuttling people + gear to taco Bar, then refueling + hops back - late night - Rescue complete, TP + DA worked on other office tasks thru the day in Keno.

Aug 10, 2018

clearer skies 7:30 am

out to heli pad + Norm arrives @ 8:15 am - off to Blende.

Norm + I agreed for a 6:00 pm pick up time.

land and unloaded at 8:48 am - walk south end of ridge, rear boundary b/w West Pit + far West Pit area is high very steep side slope, cat cuts, angular talus slopes.

Daniel pulled his shoulder + we rested + walked downslope + saw Pika near, downslope of WP222

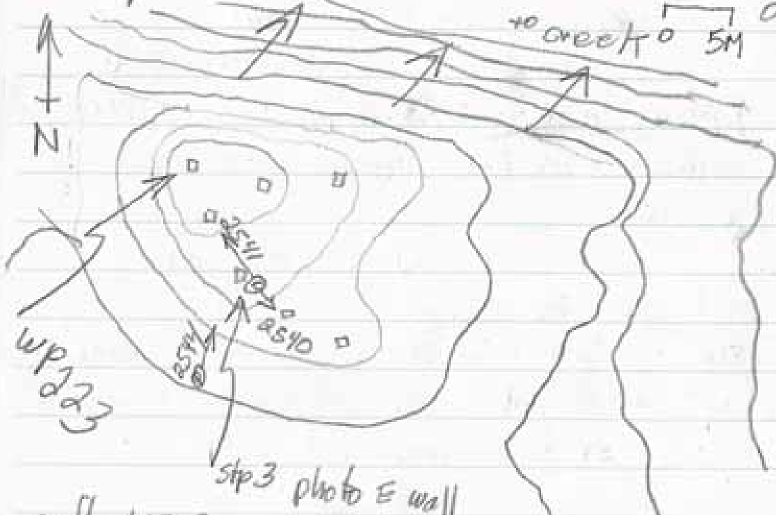
Rite in the Rain

Aug 10, 2018 Blende HRIA

walked up near East Pit + Breccia Pit - high slope low to No potential bare rock + some veg

other Pika heard repeatedly along side slope in rock field ~ 250 M east of WP 222

around back to the East Pit Target + we opened STL #1 WP 223 scale 7neg 0pos



profile #2543

soils: 0-8 black humic rich si lo w̄ ~ 20% angular pebbles; 8-22cm br si lo with ~ 30% angular pebbles

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No.392

Aug 10, 2018 Blende HRIA

WP 224 sample surface inspection of level frost boil area within East Pit Target photo 2545/2546 samples

Norm picked us up ~5:10 or 50 and we flew around Far East + Shanghai - very steep ridge lines - too steep for walking - but we landed at large saddle in Far east target @ WP 225 - good surface visibility + powered down heli + walked around to surface inspect - ~ 5:34 pm

+ load up + head back @ ~ 7:00pm

also today we saw 1 caribou south of Breccia Target + then it moved up + North of the Breccia Target

back in Keno ~ 7:30 pm + got bill from Norm @ heli dynamics

Aug 11, Demob day - packup, checkout, drop radio/charger w̄ Norm in Mayo

Rite in the Rain

Aug 11, 2018

--- then on to Kelly - drop off Daniel + gave ride to Tommy Plouffe to Whitehorse

overall Blende higher areas very high slope, rock rubble angular rock + scree, + lower areas have good surface visibity + lots of frost boils, rodent dist. backdirt piles.

heli flight between Far East + Shanghai targets show very thin razor back rock ridge lines, at highest elevations are not as likely AOPs as predicted in HROA
∴ - drop AOP from Shanghai - NFW; drop AOP along ridge in upper East At target; but lower elev areas may have smaller discrete AOPs

JL DARLING LLC
Tacoma, WA, USA • BlueintheRain.com

ECOFOR
natural and cultural resource consultants

CLIENT NAME: Mayo Mining Recorder
ADDRESS 207 6th Avenue
PO Box 10
Mayo , YT Y0B 1M0

Date: **December 6, 2018**
Page: **1**

Attention: Trevor Ellis

STATEMENT OF EXPENDITURES

Program:

Blende Property
Heritage Resources Overview & Impact Assessments
In regards to Grouping Certificate No. HM02859

Description	Quantity	Unit	Rate	Amount
HROA Project Coordination				
Senior Archaeologist	4.00	HR	$ 100.00	$ 400.00
GIS Mapping				
Mapper/GIS	5.00	HR	$ 85.00	$ 425.00
Reporting				
Senior Archaeologist	29.75	HR	$ 100.00	$ 2,975.00
			Sub Total	$ 3,800.00
			GST	$ 190.00
HRIA Project Coordination				
Senior Archaeologist	20.00	HR	$ 100.00	$ 2,000.00
Class 2 ASR Permit Application				
Senior Archaeologist	8.00	HR	$ 100.00	$ 800.00
GIS Mapping				
Mapper/GIS	8.25	HR	$ 85.00	$ 701.25
HRIA Reporting - Interim & Final Distribution				
Senior Archaeologist	77.50	HR	$ 100.00	$ 7,750.00
Prep, Travel & HRIA Time				
Senior Archaeologist	40.00	HR	$ 100.00	$ 4,000.00
Archaeological Technician	36.00	HR	$ 95.00	$ 3,420.00
NND HRIA Field Participant	26.00	HR	$ 45.00	$ 1,170.00
Other Costs				
Truck Day	5.00	DAY	$ 200.00	$ 1,000.00
Field Supplies	1.00	LS	$ 250.00	$ 250.00
Accommodations				$ 1,825.30
Helicopter				$ 7,271.60
			Sub Total	$ 30,188.15
			GST	$ 1,509.41

Sub Total	**$ 33,988.15**
GST (#885156216)	**$ 1,699.41**
Total	**$ 35,687.56**