APPENDIX 18B: HISTORICAL RESOURCE IMPACT ASSESSMENT OF THE FREEGOLD ROAD

ECOFOR
natural and cultural resource consultants

FINAL REPORT

Historic Resource Impact Assessment of the Freegold Road from km 33 to km 196

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

Permit 13-07ASR

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November 20, 2013

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ACKNOWLEDGMENTS

Ecofor Consulting Ltd. (Ecofor) prepared this report on behalf of Casino Mining Corporation.

James Mooney and Kevin Wilson (Owner) would like to thank Casino Mining Corporation for the opportunity to conduct this project and for providing us with assistance. We would also like to thank the Little Salmon/Carmacks First Nation and Selkirk First Nation field participants Mario Skookum, Daniel Alfred, and Donald John Alfred.

Finally, we would like to thank the Ecofor staff and the First Nation of Little Salmon/Carmacks and Selkirk First Nation for their high quality of work.

Ecofor is solely responsible for any errors evident in this report. The opinions and/or recommendations presented herein are ours and do not necessarily reflect those held by the Heritage Branch of the Yukon Government.

MANAGEMENT SUMMARY

Cultural resources staff of Ecofor Consulting Ltd., (Ecofor) completed the fieldwork for this project between June 19th and September 13st, 2013 on behalf of Casino Mining Corporation. Field staff included James Mooney, Holly Smith, Pierre-Luc Fortin from Ecofor Consulting Ltd., and Daniel Alfred and Donald John Alfred of the Selkirk First Nation and Mario Skookum of the Little Salmon/Carmacks First Nation. Previous heritage impact assessment work for the proposed extension of Freegold Road was completed by Ecofor and reported under permit 11-04ASR. The purpose of the current project was to identify heritage resources through reconnaissance survey and selected shovel testing along the revised road alignment, borrow pits, access road as well as the proposed road realignments between km 33 and km 66 of the existing Freegold Road.

In the late summer of 2013 Ecofor also prepared an Interim Heritage Resources Impact Management Plan for the Casino Mine Project and conducted reflagging, as well as posting of warning signs, at previously identified sites near Casino Camp, mine site, proposed airstrip, and the access road to the barge landing. Archaeological mitigation efforts were also conducted at Site KfVi-5 under permit 13-18ASR and the results of that recovery work is present under a separate report. The current field work was completed three sessions: June 19-28, August 1-10, and September 8-13, 2013. A total of 47 locations were assessed in the field to possess potential for buried resources. These 47 areas were shovel tested and 15 of them were found to contain prehistoric materials. These were recorded as archaeological sites: KcVd-3; KcVf-2, KcVf-3, KdVi-2; KdVi-3; KdVi-4; KdVi-5; KeVf-3, KeVf-14, KeVg-8, KeVg-9, KeVh-4, KeVi-13, KeVi-14, and KeVi-15.

These efforts also identified six previously unrecorded historic sites consisting of log cabins, caches, and pit features. These resources were recorded and added to the Yukon Historic Site Inventory (YHSI). The past owners of the structures were not known at the time of identification and these resources were recorded by temporary names. These consisted of: the Ketchup Cabin (YHSI 115I/06/009); the Gas Can Cabin (YHSI 115I/06/010); the Melmac Cabin (YHSI 115I/06/011); the Dog House Cabin (YHSI 115I/06/012); the Fallen Cache Cabin (YHSI 115I/03/002); and the Three Room Cabin (YHSI 115J/06/013). No paleontological remains, grave sites or human remains were identified. All of the newly identified prehistoric and historic sites were flagged with a 30 m buffer of yellow and black "No Work Zone" tape.

Some sections of previously identified ethno-historic trails within areas of potential impact were flagged with white "Culturally Modified Tree" (CMT) flagging. Previously recorded but not flagged historic structures were also flagged with a 30 m buffer of "No Work Zone" tape. A total of five trap trees associated with modern trapping were also identified along the south side of the existing Freegold Road and a modern cabin was also added to mapping due to possible stakeholder concerns.

If this project moves forward it is possible that further revisions in the road and ancillary components may change. It is recommended that any areas of potential impact not previously assessed, are reviewed and assessed in the field prior to future impact. Impacts to recorded historic and prehistoric resources should be avoided were possible, or mitigation efforts should be completed prior to construction impacts. Site by site recommendations are presented below. No further heritage management work is recommended for KeVg-8 (Temp Site H2), KeVh-4 (Temp Site H3), KeVi-13 (Temp Site H101).

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1.0 INTRODUCTION

1.1 Scope of Project

The Casino Property is a proposed open-pit Gold, Copper, and Molybdenum mine. The property is located in south-western Yukon, near the Yukon River in the Klondike Plateau and Central Yukon Plateau. At present the property is only accessible by air and by barge. Plans are being made by Casino Mining Corporation to build a road to connect Casino Property to Carmacks and the Yukon Highway systems. In addition, an airstrip and access road are also proposed southwest of Casino Camp to accommodate larger aircraft and a new barge landing is proposed slightly downstream from the existing landing.

The proposed extension of Freegold Road would link the Casino Property (km 196) in west central Yukon with the existing maintained road infrastructure (approximately km 60) and the community of Carmacks (Figure 1). This project is located on N.T.S. map sheets 115I/5, 115l/6, 115l/12, 115J/9 and 115J/10 (the barge landing area is within 115J/15). Previous heritage impact assessment work for the proposed extension of Freegold Road was completed and reported under permit 11-04ASR. The current fieldwork was designed to assess potential impacts to heritage resources within road realignments, borrow pits, access roads and the realignment of the existing km 33 to 66 of the Freegold Road. Due to the size of the project it was completed over three sessions: June 19-28, August 1-10, and September 8-13, 2013. The project incorporated First Nation participant throughout the fieldwork.

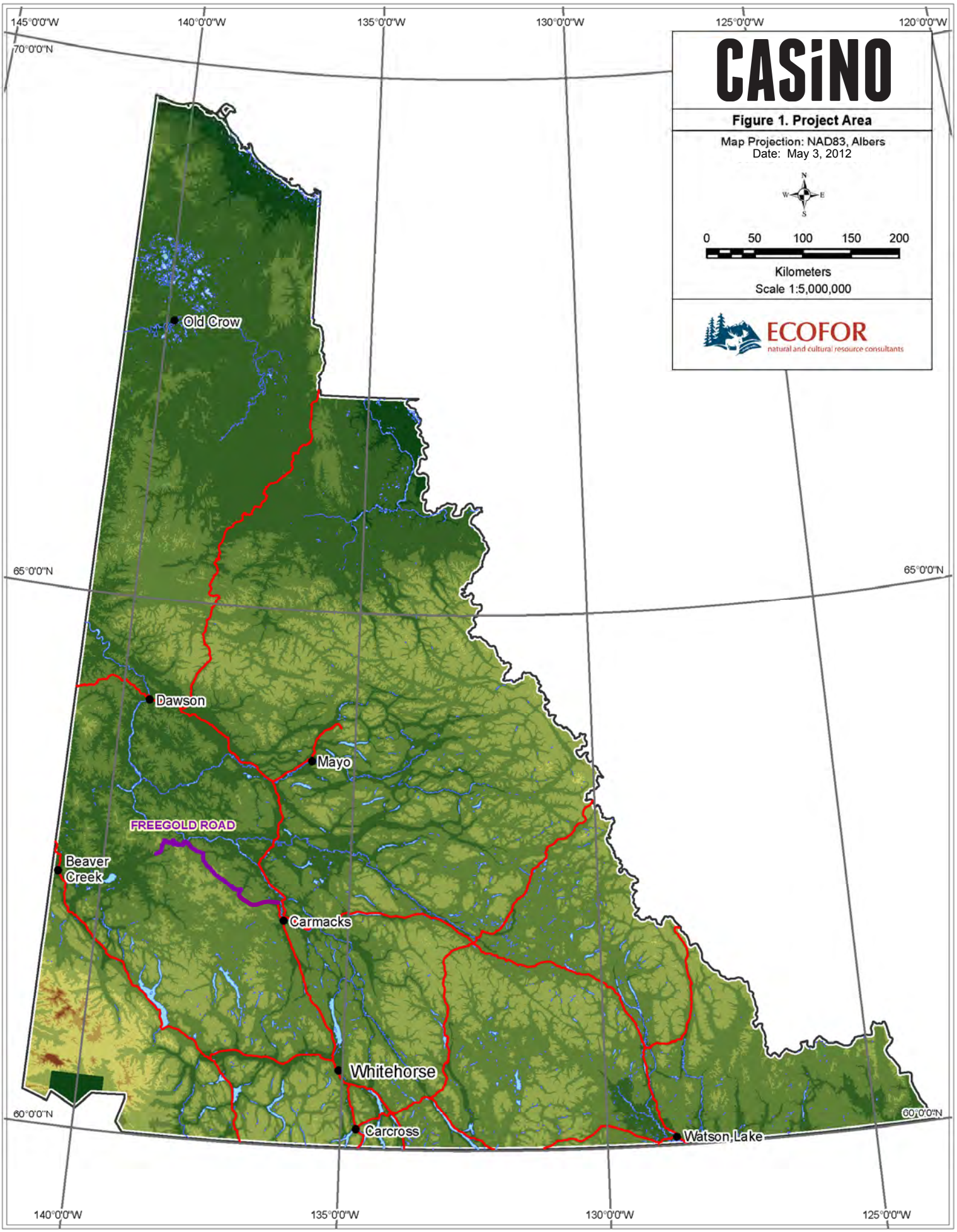
1.2 Personnel

Field crews consisted of Ecofor employees James Mooney, Holly Smith, Pierre-Luc Fortin with field assistance provided by Daniel Alfred and Donald John Alfred of Selkirk First Nation as well as Mario Skookum of the Little Salmon/Carmacks First Nation.

1.3 Report Format

Section 2 provides environmental setting of the project area. Section 3 discusses the culture history of the project area. Section 4 presents the methodology employed, including the inventory, site evaluation, and impact identification and assessment. Section 5 presents the results of the resource inventory conducted and recommendations. Section 6 summarizes the conclusions and recommendations for the project. Section 7 lists the references cited.

Five appendices are included at the end of this report. Appendix I contains the project mapping, Appendix II contains newly recorded archaeological and historic resource site forms, Appendix III contains the artifact catalogues, Appendix IV contains copies of field notes, and Appendix V contains selected photo documents.


CASiNO
Figure 1. Project Area
Map Projection: NAD83, Albers
Date: May 3, 2012
N
W
E
S
0
50
100
150
200
Kilometers
Scale 1:5,000,000
ECOFOR
natural and cultural resource consultants
145°0'0"W
140°0'0"W
135°0'0"W
130°0'0"W
125°0'0"W
120°0'0"W
70°0'0"N
65°0'0"N
60°0'0"N
Old Crow
Dawson
Mayo
FREEGOLD ROAD
Beaver Creek
Carmacks
Whitehorse
Carcross
Watson Lake

2.0 ENVIRONMENTAL SETTING

The combined assessment area falls within two ecoregions; the Yukon Plateau – Central and the Klondike Plateau. Both Ecoregions are part of the Boreal Cordillera Ecozone.

2.1 The Yukon Plateau - Central

The first approximately 30-40 km (southeast end closest to Carmacks) of the proposed preliminary engineered road alignment occurs within the Yukon Plateau – Central Ecoregion. This area is characterized by glaciated plateaus and broad valleys which are surrounded by higher mountain ranges. The Yukon River bisects this ecoregion from south to north and is fed water from the numerous lakes and streams in the area. The Yukon-Plateau reaches as far north as the Tintina Trench and as far south as Lake Laberge. The mean annual temperature for this area is -4°C, with a summer mean of 12°C and a winter mean of -25°C. The most extreme daily temperatures occur in the lowest valley floors and can range from extreme minimums of –60 to –65°C, to extreme maximums near 35°C. Precipitation in the area is usually light, ranging from 250-300 mm a year, with the majority occurring in the summer (Environment Canada 2008).

This ecoregion consists of montane boreal forest. Common flora throughout the Yukon Plateau – Central consists of: black spruce, white spruce, balsam poplar, pine, paper birch, subalpine fir, feathermoss, rose, horsetail, willow, alder, shrub birch, kinnikinnick, grasses, lichen, lingonberry, soapberry, mountain blueberry, crowberry, sagewort, juniper, Labrador tea, shrubby Cinquefoil, *Carex aquatilis* and aquatic plants, shore marshes - graminoid species. Lodgepole pine and trembling aspen are present at some lower elevations.

Wildlife in the Yukon Plateau – Central consists of: shrews, little brown myotis, snowshoe hare, voles, lemmings, muskrats, beaver, porcupine, arctic ground squirrel, grouse, coyote, wolf, red fox, cougar, lynx, wolverine, river otter, marten, mink, black bear, grizzly bear, Dall sheep, stone sheep, moose, elk, mule deer, and caribou.

This part of the project area is dominated by steep sided valley walls drained by Big Creek flowing to the southeast and its tributaries. The north and northeast sides of the valley walls are generally covered in grasses and light vegetation with drier and often more stable soils. In contrast the south and southwest sides of these steep valleys are covered in spruce mixed forest with dense mosses in a cooler, darker less stable soil regime.

2.2 The Klondike Plateau

The remaining approximately 90-100 km of the proposed road alignment, as well as the proposed airstrip and its access road are located within the Klondike Plateau Ecoregion. This area is characterized by smooth topped ridges with some outcrops of exposed rock features known as Tors. These ridges are dissected by deep, narrow, V-shaped valleys. Unlike other ecoregions in the area this plateau has not been glaciated in the recent past. The Klondike Plateau reaches as far south as the Tintina Trench, where the Yukon Plateau – Central ends and extends into east-central Alaska. The mean annual temperature for this area is -5°C, with a summer mean of 12°C and a winter mean of -

27°C. Precipitation in the area ranges from 300-500 mm, with higher levels occurring in the northwest (Environment Canada 2008).

In general forests in the area are comprised of black and white spruce, with sections of balsam poplar, paper birch and trembling aspen. Areas of mixed forests occur in locations where forest fires have recently taken place. There is a vast variation between the high and low elevations, as well as the north and south facing slopes; however, the common flora found in the area consist of: foliose lichens, *Cladina* lichen, feathermoss, horsetail, shrub birch, willow, Labrador tea, alpine blueberry, ericaceous ground shrubs, willow, and water birch alder.

Wildlife in the Klondike Plateau Ecoregion include: caribou, Dall sheep, moose, snowshoe hare, lynx, cougar, wolf, coyote, mule deer, black bear, grizzly bear, wolverines, marten, woodchuck, voles, lemmings, muskrats, beaver, porcupine, arctic ground squirrel, river otter, mink, grouse, and little brown myotis.

This part of the proposed extension of Freegold Road is dominated by higher elevations drained by the Selwyn River and Hayes Creeks flowing northwest as well as the higher elevations closer to Casino Camp drained by many smaller high energy creeks also flowing north into the Yukon River.

The area around the proposed airstrip and its access road are drained by Casino and Dip Creek which flow to the south and southwest respectively. The confluence of Casino and Dip Creek and the Dip Creek Valley in general are both fairly broad and poorly drained. This area contains a relatively higher percentage of wetlands than the steeper and smaller tributaries.

3.0 CULTURAL HISTORY

This study area has not been the subject of many cultural resource studies or investigations prior to efforts near Casino and along the Freegold Road. Therefore, in order to build a context for the area's likely cultural resources, the prehistoric, proto-historic, and historic past land use of a larger area is summarized. While a good deal is known about the historic period, less is known of the prehistoric and proto-historic periods. The following is an overview of the culture history for the broader region including south-central and southwest Yukon and northern BC. Many researchers have reviewed the culture history of this broader area and presented the information using a variety of terms and temporal ranges (Clark 1981; West 1996; Workman 1978, Wright 1995, 1999).

3.1 Prehistoric Period (pre ca 11,000 B.C. to ca A.D. 1847)

The earliest prehistoric 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 radiocarbon years before present (B.P.)(Heffner 2002). The majority of sites appear to date older than 7,000 to 8,000 B.P. 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).

Little Arm Phase dates from 7,000 to approximately 4,500 B.P. (Clark and Gotthardt 1999; Workman 1978) and can be defined by the use of microlithic technologies. After about 4,500 B.P., 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, labeled the Taye Lake phase in southwest Yukon, or more broadly in Yukon and Alaska, 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 Tephra) that is dated to about 1,250 radiocarbon years BP (Clague, et al. 1995).

3.2 Athabaskan Period (ca A.D. 500 to 1847)

In the Athabaskan Period the project area is thought to have been populated by ancestors of the current Selkirk First Nation and the Little Salmon/Carmacks First Nation. It is thought that the First Nation ancestors where ethnically Tutchone Athabaskans (McClellan 1981) and the current road project travels along relatively close to, and north of, the division of Northern and Southern Tutchone areas. From a tool kit perspective, the Athabaskan period has been identified as a shift to stemmed projectile points, the increased use of bone and antler projectile points, and the use of the bow and arrow.

This late prehistoric period is defined by those archaeological components dating after the fall of the White River ash. The Aishihik Phase has been evaluated as ranging from approximately A.D. 750 to A.D. 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 A.D. 750 based on a good sample of dated atlatl dart shafts and bow and arrow remains.

3.3 Proto-historic Period (A.D. 1700s to ca A.D. 1847)

The Proto-historic period, as presented here, also overlaps with late Athabaskan Period and 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 westerners themselves. Other indicators of the proto-historic period are the arrival of the first non-native diseases and information concerning non-natives. This period spans the time between the first introduction of non-native influences or artifacts, and the recording of first hand or primary written accounts. Unlike other cultural periods with more specific temporal ranges it is difficult and perhaps impossible to determine when the first 'outside' influences of Russian, Asian, European or other 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 proto-historic 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. Stories and news of early non-native explorers and traders could 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 call 'drift-iron' whereby metals and other materials from Asian or European shipwrecks washed ashore. 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 ship wrecks off what is now British Columbia, Southeast Alaska, and perhaps the Northwest Alaska as well. Of particular interest is the extent that Chinese exploration reached under the direction of Emperor Cheng Zu in the early 1400s.

3.4 Historic Period (ca A.D. 1847 to the Present)

During the early years of this period the Russians were expanding their exploration and trade network 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, as well as Alaska. In the 1840s, representatives of the Hudson Bay Company established trading posts near the study area. The first was at the confluence of the Yukon and the Porcupine Rivers, northwest of the current project area, where in 1847 John Bell established Fort Yukon. The next year Robert Campbell established Fort Selkirk southeast of the project area on the upper Yukon River and then relocated to an improved location in 1851. This 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).

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 stern-wheel 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 the project area.

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 stern-wheelers 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) McQueston, 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) (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, McQueston, 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 grew. 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 Bonaza 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.

3.5 The Northern Tutchone

The project area falls within the traditional territories of the Little Salmon Carmacks First Nation and the Selkirk First Nation. The traditional language of both of these groups of people is the Northern Tutchone language which is within the Athapaskan language family. A great deal of information concerning the Northern Tutchone people was recorded in oral traditions past on through generations and recorded by various researchers (Dobrowolsky 1987, Gotthardt 1987, Legros 1999; McClellan et al., 1987).

The area of Fort Selkirk played a key role as a gathering spot to trade but also for social gatherings and interactions between a wide variety of people. Many First Nations people across the interior would gather there to trade, share stories and information, and build long term relationships including marriages. After Fort Selkirk was established the area continued to serve as a focal point and a somewhat more sedentary meeting place and community. The far reaching seasonal rounds of travel and resource collection continued but the Fort Selkirk community began to grow with the presence of missionaries, government officials, traders, trappers, miners, and cemeteries.

The traditional seasonal rounds of the Northern Tutchone people saw small groups of people in the winter months from approximately November to April. These small family units were very mobile and hunted, trapped, and fished over a large area. Winter food supplies included dried fish, upland game birds, frozen berries, mushrooms, and bear root while family units sometimes spending more time ice fishing at lakes with abundant whitefish stocks (Gotthardt 1987).

The spring season of approximately from April to June saw families moving more for hunting, trapping, and resource collection which took advantage of new vegetation, spring water fowl, bird eggs, and sap among others.

The summer season was the most abundant and focused on salmon runs in July and August. A large part of the year’s food resources was found in the salmon which was dried for the fall and winter. Moose hunting provided a very significant resource year round. The summer was also a key time for collecting and preparing goods for gatherings to trade with the Tlingit from the coast.

The fall season was critical for large and small game hunting and included a wide variety of resources such as moose, Dall sheep, bears, gopher, and game birds. Short term hunting camps were used across a wide landscape and elevations. Fall was also known as the time to collect and work wood.

3.6 Previous Heritage Investigations

The study area has not received a great deal of previous heritage survey and assessment efforts but a few have been conducted in the adjacent region (Gotthardt 1988). In addition to these efforts, Altamira Consulting Ltd., has also recently conducted fieldwork at the Casino Property in 2009 which is the end target of the proposed Freegold Road (Soucey et al 2010a and 2010b).

Known sites in the area included those identified along or near the south-eastern portion of the road (KcVe-1, KcVe-2, KcVe-3, KcVd-1, KcVd-2, KcVe-3, KdVf-1, KdVf-2, KdVf-3, KdVf-4, KeVg-1, KeVg-2,) and those identified in and near the Casino Property at the north-western end of the proposed road (KeVi-1, KeVi-2, KeVi-3, KeVi-4, KeVi-5, KeVi-6, KeVi-7, KeVi-8, KeVi-9, KeVi-10, KeVi-11, KeVh-1, KeVh-2, KdVi-1, KfVi-1, KfVi-2, KfVi-3, KfVi-4, KfVi-5, and KfVi-6).

In 2011, Ecofor began work on the project and conducted a heritage resource assessment of the proposed Freegold Road Extension (Mooney 2011). During this project 17 new archaeology sites were discovered: KcVe-4, KdVf-5, KdVf-6, KdVf-7, KdVf-8, KdVf-9, KdVf-10, KdVf-11, KdVf-12, KdVf-13, KeVf-1, KeVg-3, KeVg-4, KeVg-5, KeVg-6, KeVg-7, and KeVh-3. The team also revisited site KdVf-4 to better relocate the site and assess its limits. Of particular interest was site KdVf-7 which contained a Chinese coin cast between 1667-1671 in association with chipped lithics, and likely represents a proto-historic site.

Eleven historic resources were also identified as being located near the study area. Two of these cabins near Hayes Creek had been previously recorded as KeVg-1. These resources were recorded in the Yukon Historic Site Inventory (YHSI). They consisted of: the Hayes Creek Cabins (YHSI 115J/09/001); the Five Course Cabin (YHSI 115I/06/001); the Frenchman Cabin (YHSI 115I/06/005); and the Upright Boilers Site (YHSI 115J/09/002); Burl Cabin (YHSI 115/I/06/002); High Cache Cabin (YHSI 115/I/06/003); Big Creek Garage (YHSI 115/I/06/004); Willow Roof Cabin (YHSI 115/I/06/006); and Cabin Creek Cabin (YHSI 115/I/06/007).

In 2011 and 2012 Ecofor Consulting also conducted heritage assessments in association with the Northern Freegold Resources properties which overlap some of the Freegold Road area under permit 11-13ASR (Mooney 2012) and permit 12-03ASR (Mooney 2013). No additional prehistoric sites were identified under either of these permits. However, five historic structures were recorded and added to YHSI. In addition paleontological remains were identified and collected from within the Northern Freegold properties as per communications with the Yukon Heritage Resources Unit.

4.0 METHODS

Field efforts were separated into two main tasks consisting of assessments along the proposed realignments, borrow pits, proposed geotechnical drill targets and access roads from km 66 to the Casino Camp area; and those from km 33 to 66 along the existing Freegold Road. The field efforts for each task included desktop review of project mapping, assessment of areas of heritage potential, in-field review of areas of potential, and sub-surface testing - where potential was rated as moderate to high.

Areas of high potential were transected at intervals of approximately 5 to 15 m apart with shovel testing approximately 5 to 15 m apart. Shovel tests were a minimum of approximately 30 by 30 cm and were be excavated with shovel and trowel as needed into sterile sub soils. All soil matrix were screened though ¼" mesh. Artifacts identified were collected and bagged according to the shovel test unit and stratum, or arbitrary 5 cm vertical interval. The profile of positive shovel tests were recorded by depth below surface and natural and cultural soil strata. All shovel tests were backfilled and returned to as close to natural conditions as possible. If surface finds or subsurface cultural materials were identified additional shovel testing was conducted to assess the vertical and horizontal limits of the site, and to recover a sample of the material culture to assist in the assessment of the site use and cultural affiliation. All sites, isolates, and heritage resources were photographed and the site location will be recorded using a hand-held GPS unit, and a sketch map was prepared in the field. Sites were recorded using temporary site numbers and site data was recorded. Data included setting, access, vegetation, water system information, elevation, soils data including number of cultural strata, features present, and other comments. This information was submitted to Yukon Heritage Branch for site inventory and return of Borden Site number. The condition of sites was also assessed based on the amount of disturbance ranging from relatively intact to destroyed.

Historic and prehistoric sites were recorded and flagged in the field. Field work was completed by crews of two to three individuals (principal investigator, archaeological field technician, and First Nation Participant). A buffer area of 30 m around known historic and prehistoric sites was flagged with yellow "no work zone" ribbon as well as flagging at the centre of the site.

Interim and final reports, site forms, and artifact curation preparations met the Yukon Archaeological Sites Regulations Guidelines for Permit Holders.

If mummified or skeletal palaeontological remains were exposed, Yukon Palaeontology would have been contacted before disturbing them further.

If human remains were identified during operations, all work would have ceased in the area immediately and the R.C.M.P, First Nations, and Yukon Heritage Resources would have been notified.

4.1 Curation of Materials Collected

The Yukon Heritage Resources Unit will serve as the repository for the materials collected. Contact information of the Heritage Resources Unit is provided below.

Heritage Resources Unit
Department of Tourism and Culture
Government of Yukon
P.O. Box 2703, Whitehorse, Yukon Y1A 2C6

Contact: Ruth Gotthardt
Phone: (867) 667-5983
Fax: (867) 667-5377
Ruth.Gotthardt@gov.yk.ca

4.2 Resource Definitions

A *Site* is an area or a place, or; a parcel of land which contains heritage resources or objects.

Historic Sites contain heritage resources that are greater than 45 years in age and posses significant heritage value. By convention, historic sites date to the period for which written records are available; in this case, the historic period commences with the arrival of the Hudson's Bay Company in the early-mid 19th century. Historic sites may include cabins, caches, camps, brush camps, and any other man-made structures, features or objects that date between 1830-50 and about the 1960's.

Archaeological or Prehistoric Sites generally represent use before European contact and are found on or under the ground surface, and may consist of the remains of ancient camps, including hearths, animal bone and stone tools and debris. In this usage, an Archaeological Site equates to a Prehistoric Site (a site that dates to the period before written history). Note, however, that in heritage resource management usage, archaeological resources are viewed as resources that are in subsurface context (buried) and may also include historic period objects and features.

Proto-historic Sites can be viewed as basically prehistoric sites from a time period which includes the effects of foreign historic cultures but lacks the first hand written descriptions of that area. For example, in the Yukon the proto-historic period ends with the appearance of first hand written descriptions in the mid 1800s. However, the proto-historic time period extends back thru time when foreign materials such as "drift-iron" from ship wrecks on the west coast, or foreign trade items were carried into the Yukon. Examples of foreign historic materials which predate the mid 1800s found in prehistoric contexts usually represent this proto-historic period.

5.0 RESULTS AND RECOMMENDATIONS

Field work was completed along the proposed extension and realignment of Freegold Road, proposed borrow pits, possible access roads, and geotechnical drill targets during three sessions: June 19-28, August 1-10, and September 8-13, 2013. For the first and second session the field crew were accommodated at the Casino Camp. During the third session the field crew stayed in a recreational vehicle on Freegold Road.

A total of 47 locations were assessed in the field to possess potential for buried resources. These 47 areas were shovel tested and 15 of them were found to contain prehistoric materials. These were recorded as archaeological sites: KcVd-3; KcVf-2, KcVf-3, KdVi-2; KdVi-3; KdVi-4; KdVi-5; KeVf-3, KeVf-14, KeVg-8, KeVg-9, KeVh-4, KeVi-13, KeVi-14, and KeVi-15.

These efforts also identified six previously unrecorded historic sites consisting of log cabins, caches, and pit features. These resources were recorded and added to the Yukon Historic Site Inventory (YHSI). The past owners of the structures were not known at the time of identification and these resources were recorded with temporary names. These consisted of: the Ketchup Cabin (YHSI 115I/06/009); the Gas Can Cabin (YHSI 115I/06/010); the Melmac Cabin (YHSI 115I/06/011); the Dog House Cabin (YHSI 115I/06/012); the Fallen Cache Cabin (YHSI 115I/03/002); and the Three Room Cabin (YHSI 115J/06/013). In addition a modern cabin and five recent trap trees were identified and flagged in the field. These resources were recorded since they are within and near possible impact areas and would be of concern to stakeholders.

No paleontological remains, grave sites or human remains were identified. All of the newly identified prehistoric and historic sites were flagged with a 30 m buffer of yellow and black "No Work Zone" tape. The trap trees and areas of modern use and ethno-historic trail segments were flagged with white "CMT" tape.

Overall results mapping augmented with shovel test location sketch maps are presented is in Appendix I, while site forms for both archaeological and selected historic resources are in Appendix II. Appendix III contains detailed artifact catalogues, while Appendix IV presents field notes. Appendix V presents selected images of each shovel test location and representative images of sample artifacts and historic resources. The results of these efforts are presented below in prehistoric and historic, as well as modern use areas that may be of concern to related stakeholders.

5.1 Prehistoric Resources

The vast majority of the proposed extension of the Freegold Road was previously assessed in 2011. The current 2013 fieldwork focused on relatively small realignments to the previous proposed alignment, and the addition or revision of borrow pits, geotechnical drill targets, and some possible access roads associated with the borrow pits and the revised alignment.

The prehistoric results are presented first in tabular format as an overview (which also includes areas of negative testing) and secondly in a more detailed site description.

Table 1. Shovel Test Location Results.

STL #	Borden #	Total (+) Tests	Total (-) Tests	Archaeological Potential	Landform	Landform Size	Site Size
J1	KcVf-2	9	6	High	Terrace	35 x 25 m	25 x 20 m
J2	KcVf-3	7	13	High	Ridge	40 x 10 m	40 x 10 m
J3	-	0	9	Moderate-High	Bench	5 x 35 m	-
J4	-	0	10	High	Bench	5 x 20 m	-
J5	-	0	9	Moderate	bench	5 x 25 m	-
J6	KdVf-14	2	0	High	Knoll	5 x 5 m	5 x 5 m
J7	-	0	10	Moderate	Ridge Top	5 x 25 m	-
J8	-	0	5	Moderate-High	Knoll	5 x 10 m	-
J9	-	0	8	Moderate	Knoll	20 x 10 m	-
J10	-	0	4	Moderate	Ridge top	5 x 15 m	-
J11	KeVg-9	4	15	High	Ridge	80 x 5 m	40 x 5 m
J12	-	0	9	Moderate	Break in Slope	30 x 5 m	-
J13	KdVi-2	25	33	High	Ridge	130 x 20 m	90 x 20 m
J14	-	0	24	Moderate	Bench	30 x 25 m	-
J15	KdVi-3	1	13	Moderate	Ridge	40 x 10 m	10 x 10 m
J16	KdVi-4	4	9	High	Ridge	60 x 5 m	40 x 5 m
J17	KdVi-5	2	16	High	Ridge	60 x 5 m	25 x 5 m
J18	KeVi-15	1	8	High	Bench	20 x 10 m	5 x 5 m
H1	-	0	5	Moderate	Bench	10 x 15 m	-
H2	KeVf-3	13	11	High	Terrace	100 x 15 m	50 x 20 m
H3	-	0	17	Moderate	Ridge	100 x 5 m	-
H4	-	0	3	Moderate	Ridge	15 x 5 m	-
H5	-	0	12	Moderate	Ridge Top	60 x 5 m	-
H6	-	0	8	Moderate	Bench	15 x 15 m	-
H7	-	0	8	Moderate	Bench	15 x 15 m	-
H8	KeVg-8	1	64	Moderate-High	Ridge	300 x 5 m	5 x 5 m
H9	-	0	4	Moderate	Break in Slope	10 x 15 m	-
H10	-	0	15	Moderate	Ridge	75 x 5 m	-
H11	-	0	12	Moderate	Bench	15 x 20 m	-
H12	KeVh-4	1	10	Moderate	Bench	30 x 10 m	10 x 10 m
H13	-	0	6	High	Ridge	30 x 5 m	-

Table 1. Shovel Test Location Results Continued.

STL #	Borden #	Total (+) Tests	Total (-) Tests	Archaeological Potential	Landform	Landform Size	Site Size
H100	-	0	6	Moderate	Bench	30 x 5 m	-
H101	-	0	4	Moderate	Rock Outcrop	10 x 10 m	-
H102	-	0	4	Moderate	Knoll	10 x 10 m	-
H103	-	0	6	Moderate	Ridge	15 x 10 m	-
H104	-	0	7	Moderate	Rock Outcrop	15 x 10 m	-
H105	-	0	3	Moderate	Rock Outcrop	10 x 5 m	-
H106	-	0	8	Moderate	Rock Outcrop	40 x 5 m	-
H107	-	0	5	Moderate	Rock Outcrop	25 x 5 m	-
H108	KeVi-13	1	7	Moderate	Knoll	15 x 10 m	5 x5 m
H109	-	0	4	Moderate	Bench	20 x 5 m	-
H110	KeVi-14	1	9	Moderate-High	Break in Slope	15 x 15 m	5 x 5 m
H111	-	0	2	Moderate	Rock Outcrop	10 x 5 m	-
J100	KcVd-3	3	5	Moderate	Ridge	20 x 10 m	10 x 15 m
J101	-	0	6	Moderate	Point	20 x 5 m	-
J102	-	0	4	Moderate	Ridge	20 x 5 m	-
J103	-	0	4	Moderate	Bench	20 x 5 m	-

Borden #: KcVf-2
STL #, Temporary Site #, and name: STL J1, Site J1, Jon Ra Site
Location: See Map 4 – Appendix I
Landform: Terrace
Number of Negative and Positive Shovel Tests: 6 negative and 9 positive
Total Number of Lithic Materials: STP #1: 5 debitage; STP #3: 3 debitage; STP #4: 1 quartz shatter; STP #5: 4 interior flakes, 3 shatter, and 3 debitage; STP #6: 2 debitage; STP #7: 1 interior flake and 2 debitage; STP #9: 1 interior flake; and STP #11: 73 debitage; 17 interior flakes; 3 secondary flakes; 3 shatter; and one microblade fragment.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Little Arm Phase

Assessment: There was no evidence of the White River ash fall in the shovel tests and it appears this site was fairly well used, with a concentration of materials in the north central area of the small terrace overlooking the small drainage to the southeast. This drainage flows southwest into the head waters of Hayes Creek. Cultural materials were found between 0-20 cm below surface and the microblade fragment was found between 0-10 cm below surface (see Figure 2). The lithic scatter likely represents a temporary campsite or lithic reduction workshop which included the use of microblades during the Little Arm Phase.

Soil Description: STP #1 Organic Layer/I 0-3 cm, II = 3-15 cm of reddish brown clay loam, III = 15-20 cm brown clay loam with angular gravel and cobbles increasing with depth, and clay content increases with depth.

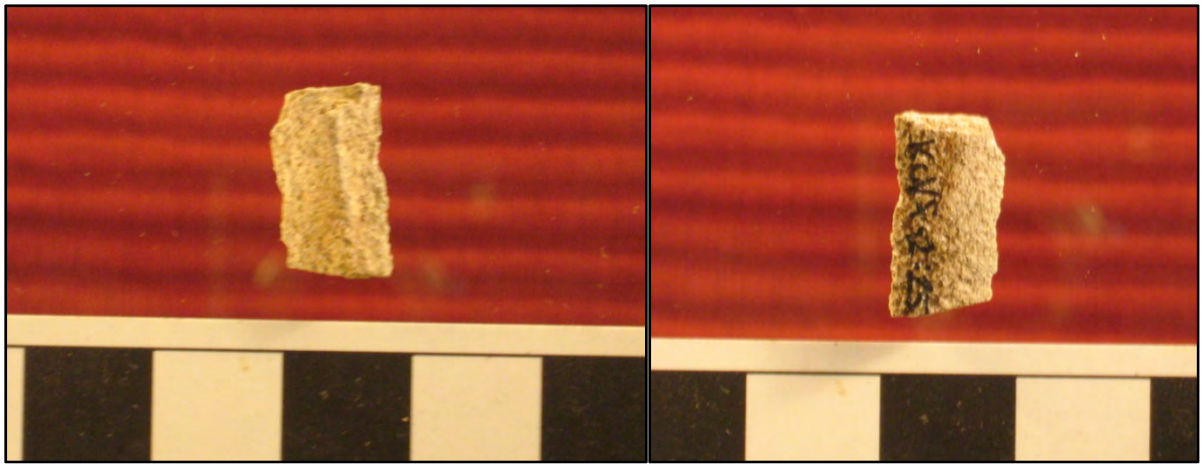


Figure 2. Microblade fragment KcDF-2:25 dorsal and ventral views.

Recommendations: The site is located on the edge of a proposed borrow pit (and possible associated access road) of the Freegold Road extension and would be directly impacted by the proposed developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 12 - 15 square meters of excavation would be recommended.

Borden #: KcVf-3
STL #, Temporary Site #, and name: STL J2, Site J2, Jessie 'a Site
Location: See Map 4 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 13 negative and 7 positive
Total Number of Lithic Materials: STP #5: 3 interior flakes; STP #6: 1 interior flake; STP #8: 1 interior flake; STP #14: 1 utilized flake; STP #15: 1 interior flake and 4 debitage: STP #17: 1 interior flake; STP # 18: 2 interior flakes.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – undetermined

Assessment: These materials were all found on the top of a somewhat "S" shaped ridge overlooking the head waters of Hayes Creek. These materials were found across four areas of the ridge which provides a good vista in all directions. The lithic scatter likely represents a temporary campsite(s) or lithic reduction workshop(s). No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-20 cm below surface. This site overlooks the Jon Ra Site to the southeast.

Soil Description: STP #6 Organic Layer 0-3 cm scattered and thin duff, II = 3-5 cm gray silt, III = 5-20 cm reddish brown clay loam with angular rock and decomposing gravel/bedrock.

Recommendations: The site is located within a proposed borrow pit of the Freegold Road extension and would be directly impacted by the proposed developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 12 - 15 square meters of excavation would be recommended.

Borden #: KdVf-14
STL #, Temporary Site #, and name: STL J5, Site J3, Clear Flake Site
Location: See Map 5 – Appendix I
Landform: Knoll
Number of Negative and Positive Shovel Tests: 0 negative and 2 positive
Total Number of Lithic Materials: STP #1: 15 debitage; and STP #2: 4 debitage.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – undetermined

Assessment: This area was previously noted to include a possible spirit house and grave and was recorded as site KdVf-1. A second site was recorded to the southeast as KdVf-2 which was noted to be a historic cabin located lower in elevation and near a tributary to Hayes Creek. Although this area is not currently planned to be impacted by the proposed project, the area was revisited in an attempt to confirm the presence of a spirit house or possible grave for further heritage management as needed. No structural remains or human remains were identified in either area. This rocky knoll top along the ridge was briefly tested and found to contain prehistoric lithic materials. The lithic scatter likely represents a temporary campsite or lithic reduction workshop overlooking the Hayes Creek valley. No evidence of the cabin was identified on the ground or by helicopter overview. Cultural materials were found between 0-10 cm below surface although the majority were found between 0-5 cm.

Soil Description: STP #1 Organic Layer 0-1 cm scattered and thin, II = 1-4 cm reddish brown sandy loam with ~5% gravel and cobbles, III = 4-10 cm brown sandy loam with ~30% decomposing gravel/bedrock, IV = 10-15 cm brown silt loam with ~50% decomposing gravel/bedrock.

Recommendations: This site is not located within any planned project impacts. However, avoidance of the site is recommended. If this area is planned for any future impacts then additional efforts are recommended to confirm possible grave or spirit house locations with First Nation representatives. A heritage management/data recovery plan should include additional traditional use/traditional knowledge efforts as well as additional shovel testing and possible block excavation.

Borden #: KeVg-9
STL #, Temporary Site #, and name: STL J11, Site J4, Ge Suc Site
Location: See Map 7 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 15 negative and 4 positive
Total Number of Lithic Materials: STP #2: 6 interior flakes; STP #5: 2 shatter; STP #6: 1 flake, STP #14: 1 flake, 1 shatter, and 1 tested cobble.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – undetermined

Assessment: These materials were all found on the east facing side of a north-south descending ridge overlooking the confluence of a tributary to Hayes Creek. This site has a lower section and a slightly higher section and both were found to contain prehistoric materials. What appears to be a historic cultural depression is located at the north end of down slope ridge. A shovel test inside the center of the depression was negative. This depression may have been associated with placer mining activities. The depression is approximately 3 m long, 2 m wide, and 50 cm deep. The lithic scatter likely represents a low density medium sized temporary campsite(s) or lithic reduction workshop(s) overlooking the confluence of the unnamed tributary and Hayes Creek. No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-10 cm below surface.

Soil Description: STP #2 Organic Layer/I 0-6 cm, II = 6-15 cm of dark brown silt loam, III = 15-25 cm reddish brown silt loam, IV = 25-28 cm olive brown silt loam.

Recommendations: The site is located within the proposed extension of Freegold Road. This site would be directly impacted by road construction. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 8 - 10 square meters of excavation would be recommended.

Borden #: KdVi-2
STL #, Temporary Site #, and name: STL J13, Site J5, Gonu-ra Site
Location: See Map 10 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 33 negative and 25 positive
Total Number of Lithic Materials: STP #1: 1 interior flake; STP #2: 2 debitage, 2 interior flakes and 1 microblade; STP #3: 2 debitage, 1 interior flake, 1 shatter, and 1 microblade; STP #4: 8 interior flakes, 38 debitage, 1 shatter, and 1 microblade; STP #5: 1 interior flake; STP #9: 3 interior flakes, and 28 debitage; STP #11: 14 debitage, 6 interior flakes, 2 secondary flakes, 1 microblade, and 2 microblade fragments, STP #12: 1 interior flake, 1 secondary flake, and 6 debitage; STP #13: 3 interior flakes; STP #14: 2 interior flakes, and 2 debitage; STP #16: 3 debitage; STP #17: 1 interior flake; STP #20: 3 debitage; STP #21: 1 interior flake; STP #22: 2 interior flakes; STP #24: 4 debitage; STP #27: 1 interior flake; STP #29: 1 interior flake; STP #32: 5 unidentified mammal bone fragments; STP #35: 1 interior flake; STP #39: 3 debitage; STP #40: 1 interior flake; STP #41: 3 debitage; STP #44: 2 interior flakes, 1 utilized flake, and 3 debitage; STP # 45: 1 interior flake; and STP #49: 1 interior flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Little Arm Phase

Assessment: These materials were found along the north-south climbing ridge overlooking the confluence of Casino and Dip Creeks. This large site was found to contain a wide distribution of lithic materials but the lower section appears to hold the greatest concentration of materials. In particular the areas around STP #4 and STP #11 appear to contain higher artifact densities and also microblades. The lithic scatter likely represents a large site use area but moderate density temporary campsite(s) or lithic reduction workshop(s) overlooking the valley at the confluence of the creeks. This landform may have been used repeatedly; however, thus far the only culturally diagnostic materials identified consist of microblades, which represent the Little Arm Phase. Cultural materials were found between 0-20 cm below surface and the microblades and microblade fragments were also found between 0-10 and 10-20 cm (see Figure 3).

Soil Description: STP #1 Organic Layer 0-2 cm duff, II = 2-8 cm of brown sandy loam, III = 8-22 cm of reddish brown coarse sandy loam, IV = 22-28 cm yellowish brown coarse sandy gravel.

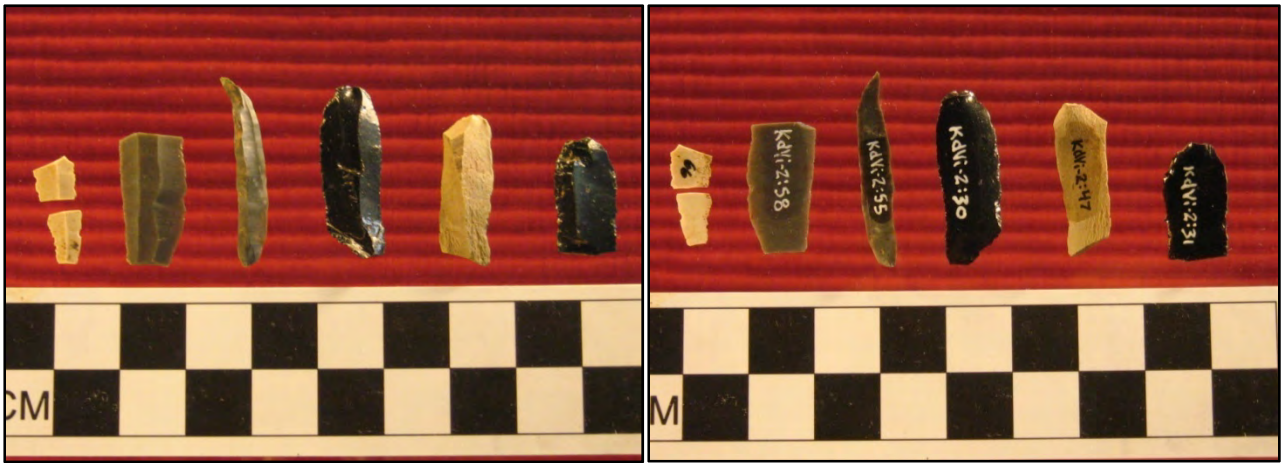


Figure 3. Microblades from KdVi-2 dorsal and ventral views.

Recommendations: The site is located within a proposed borrow pit northeast of the proposed airstrip and would be directly impacted by these developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by separate loci of 1 x 1 m block excavation. Approximately 20 - 28 square meters of excavation would be recommended.

Borden #: KdVi-3
STL #, Temporary Site #, and name: STL J15, Site J5, Altitude Sickness Site
Location: See Map 10 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 13 negative and 1 positive
Total Number of Lithic Materials: STP #1: 2 interior flakes, and 14 debitage.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: These materials were found at the southwest end of an ascending ridgeline overlooking the confluence of Casino and Dip Creeks. The cultural materials were found on a small level area that provides a significant vista over the valley below. The single positive shovel test contained a significant amount of lithic materials which likely represents a moderate density small sized temporary campsite or lithic reduction workshop. No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-10 cm below surface.

Soil Description: STP #1 Organic Layer 0-1 cm duff, II = 1-2 cm of gray silt loam, III = 2-10 cm of gray sandy loam with decomposing bedrock/gravel, IV = 10-20 cm sandy loam and decomposing bedrock/gravel.

Recommendations: The small site is located within a proposed borrow pit northeast of the proposed airstrip and would be directly impacted by these developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 4 - 6 square meters of excavation would be recommended.

Borden #: KdVi-4
STL #, Temporary Site #, and name: STL J16, Site J7, Joe Fortin Site
Location: See Map 10 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 9 negative and 4 positive
Total Number of Lithic Materials: STP #1: 1 interior flake; STP #2: 1 interior flake; STP #8: 1 interior flake; and STP #10: 1 interior flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: These materials were found across a rocky undulating ridge top overlooking the confluence of Dip and Casino Creeks. This landform provides small sections of level ground and a significant vista over the valley area. The lithic scatter likely represents a moderate to low density small sized temporary campsite(s) or lithic reduction workshop(s). No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-10 cm below surface.

Soil Description: STP #1 Organic Layer 0-1 cm duff, II = 1-15 cm of brown sandy loam with angular decomposing bedrock and gravel, III = 15-20 cm yellowish brown sandy loam and decomposing bedrock/gravel.

Recommendations: The site is located within a proposed borrow pit northeast of the proposed airstrip and would be directly impacted by these developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 8 - 10 square meters of excavation would be recommended.

Borden #: KdVi-5
STL #, Temporary Site #, and name: STL J17, Site J8, Madeline Dube Site
Location: See Map 10 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 16 negative and 2 positive
Total Number of Lithic Materials: STP #1: 1 interior flake. STP #16: 1 utilized flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: These materials were found across a somewhat level ridge top overlooking the confluence of Dip and Casino Creeks. This landform provides a fair amount of level ground and a significant vista over the valley area. The lithic scatter likely represents a moderate to low density small sized temporary campsite(s) or lithic reduction workshop(s). No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-20 cm below surface.

Soil Description: STP #1 Organic Layer 0-1 cm duff, II = 1-12 cm of brown sandy loam, III = 12-25 cm light yellowish brown sandy loam with increasing decomposing bedrock/gravel.

Recommendations: The site is located within a proposed borrow pit northeast of the proposed airstrip and would be directly impacted by these developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 6 - 8 square meters of excavation would be recommended.

Borden #: KeVi-15
STL #, Temporary Site #, and name: STL J18, Site J9, 'A gu Site
Location: See Map 10 – Appendix I
Landform: Bench
Number of Negative and Positive Shovel Tests: 8 negative and 1 positive
Total Number of Lithic Materials: STP #2: 2 interior flakes, and 10 debitage.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: These lithic materials were found on the south-facing edge of this small landform which overlooks Casino Creek valley. This well drained bench provides an approximately 360 degree view point and a vista over the valley. The lithic scatter likely represents a moderate to low density small sized temporary campsite or lithic reduction workshop. No culturally diagnostic materials were identified and it is uncertain when these materials were deposited. Cultural materials were found between 0-10 cm below surface.

Soil Description: STP #2 Organic Layer/I 0-1 cm duff, II = 2-12 cm of light brown silt loam, III = 12-22 cm of light yellowish brown coarse sandy loam with cobbles and decomposing bedrock/gravel.

Recommendations: The site is located within a proposed borrow pit northeast of the proposed airstrip and would be directly impacted by these developments. Avoidance of the site is recommended. If

avoidance is not possible then data recovery work under is recommended. Data recovery should include additional shovel testing to help determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 4 - 6 square meters of excavation would be recommended.

Borden #: KeVf-3
STL #, Temporary Site #, and name: STL H2, Site H1, Happy Hill Site
Location: See Map 6 – Appendix I
Landform: Terrace
Number of Negative and Positive Shovel Tests: 11 negative and 13 positive
Total Number of Lithic Materials: STP #9: 1 interior flake, 1 utilized flake, 30 debitage, 15 unidentified faunal fragments; STP #10: 1 interior flake, and 5 debitage; STP #11: 5 interior flakes, and 5 debitage; STP #12: 2 interior flakes, 1 unifacial tool (probable scraper); 4 shatter, and 28 debitage; STP #13: 7 interior flakes, 2 shatter, 22 debitage, and 11 unidentified mammal bone fragments; STP #14: 4 interior flakes; STP #15: 4 interior flakes; STP #16: 4 debitage and 2 unidentified mammal bone fragments; STP #18: 1 microblade, and 1 microblade core; STP #19: 2 interior flakes; STP #20: 4 interior flakes; STP #21: 6 interior flakes, 1 shatter, and 11 debitage; and STP #23: 3 debitage.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Little Arm Phase

Assessment: These materials were found along a narrow rocky ascending ridge line with a higher and slightly wider east end. The lithic scatter was identified across the ridge with two pockets of higher concentrations in the middle (STP's 9 thru 16) and east ends (STP's 18-21 and 23). This ridge line overlooks the confluence of the Selkirk and Hayes Creek and provides a significant vista across the combined valleys. The lithic scatter likely represents multiple moderate to high density small sized temporary campsite(s) or lithic reduction workshop(s). Culturally diagnostic materials consisted of a microblade and a microblade core from STP #18 overlooking the south-facing edge along the east side. The microblade and core were found between 10-20 cm below surface and cultural materials were found between 0-20 cm. The microblade is not a direct refit to the core but it appears to be made of the same material (see Figure 4).

Figure 4. Microblade core KeVf-3:17 and microblade KeVf-3:18.

Soil Description: STP #20 Organic Layer 0-3 cm duff, II = 3-7 cm of organic rich black loam, III = 7-15 cm dark brown clay loam, and IV = 15-20 brown loam and decomposing bedrock/gravel.

Recommendations: The site is located within a proposed borrow pit for the construction of the proposed extension of Freegold Road and would be directly impacted by these developments. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by separate loci of 1 x 1 m block excavation. Approximately 20 - 28 square meters of excavation would be recommended.

Borden #: KeVg-8
STL #, Temporary Site #, and name: STL H8, Site H2, C-Plus Site
Location: See Map 7 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 64 negative and 1 positive
Total Number of Lithic Materials: STP #32: 1 flake fragment.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric Post WRT - probable Aishihik Phase

Assessment: This single lithic flake fragment was found along a narrow ascending ridge running southeast up to the northwest. Significant shovel testing along the ridge to the north and south failed to identify any other cultural materials. This ridge drops quickly to the southeast but provides a good southern exposure and a vista to the southeast over Selwyn Creek. This lithic isolate likely represents a low density small sized temporary campsite, or lithic reduction workshop. No cultural diagnostic materials were identified however this lithic isolate was identified above the White River Tephra. As such this isolate likely represents a Aishihik Phase use of the landform.

Soil Description: STP #32 Organic Layer/I 0-3 cm moss and organics, II = 3-6 cm White River Tephra, III = 6-12 cm brown silt loam, IV = 12-14 cm brown silt loam and decomposing bedrock.

Recommendations: This site is located within a proposed borrow pit which in turn is upslope from the proposed extension of Freegold Road. This site will be directly impacted by the borrow pit development. Due to the amount of testing along this landform and in the area of the isolated lithic it is unlikely that additional efforts will add significantly to the understanding of the past use of this landform. No further heritage work for this site is recommended.

Borden #: KeVh-4
STL #, Temporary Site #, and name: STL H12, Site H3, Rocky Mountain Site
Location: See Map 7 – Appendix I
Landform: Bench
Number of Negative and Positive Shovel Tests: 10 negative and 1 positive
Total Number of Lithic Materials: STP #1: 1 utilized flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: This lithic isolate was found on a high elevation stepped rocky bench and outcrop that overlooks the Idaho Creek drainage. This landform provides excellent view of the valley to the north. This lithic scatter likely represents a low density small sized temporary campsite, lithic reduction workshop. No cultural diagnostic materials were identified and this lithic isolate was identified between 0-10 cm below surface.

Soil Description: STP #1 Organic Layer/I 0-4 cm organic duff, and II = 4-11 cm light reddish brown loam and decomposing bedrock.

Recommendations: This site is located within a proposed borrow pit for the proposed extension of Freegold Road. This site will be directly impacted by the borrow pit development. Due to the amount of testing along this landform and in the area of the isolated lithic it is unlikely that additional efforts will add significantly to the understanding of the past use of this landform. No further heritage work for this site is recommended.

Borden #: KeVi-13
STL #, Temporary Site #, and name: STL H108, Site H101, Ukrainian Site
Location: See Map 8 – Appendix I
Landform: Knoll
Number of Negative and Positive Shovel Tests: 7 negative and 1 positive
Total Number of Lithic Materials: STP #3: 1 interior flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: This lithic isolate was found on a high elevation stepped rocky bench and outcrop that overlooks the Casino Creek drainage. This landform provides excellent view of the valley to the west. This lithic scatter likely represents a low density small sized temporary campsite, lithic reduction workshop. No cultural diagnostic materials were identified and this lithic isolate was identified between 0-10 cm below surface.

Soil Description: STP #1 Organic Layer/I 0-5 cm moss and roots, II = 5-7 cm black organic rich loam; III = 7-10 cm reddish brown loam, and IV = 10-22 cm light reddish brown loam.

Recommendations: This site is located within a proposed borrow pit for the proposed construction of the tailings management facility. This site will be directly impacted by the borrow pit development. Due to the amount of testing along this landform and in the area of the isolated lithic it is unlikely that additional efforts will add significantly to the understanding of the past use of this landform. No further heritage work for this site is recommended.

Borden #: KeVi-14
STL #, Temporary Site #, and name: STL H110, Site H102, Helicopter Site
Location: See Map 10 – Appendix I
Landform: Break-in-Slope
Number of Negative and Positive Shovel Tests: 9 negative and 1 positive
Total Number of Lithic Materials: STP #1: 4 interior flakes and 1 biface/point base.

Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Undetermined

Assessment: This lithic scatter was found on a high elevation stepped rocky outcrop that overlooks the Casino Creek drainage. This landform provides excellent view of the valley to the west. This lithic scatter likely represents a medium density small sized temporary campsite, lithic reduction workshop. The biface base shows evidence of basal thinning and edge grinding and appears to have been hafted (see Figure 5). However it is unlikely that the point base can be used to determine cultural affiliation. Therefore no culturally diagnostic materials were identified and the lithic materials were identified between 0-10 cm below surface.

Soil Description: STP #1 Organic Layer/I 0-2 cm moss and duff, II = 2-8 cm organic rich black loam, and III = 8-20 cm light reddish brown loam.

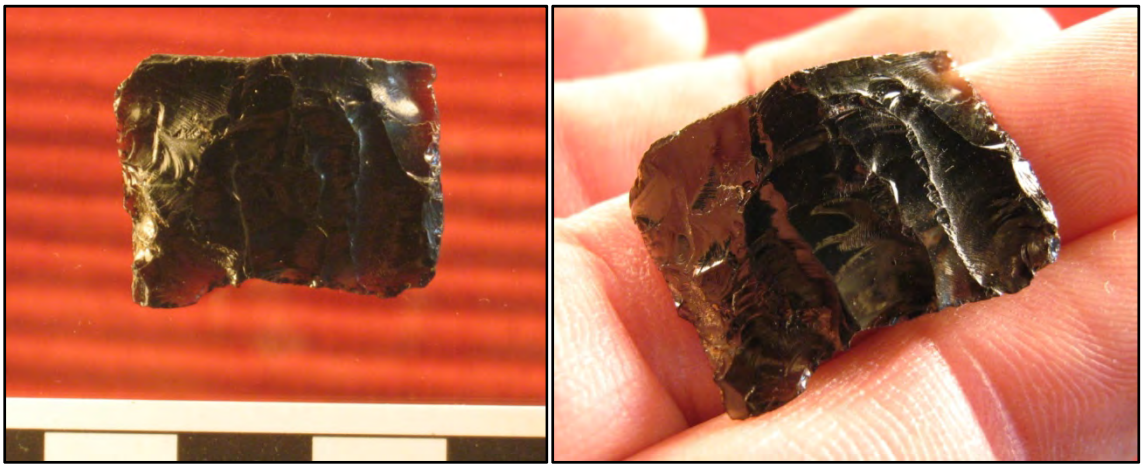


Figure 5. Obsidian biface point base KeVi-14:1 with basal thinning and edge grinding.

Recommendations: The site is located just on the north edge of a proposed borrow pit for the proposed construction of the tailings management facility. This site may be directly impacted by borrow pit use and/or access road construction. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 4 - 6 square meters of excavation would be recommended.

Borden #: KcVd-3
STL #, Temporary Site #, and name: STL J100, Site J100, Teal Site
Location: See Map 3 – Appendix I
Landform: Ridge
Number of Negative and Positive Shovel Tests: 5 negative and 3 positive
Total Number of Lithic Materials: STP #1: 3 interior flakes; STP #4: 6 interior flakes, 2 shatter, 2 secondary flakes, 1 utilized flake, and 1 unifacial tool; STP #6: 1 interior flake.
Diagnostic Materials/Possible Cultural Affiliation: Prehistoric – Pre-White River Tephra.

Assessment: These materials were found on the east end of a rounded ridge overlooking the confluence of Seymour and Big Creeks. This ridge point provides a significant view of both Seymour Creek and Big Creek Valleys. This landform likely contains a low to moderate density of lithic materials and likely represents a small sized temporary campsite, or lithic reduction workshop. No cultural diagnostic materials were identified; however, all of these lithic materials were identified between 40-50 cm below surface, and more distinctly, within 5 cm, directly under a thick deposit of White River Tephra. Of particular interest was the color range of the obsidian materials identified which included a dark green/black and a glossy teal. The unifacial tool fragment exhibited what appeared to be a fresh break but despite close scrutiny no additional refitted fragments were identified in the field (see Figure 6).

Soil Description: STP #1 Organic Layer/I 0-15 cm moss and duff and lightly mineralized soils, II = 15-40 cm White River Tephra, III = 40-60 cm brown/and light reddish brown sandy loam with ~ 40 to 50% cobbles and gravel.

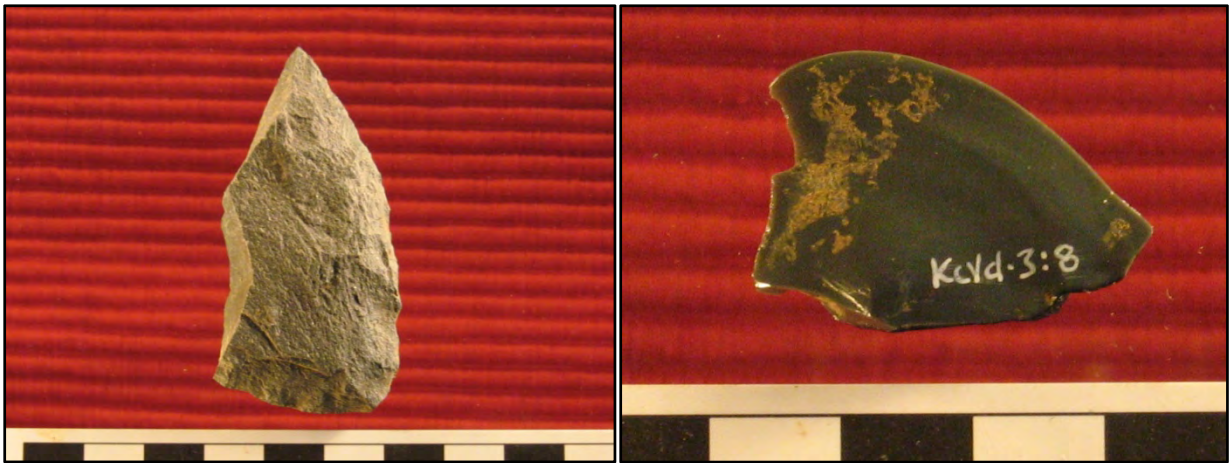


Figure 6. Unifacial tool KcVd-3:5 and utilized flake KcVd-3:8.

Recommendations: The site is located on the north edge of a proposed borrow pit and is also upslope from the proposed extension of Freegold Road. This site will be directly impacted by borrow pit use. Avoidance of the site is recommended. If avoidance is not possible then data recovery work is recommended. Data recovery should include additional shovel testing to better determine artifact distribution and density followed by 1 x 1 m block excavation. Approximately 14 - 18 square meters of excavation would be recommended.

Please Note: Shovel Test Location J12 was located on a narrow point on a terrace overlooking Hayes Creek before it's confluence with the Selwyn River. This is approximately 100 m to the northeast of a proposed borrow pit (see Figure 7 Appendix I). Shovel test pit #6 at this location was found to contain fragments of unidentified large mammal bones and crude lithic shatter fragments. These materials were collected but were determined to be non-cultural after washing and analysis. These materials will be submitted for curation with the Heritage Resources Unit and if this area is planned for impacts, then additional shovel testing is recommended for this landform.

5.2 Historic Resources

Six previously unrecorded historic resources were identified during the 2013 efforts associated with the proposed extension of Freegold Road and ancillary components. These resources were recorded and added to the Yukon Historic Site Inventory (YHSI). The past owners of the structures were not known at the time of identification and were recorded by temporary names. These consisted of: the Ketchup Cabin (YHSI 115I/06/009); the Gas Can Cabin (YHSI 115I/06/010); the Melmac Cabin (YHSI 115I/06/011); the Dog House Cabin (YHSI 115I/06/012); the Fallen Cache Cabin (YHSI 115I/03/002); and the Three Room Cabin (YHSI 115J/06/013). YHSI site forms with summary information regarding these structures are included in Appendix II. All of these are located at the east end of the project area along and near proposed realignments to the existing Freegold Road near Seymour Creek (see Map 2 Appendix I).

In addition, some sections of previously identified historic trails (ethno-historic trails AY-09-18 and AY-09-19) (Soucey et al. 2010a) were walked near and north of the historic cabins at KeVg-1, within areas of potential impact. These sections of the trails near areas of potential impact were flagged with white "Culturally Modified Tree" (CMT) flagging.

Historic Resources Recommendations: Five of the six newly recorded historic structures all appear to be within the planned road realignment and would be directly impacted. Only the pit features and fallen cache feature of the Fallen Cache Cabin are within the proposed road realignment. It is recommended that construction impacts to these historic structures are avoided, were possible. If these resources are not avoided then additional documentation is recommended prior to construction impacts. This additional documentation should include additional on-site recording including site mapping and photo-documentation, as well as interviews with First Nation informants and other stakeholders to better document the history and use of the structures.

Impacts to the previously recorded ethno-historic trails are recommended to be avoided and/or minimized where possible. If impacts to these ethno-historic trails can't be avoided then additional background research, on-site recording, and informant interviews to document use of the trails is recommended.

Previously recorded site KeVg-2, an adze-cut stump, will not be impacted by the current planned impacts and no further work is recommended.

Please Note: An informant interview revealed the possible location of a historic structure which was said to contain the remains of a log cabin which contained the foundation of a stone fireplace/hearth. This structure was said to be on Hayes Creek. The location of the remains have not been confirmed but they are not known to be in danger of the current project. If any additional impacts are planned along Hayes Creek or changes are proposed to existing borrow pits and access roads along Hayes Creek additional assessment efforts are recommended, and the remains should be recorded.

5.3 Reflagging Previously Recorded Sites

At the request of Casino Mining Corp, Ecofor staff also revisited previously recorded sites located within the mine site, airstrip area and access road, and barge landing proposed footprints, in order to reflag the sites and post "No Disturbance Zone" signage on the perimeter of these sites (see Table 2).

Table 2. Sites Revisited for Reflagging and Posting of Signage.

Borden or Temp Site #	Class	Features - Comments
KdVi-1	prehistoric	hearth scatter (bone) scatter (lithic)
KeVi-2	prehistoric	scatter (lithic)
KeVi-1	prehistoric	scatter (lithic)
KeVi-3*	prehistoric - isolated find	isolated find - heavily disturbed area/no evidence of site remains/area was not flagged or signed
KeVi-4	historic	cabin remains
KeVi-5	historic	cabin remains
KeVi-6	prehistoric	scatter (bone) scatter (lithic)
KeVi-7	historic	cabin (log) depression
KfVi-2	undetermined	hearth scatter (bone) scatter (fire cracked rock)
KfVi-3	Historic /prehistoric	house (building, outline) scatter (lithic)
KfVi-4	prehistoric	scatter (bone) scatter (lithic)
KfVi-5	prehistoric	scatter (lithic) - data recovery excavations in 2013
KfVi-6	historic	cabin/depression/dump/scatter (metal)
KfVi-7	indigenous historic	Isolated find - modified ungulate metatarsal endscraper
KfVi-8	historic	tent frame (log)
KfVi-9	historic	Wooden framework box
KfVi-10	indigenous historic	Hide-working frame
KfVi-11	indigenous historic	Hide working stump and pole
KeVi-8	historic	cabin (foundation)
KeVi-9	indigenous historic	CMT - knotted black spruce tree
KeVi-10	indigenous historic	cache (pole)
KeVi-11	indigenous historic	hide working rack
KeVi-12	Indigenous/historic/prehistoric	cut wood (stump, adze)
KfVi-12	indigenous historic	Culturally Modified Tree (bark stripping)
KfVi-13	indigenous historic	Culturally Modified Tree (bark stripping)
KfVi-14	indigenous historic	Culturally Modified Tree (bark stripping)
KdVi-2 Ecofor J5	prehistoric	scatter (lithic)
KdVi-3 Ecofor J6	prehistoric	scatter (lithic)
KdVi-4 Ecofor J7	prehistoric	scatter (lithic)
KdVi-5 Ecofor J8	prehistoric	scatter (lithic)
KeVi-13 Ecofor H101	prehistoric	scatter (lithic)
KeVi-14 Ecofor H102	prehistoric	scatter (lithic)
KeVi-15 Ecofor J9	prehistoric	scatter (lithic)

* Site KeVi-3 was originally recorded as an isolated lithic and the landform was tested but no additional cultural materials were identified. The exact location of the find was not relocated by Alta Mira or Ecofor staff but the area noted to have contained the find is now heavily disturbed and therefore no flagging or signage was placed on site.

5.4 Modern Use Areas and Resources

The field crew also recorded one modern cabin, and five trap trees near the existing Freegold Road. These modern resources are noted here due to expected interests of current stakeholders. The modern cabin is located just above the existing Freegold Road and on the edge of a proposed borrow pit at what was previously known as "Mile 40" and currently at about Km 62 on this project mapping (see page 2 of Appendix I). Due to the relatively modern age of this cabin it was not recorded with YHSI.

This cabin was constructed of milled lumber with a plywood exterior and a metal roof. This cabin is not anticipated to be impacted by borrow pit or road realignment but it is on the south edge of a proposed borrow pit and access to the cabin may be affected during construction.

Figure 7. Modern cabin looking southeast and a sample trap tree south of Freegold Road.

Five trap trees were noted along the south side of the existing Freegold Road between approximately km 37 and km 50 of the current project mapping. Only a sample of them is shown above and not all will be impacted by the proposed realignments of Freegold Road.

No further heritage work is recommended for these moveable traps but consultation with the trapline holder(s) is recommended.

6.0 CONCLUSIONS

The current field work was completed during three sessions: June 19-28, August 1-10, and September 8-13, 2013. A total of 47 locations were assessed in the field to possess potential for buried resources. These 47 areas were shovel tested and 15 of them were found to contain prehistoric materials. These were recorded as archaeological sites: KcVd-3; KcVf-2, KcVf-3, KdVi-2; KdVi-3; KdVi-4; KdVi-5; KeVf-3, KeVf-14, KeVg-8, KeVg-9, KeVh-4, KeVi-13, KeVi-14, and KeVi-15.

These efforts also identified six previously unrecorded historic sites consisting of log cabins, caches, and pit features. These resources were recorded and added to the Yukon Historic Site Inventory (YHSI). The past owners of the structures were not known at the time of identification and these resources were recorded with temporary names. These consisted of: the Ketchup Cabin (YHSI 115I/06/009); the Gas Can Cabin (YHSI 115I/06/010); the Melmac Cabin (YHSI 115I/06/011); the Dog House Cabin (YHSI 115I/06/012); the Fallen Cache Cabin (YHSI 115I/03/002); and the Three Room Cabin (YHSI 115J/06/013). Where possible it is recommended that construction impacts to these historic structures are avoided. If these resources are not avoided then a limited amount of additional documentation, and informant interviews are recommended prior to construction impacts.

No paleontological remains, grave sites or human remains were identified. All of the newly identified prehistoric and historic sites were flagged with a 30 m buffer of yellow and black "No Work Zone" tape. Sites in the vicinity of Casino Camp and the road to the barge landing were also marked with "No Disturbance Zone" signage. None of these sites should be impacted until notification has been made clear from the Yukon Heritage Resources Unit as per the Casino Heritage Resource Management Plan.

Some sections of previously identified ethno-historic trails within areas of potential impact were flagged with white "Culturally Modified Tree" (CMT) flagging. Previously recorded but not flagged historic structures were also flagged with a 30 m buffer of "No Work Zone" tape. A total of five trap trees associated with modern trapping were also identified along the south side of the existing Freegold Road and a modern cabin was also added to mapping due to possible stakeholder concerns.

If this project moves forward it is possible that further revisions in the road and ancillary components may change. It is recommended that any areas of potential impact not previously assessed, are reviewed and assessed in the field prior to future impact. Impacts to recorded historic and prehistoric resources should be avoided were possible, or mitigation efforts should be completed prior to construction impacts. Site by site recommendations are presented above. No further work is recommended for KeVg-8 (Temp Site H2), KeVh-4 (Temp Site H3), KeVi-13 (Temp Site H101).

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