Heritage Resources Impact Assessment for Copper Ridge Lots 519 & 520 – Public Version

Permit 22-20ASR

July 25, 2022

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Executive Summary

This report details the results of the heritage resources impact assessment (HRIA) undertaken by Stantec Consulting Ltd. (Stantec) for Copper Ridge Lots 519 and 520, located within the City of Whitehorse, Yukon. The study area is within the traditional territory of Kwanlin Dün First Nation (KDFN) and Ta'an Kwäch'än Council (TKC). Stantec undertook the HRIA at the request of Government of Yukon, Community Services, Land Development Branch, to support planning in advance of proposed residential development of the lots. The HRIA was carried out under Class 2 Yukon Archaeological Sites Regulation Permit 22-20ASR.

Fieldwork was conducted on July 7th, 2022, by a crew consisting of two Stantec archaeologists and one KDFN field technician. Pedestrian survey was undertaken throughout the study area to identify heritage resources or areas of potential (AOPs) for subsurface heritage resources. One AOP was recorded and assessed through shovel testing. No heritage resources were identified.

No further heritage work is recommended for the study area, which is assessed as low heritage potential.

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Abbreviations

AOP	area of potential
asl	above sea level
ASR	Archaeological Sites Regulations
bs	below surface
GPS	global positioning system
HRIA	heritage resources impact assessment
KDFN	Kwanlin Dün First Nation
TKC	Ta'an Kwäch'än Council
YESAB	Yukon Environmental and Socio-economic Assessment Board

1.0 INTRODUCTION

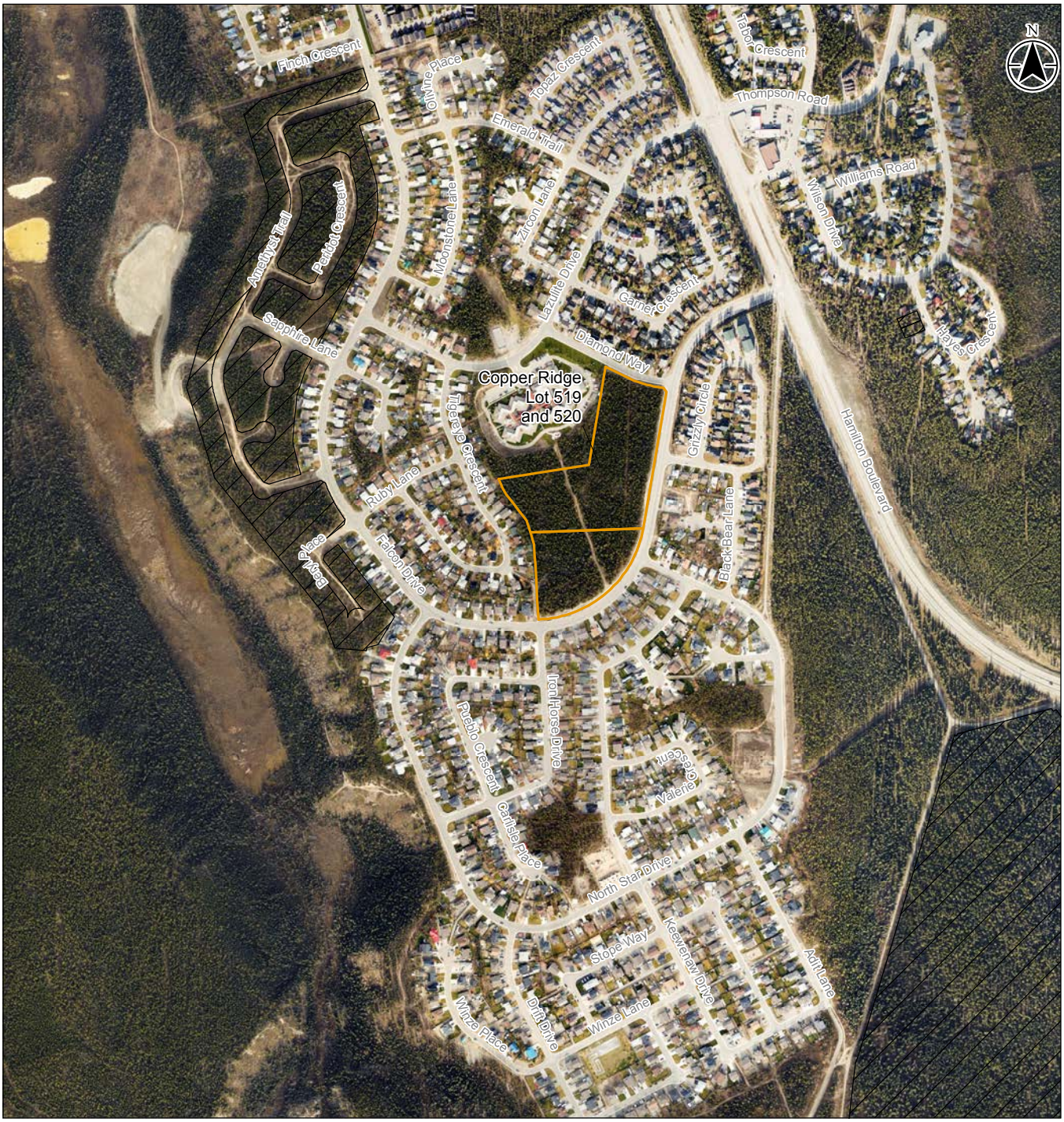
This report details the results of the heritage resources impact assessment (HRIA) undertaken by Stantec Consulting Ltd. (Stantec) for Copper Ridge Lots 519 and 520, located within the City of Whitehorse. The study area is within the traditional territory of Kwanlin Dün First Nation (KDFN) and Ta'an Kwäch'än Council (TKC). Stantec undertook the HRIA at the request of Government of Yukon, Community Services, Land Development Branch. The HRIA was carried out under Class 2 Yukon Archaeological Sites Regulation Permit 22-20ASR.

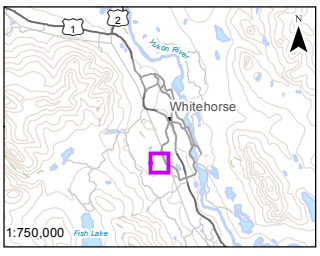
Government of Yukon is planning residential development of Lots 519 and 520, located in Copper Ridge. The HRIA was requested to support planning for the proposed development. No heritage work has taken place within the proposed development area.

Fieldwork was undertaken on July 7, 2022, by a crew consisting of two Stantec archaeologists and one KDFN field technician. Pedestrian survey was undertaken throughout the study area to identify heritage resources or areas of potential (AOPs) for subsurface heritage resources.

The objectives of the HRIA were to identify heritage resources and areas of potential for buried heritage resources within the study area, assess potential impacts that heritage resources could sustain because of the proposed development, and to make recommendations concerning the future management of those resources.

Heritage site location information has been removed from this report so it can be made publicly available (e.g., through submission to the Yukon Environmental and Socio-economic Assessment Board [YESAB] Online Registry).





First Nation Settlement Land

Project Area

0 100 200 300 400 m

1:10,000 (at original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 Yukon Albers
2. Data Sources: Conservation Areas Reporting and Tracking System; Natural Resources Canada

Stantec Yukon

Project Location:
Whitehorse
NTS:105D/11

Project Number: 123222106
Prepared by MYOUNG on 20220712
Requested by MYOUNG on 20220712
Checked by SMACKENZIE on 20220713

Client/Project/Report
Government of Yukon, Community Services
HRIA for Copper Ridge Lots 519 and 520
Permit 22-20ASR

Figure No.
1

Title
Overview Map

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1.1 LEGISLATIVE REFERENCES

Several acts, agreements, and regulations apply to heritage resources within the study area. These include the *Historic Resources Act* (Government of Yukon 2002) and Archaeological Sites Regulation (Government of Yukon 2003a), the *Yukon Territorial Lands Act* Land Use Regulations (Government of Yukon 2003b), the Umbrella Final Agreement (Government of Canada et al. 1993), and the *Yukon Environmental and Socio-economic Assessment Act* (Government of Canada 2003).

The *Historic Resources Act* (Government of Yukon 2002) and Archaeological Sites Regulation (Government of Yukon 2003a) contain legislation that mandates the management and protection of Yukon archaeological, historical, and paleontological resources. This legislation applies to heritage resources on both private and public lands, and archaeological and historical resources that are older than 45 years. Archaeological, historical, and paleontological resources are protected from unpermitted surveys, disturbances, alterations, or excavations.

The *Yukon Territorial Lands Act* Land Use Regulation (Government of Yukon 2003b) contains regulations regarding operations around, and the discovery of archaeological sites. Section 9(a) of the Regulations stipulates that “no permittee shall, unless expressly authorized in their permit or expressly authorized in writing by an inspector, conduct a land use operation within 30 m of a known monument or a known or suspected archaeological site or burial ground.” Furthermore, section 15 states that “Where, during a land use operation, a suspected archaeological site or burial ground is unearthed or otherwise discovered, the permittee shall immediately (a) suspend the land use operation on the site; and (b) notify the engineer or an inspector of the location of the site and the nature of any unearthed materials, structures, or artifacts.”

Other pertinent legislation includes the *Yukon Environmental and Socio-economic Assessment Act* (Government of Canada 2003) which requires that potential effects to heritage resources are considered during review of proposed projects. The Heritage Resource Information Requirements for Land Application Proposals Policy (Operational Policy No. 2011-01) developed by the Yukon Environmental and Socio-Economic Assessment Board outlines the requirement for a heritage resource assessment to be included with any proposal that includes disposition of land.

1.2 FIRST NATIONS REFERRAL AND CORRESPONDENCE

The study area is within the traditional territory of KDFN and TKC. KDFN and TKC were notified of the study prior to undertaking the HRIA. Frank Jim (KDFN) participated in the HRIA fieldwork. No TKC field technicians were available to participate in the HRIA.

2.0 HERITAGE ASSESSMENT DESCRIPTION

The objective of an HRIA is to identify above-and-below-ground heritage resources (such as pre-contact or post-contact heritage sites) and to make recommendations concerning the future management of those resources. The specific objectives of an HRIA are as follows:

- Identify and evaluate heritage resources within the study area.
- Identify and assess impacts to heritage resources which might result from the proposed development.
- Recommend viable alternatives for managing unavoidable adverse impacts, including a preliminary program to:
  - Implement impact management actions, and where necessary
  - Undertake surveillance and/or monitoring

HRIA methods are outlined in Section 4.0, results are discussed in Section 5.0 and displayed on Figure 2. Management recommendations are included in Section 6.0. Digital files containing relevant spatial data were provided to the client, Heritage Resources Unit, KDFN, and TKC to facilitate project planning and heritage resource management.

3.0 STUDY AREA

3.1 STUDY AREA LOCATION

The study area is in the Southern Lakes region of Yukon, within the City of Whitehorse, in the Copper Ridge Subdivision. The nearest significant hydrological feature is McIntyre Creek (1.5 km east).

Terrain within the study area is generally rolling or hummocky. Vegetation in the project area includes recently thinned (fire-smart) pine and spruce forest with recently planted deciduous and occasional willow. Ground cover in the area consists of labrador tea, soapberry, kinnikinic, fireweed, sphagnum moss, lichens, and lupine. Prior ground disturbances within and adjacent to the study area include those associated with road construction and recreational use of the area, including walking paths and recreational vehicle (e.g., ATV) trails.

3.2 PALAEOENVIRONMENTAL BACKGROUND

Glaciation and deglaciation, are primary determinants of contemporary Yukon environment throughout the territory, resulted in complex regionally specific outcomes wherein the environmental and physical conditions both shaped and were shaped by numerous glacial events and processes. A succession of as many as six glaciations and deglaciations are known to have occurred in the Whitehorse area throughout the Late Quaternary (Bond 2004; Duk-Rodkin 2001). Glacial stratigraphy, however, begins with the Late Wisconsin McConnell Glaciation (approximately 20,000 years ago) and the lack of pre-McConnell deposits suggests they have been eroded or buried by subsequent glaciations (Wheeler 1961).
The Whitehorse area is defined by the three geophysical sub-regions (City of Whitehorse 2017, 2018) that were formed by and interacted with the stages of the McConnell Glaciation—the Yukon River valley bottom, the upland terrace/escarpment, and a complex of post-glacial lakes (CoW 2017, 2018).
These landscape features variably interacted with the dynamic glacial history of southwestern Yukon.

3.2.1 Glacial History

According to radiocarbon and palaeobotanical records, the Late Wisconsin McConnell Glaciation occurred from approximately 23,900 to 10,700 years before present, at which time the ice had fully retreated, and vegetation was re-established in the Whitehorse region (Bond 2004). The onset of the glacial advance is assumed to have initiated with the accumulation of ice in the cirques of the Coast Mountains. Alpine glaciers then coalesced creating vast glaciers in major river valleys including the Wheaton River, Bennet Lake, upper Watson River, Takhini River, and Primrose River valleys, which would later coalesce forming the Coast Mountains lobe (Bond 2004). Simultaneously, ice from the Cordilleran Ice Sheet was advancing northward from the Cassiar Mountains of south-central Yukon and northern British Columbia—forming the Cassiar Lobe (Jackson and MacKay 1990).

The first stage of the McConnell glaciation is the onset of glaciation. This is estimated to have begun in the Whitehorse Region between 29,000 and 26,000 years ago (Bond 2004). During stage two, the

Glacial Maximum, ice covered all southern and eastern Yukon. The ice sheet covering the Whitehorse area is estimated to have exceeded 1350 m (Bond 2004). The third stage is Deglaciation, at which time a series of deglaciations and readvances each effectively formed various landscape features in the Whitehorse area (Bond 2004). These events significantly affected sediment deposition, particularly in riverine valleys while also resulting in systems of pro-glacial lakes surrounding the retreating Cassiar Lobe. The Cassiar re-advance resulted in the development of Glacial Lake Champagne when the Cassiar Lobe retreated from the Takhini River valley in the east and blockage of the Dezadeash River drainage by St. Elias ice occurred to the west. Glacial Lake Laberge formed during a subsequent ice recession in the Yukon Valley, reaching elevations of 716 m (88 m above modern Lake Laberge levels) (Birdeau et al. 2011).

During the Ibex sub-stage, Glacial Lake Laberge and Glacial Lake Champagne increased in size while the Ibex River and Fish Lake valleys were dammed creating Glacial Lake McIntyre and Glacial Lake Ibex (Bond 2004). A series of smaller pro-glacial lakes also developed in the Wheaton and Watson River valleys. The subsequent Chadburn sub-stage was another period of stagnation in deglaciation correlating to the development of Chadburn Lake, Lewes Lake and Annie Lake (Bond 2004). Glacial lakes Champagne and Laberge joined following the recession of the Cassiar Lobe from the Takhini River Valley. During the Cowley sub-stage, glacial lake drainages were redirected. Most prominently, Glacial Lake Watson begun draining into the Yukon River (Bond 2004). The Bennett sub-stage is marked by further retreat of the Cassiar Lobe, signifying the height of coverage for glacial lakes in the Whitehorse region (Bond 2004). Lake Laberge was connected with Lake M'Clintock, adding volume and complexity to an already dynamic glacial lake system. The M'Clintock sub-stage is the final stage of deglaciation wherein ice retreated from the Bennett Lake/Windy arm area.

Stage four, the Early Holocene stage is marked by the drainage of the glacial lakes, riverine downcutting into the glaciolacustrine deposits, and aeolian activity (Bond 2004). First, sediment dams built up and were repeatedly incised around Glacial Lake Laberge, resulting in the erosion of the Late Wisconsin glacial deposits in the Yukon River valley bottom (Birdeau et al. 2011). As the Glacial Lake Laberge water level retreated, the Yukon River downcut the glaciolacustrine and morainal deposits to the south (Bond 2004). Meanwhile, drainage of Glacial Lake Champagne is hypothesized to have occurred sometime between 12,500 and 9,000 (Heffner 2008). Additionally, the southern shoreline of the Yukon River delta receded north, depositing deltaic sands over the glaciolacustrine deposits. The Whitehorse dune field, located north of the city, developed from the reworking of these deltaic sands via aeolian processes (Wolfe et al. 2011).

3.3 MODERN ENVIRONMENTAL BACKGROUND

3.3.1 Physical Geography

The Whitehorse area can be categorized by the Yukon River valley bottom, the upland terrace/escarpment, and a complex of post-glacial lakes (CoW 2017 2018). The valley bottom is a fluvial plane with basal sediments of glaciolacustrine silts sometimes overlain by alluvial sands and gravels. Bedrock has not been observed throughout much of the valley bottom but, has been encountered at

depths of nearly fifty metres below ground (CoW 2017 2018). Small wetlands are found in the area and the water table is typically encountered one to two metres below ground. The modern valley bottom was mostly shaped by deglaciation when significant deposition of glaciolacustrine sands and silts occurred.

The upland terrace is an approximately fifty metres high, glaciolacustrine bluff or escarpment bordering the river valley. The southern portion of the terrace is a relatively level plain with basal glaciolacustrine sediments of sands and gravels overlain by silty sand. The terrace was formed simultaneous to the formation of Glacial Lake Laberge which at its maximum height deposited the sediments in the silt bluffs (Barnes 1997; Mouget 1997 and 1998). The northern portion of the upper terrace is characterized by undulating hummocky terrain.

The post-glacial lake complex is composed of glacial outwash sands and gravels forming steep hummocky terrain characterized by remnant pothole lakes, particularly the Ear Lake complex south of the city. These lakes are remnant of deglaciation of the area, specifically a period stagnation in the recession of the Cassiar Lobe.

3.3.2 Climate, Vegetation, and Wildlife

The high mountain ranges surrounding the Whitehorse Region block mild, moist Pacific air from reaching the Yukon interior, producing a rain shadow effect (Wahl and Goos 1987). Consequently, the climate is Subarctic continental, being dominated by the cold, dry Arctic air masses for most of the year, with only occasional intrusions of Pacific air, despite its close proximity to the Pacific coast. Mean annual temperature lies between -2 and -5°C and mean annual precipitation is only 250–300 mm/year (Smith et al. 2004). These environmental factors limit the vegetation to those species that can withstand both cold and dry conditions.
White spruce (Picea glauca) and trembling aspen (Populus tremuloides) are the dominant tree species and have an understory of various shrubs, herbs, and grasses. Woodland areas are punctuated by sedge and grass meadows. In many places one can find grass-covered south-facing slopes while northern exposures are vegetated with closed spruce forests growing on permafrost. Elevation also exerts considerable influence on vegetation patterns (Murray and Douglas 1980). A montane forest zone can be found on the valley bottoms extending upslope to a height of 1300 m asl. At this elevation, trees give way to a subalpine zone of shrubs, which gradually is replaced by an alpine community of low-growing plants above 1500 m asl.

The southwest Yukon's variable environments are mirrored by a diversity of wildlife that is unusual in northern areas (Hoefs 1980). Most vegetation zones have associated mammal communities. Dall sheep (Ovis dalli), mountain goats (Oreamnos americanus), grizzly bears (Ursus arctos), cougars (Felis concolor), marmots (Marmota caligata), and pika (Ochotona collaris) are present in the alpine zone; mule deer (Odocoileus hemionus) and various rodents live near the forest edge; and moose (Alces alces), caribou (Rangifer tarandus), black bear (Ursus americanus), and wolves (Canis lupus) inhabit forested areas. Snowshoe hare (Lepus americanus) and arctic ground squirrels (Citellus parryi) can be found throughout the region and are the basis for much of the higher food chain (Krebs 1980). Fish species occurring in this region include lake whitefish (Coregonus clupeaformis), round whitefish (Prosopium cylindraceum), lake trout (Salvelinus namaycush), northern pike (Esox lucius), and arctic grayling (Thymallus arcticus).

Species found in the territory that occur only in the Yukon River watershed include inconnu (Stenodus leucichthys), broad whitefish (Coregonus nasus), and least cisco (Coregonus sardinella). Only two species of salmon can be found in the upper Yukon system and these salmon bearing streams are located only in the northern reaches of the southwest Yukon (McClellan 1963; Hayes 1892 in Workman 1978:87). Chinook salmon (Oncorhynchus tshawytscha) are reported to spawn in small numbers along the lower portion of McIntyre Creek (CPAWS Yukon 2020:26).

3.4 ETHNOGRAPHY

The study area is within the traditional territory of the KDFN and TKC. KDFN and TKC identify linguistically as Southern Tutchone (KDFN 2021; TKC 2021).

3.4.1 Southern Tutchone Ethnography and Ethnohistory

The following general review of Southern Tutchone ethnography is based on McClellan's (1964, 1975, 1981a, 1987) extensive research with the Southern Tutchone. Emphasis has been placed on the seasonal round and subsistence strategies that are most likely to have left physical evidence of past human use and may have influenced the archaeological record of the study area.

The Southern Tutchone are members of the Athapaskan language family which is broadly distributed throughout large areas of northwestern North America. The primary social groupings of the Crow and the Wolf moieties determined patterns of matrilineal descent, marriage, residency and the allocation of hunting and fishing grounds. The Southern Tutchone did not have a primary political unit, and family groupings were regionally defined by geographical characteristics, even when families may not have lived together for the entire year. The leader or "Chief" of this social unit was often determined by knowledge and hunting ability (McClellan 1975).

The Southern Tutchone seasonal subsistence round involved the summer aggregation of the group at selected fishing camps chosen for the availability of migrating salmon. The main rivers in the Southern Tutchone territory are the Alsek and its tributaries, which drain to the Pacific Ocean; and the Takhini, the upper Yukon, Donjek, Kluane and Nisling, all of which drain into the Bering Sea via the Yukon drainage basin. The five major lakes of Sekelmun, Aishihik, Kusawa, Laberge, and Kluane, along with numerous smaller water bodies, feed the Yukon-White River system. Settlement near these locations involved several families returning to established summer fishing locations each year. A variety of berries and roots were available and constituted an important food source for harvest and storage while at fishing stations and summer base camps.

By late summer, groups dispersed into the upland region to supplement and replenish food stores with a focus on securing game for winter provisions. Meat was generally dried or smoked on racks and stored in caches near the main dwellings (McClellan 1981a). Caribou, moose, mountain goat, sheep, and bear were principal sources of both food and clothing, although smaller species such as hare and marten were also trapped or hunted for their food and fur. In December and January people usually regrouped to share stored foods but once again dispersed in late winter to find game.

The Southern Tutchone traditionally built conical or rectangular lean-tos with a tied pole framework, brush walls and roofs of moss, bark or skin. These structures often housed several families sharing a central fireplace. By the late nineteenth century, some Southern Tutchone began constructing coastal-style rectangular houses of logs or split planks (McClellan 1981a). Several smaller structures were typically erected near the main dwellings, including meat and fish drying racks, racks for boat frames and toboggans, and frames for skin tanning and smoking, as well as small huts for menstruants and parturients. No excavation was required for a main foundation, and evidence of postholes and central hearths are the primary features most likely to be found archaeologically for such structures. Domed tents of caribou or moose hide stretched over sapling frameworks were used by smaller late winter family groups.

A wide variety of implements were used for hunting, fishing and gathering plant foods. Stone tools such as projectile points, knives, scrapers, and flaking debris are commonly recovered from archaeological contexts. The larger suite of implements made of less durable materials including antler, bone, leather, wood and perishable fiber are not well-represented archaeologically due to poor preservation in acidic soil conditions. Many kinds of traps, snares, corrals and hunting blinds were used during ethnographic and historical times and still can be seen on the landscape today. Box and funnel traps were utilized in conjunction with weirs to catch salmon, trout, pike, and large whitefish. Dip nets, gill nets, leisters, hooks, gaffs, spears, and lines were also used to catch fish (McClellan 1981a).

Prior to European contact, interior Tutchone people maintained trade networks with Coastal Tlingit of Alaska and northern BC. Trails and river corridors facilitated the movement of dentalium, copper, Chilkat blankets, eulachon, seaweed, and cedar baskets to the interior in exchange for meat, goat fur, and other goods (McClellan 1964). Russian fur traders introduced a new exchange market in the late 1700s and early 1800s, which was readily incorporated into pre-existing trade networks and focused on sea otter and other fur-bearing mammal pelts. This trade brought kettles, needles, blankets, and eventually guns to the southwest Yukon.

3.5 POST-CONTACT HISTORY

Early European exploration in the southwest Yukon began with those of Frederick Schwatka, who in 1883 undertook a geological and geographical survey for the Unites States military (Schwatka 1898). William Ogilvie and George Dawson also travelled along the Yukon River in southwest Yukon during their explorations for the Geological Survey of Canada in 1887 to 1888 (Dawson 1887).

European settlement began in the region during the Klondike Gold Rush in 1897. The first settlements in the area included Canyon City, above Miles Canyon, and Closeleigh, which was situated across the river from where downtown Whitehorse is today (Sack 1970). These settlements were dependent on Norman Macauley’s tramway which provided the sole means of portage around Miles Canyon and the Whitehorse rapids. Between 1898 and 1900 the White Pass & Yukon Route Railway was built between Skagway and Whitehorse. Once the White Pass railroad was built, the settlements surrounding the tramway were abandoned, with settlement moving to the end of the rail line at Whitehorse. Whitehorse thrived during the Klondike Gold Rush being situated at the end of the rail line and beginning of the steam ship routes to Dawson (Sack 1970).

The next influx of people into the region came with the Second World War and the construction of the Alaska Highway. The construction of the Alaska Highway altered settlement patterns in the area as people moved to higher populated areas for access to schools, wage-labour jobs and medical services. The large influx of military personnel into the Yukon associated with the construction of the highway and the Whitehorse airport also required considerable development for housing (Sack 1970). Many of these housing developments and residential areas became the subdivisions seen in and around Whitehorse today.

3.6 PREVIOUS HERITAGE ASSESSMENTS

No prior heritage assessments have been completed within the study area, and few have taken place in Copper Ridge. There is one previously recorded site nearby the project area, recorded earlier this year (2022) by Stantec under permit 22-07ASR.

The Whitehorse area hosts several important archaeological occurrences, some of which can be dated to the early Holocene. Sites commonly occur on elevated and well drained landforms near hydrological features, such as rivers, lakes, or creeks. McIntyre Creek is approximately 1.5 km west of the project area, flowing north and northeast before meeting with the Yukon River near Whitehorse. Numerous pre-contact heritage sites, including some that have yielded microblades and microblade cores, have been recorded on along McIntyre Creek (CPAWS Yukon, personal communication with Ty Heffner, 2020; Thomas 2005; Rutherford 1997).

3.7 YUKON CULTURE HISTORY

The most comprehensive culture history for the Yukon was compiled by Workman (1978), and the following description follows his work, except where otherwise cited. Major differences between Workman's chronology and that in use today include the conception of a Northern Cordilleran tradition (Clark 1991, 1983; Clark and Clark 1993; Clark and Morlan 1982; Gotthardt 1990; Hare 1995), the recognition of the mid-Holocene Annie Lake Complex (Greer 1993; Hare 1995), and the combination of Workman's Aishihik and Bennett Lake Phases into the Late Prehistoric Period (Hare 1995).

3.7.1 Northern Cordilleran Tradition (>7,000 BP[1])

Increasing evidence for a pre-microblade technological tradition in the Yukon has led many researchers to adopt the Northern Cordilleran tradition as a viable construct in Yukon archaeology. Clark and Clark (1993) would classify any interior site older than 7,000–8,000 BP and lacking microblades as Northern Cordilleran. In many places this technological tradition existed contemporaneously with users of the microblade technology of the Little Arm Phase, and this appears to have been the case in the southern Yukon (Hare 1995). Characteristic artifact forms included large bifaces, blades from informal cores, tools on blades (e.g., transverse notched burins, and burin/scraper/notch combinations), and large, convex based and side notched or lobate stemmed Kamut points (Gotthardt 1990). To this list can be added elongate stone knives (Clark 1991) and bipoints (Hare 1995). The basal occupation of the Canyon

[1] Conventional format for radiocarbon dating, where 'BP' means years 'before present' and 0 BP is defined as AD 1950.

site (JfVg-1), which is radiocarbon dated to 7,195 ± 130 BP, as well as Moose Lake (KaVn-2), which is dated to between 10,670 ± 80 BP and 10,130 ± 50 BP, have both been identified as Northern Cordilleran occupations (Hare 1995).

3.7.2 Little Arm Phase (8,000–5,000 BP)

After about 8,000 BP a distinctive microblade technology spread to many areas of the Yukon and, while it was thought that this technology disappeared after around 5,000 BP, reevaluations suggest that it was present much later (Hare 1995; Hare and Hammer 1997). Clark (1991) accounted for these later microblade assemblages by suggesting that they resulted from hybridization with subsequent cultures. This phase was characterized by microblades, tabular and wedge-shaped microcores, burins, geometric round-based points, and the absence of Taye Lake diagnostics (see below). There were no notched points, and large bifaces and other heavy implements were very rare or absent. Endscrapers were large and narrow, but not abundant, and gravers also occurred. Sites probably represented short stays by small groups, and evidence suggests that the subsistence base was much like the early Taye Lake Phase, and included bison, caribou, moose, and birds.

3.7.3 Annie Lake Complex (5,100–4,600 BP)

Greer (1993) reviewed evidence of a distinctive technological complex in southwestern Yukon that consisted of concave based lanceolate projectile points. She noted that these points have morphological similarities to McKean points on the Plains and Shuswap points from the Plateau and suggested that this may represent a broad cultural interaction sphere. During initial excavations at the Annie Lake site (JcUr-3) Greer (1993) could provide bracketing dates of 4,900–2,000 BP for this complex. With additional work at the site, Hare (1995) determined that the complex dated between 6,200–2,900 BP and is likely restricted to 5,100–4,600 BP (Hare 1995: 130), although he feels that this is tentative. Hare (1995) also added the use of high quality lithic materials and highly curated multipurpose tools as traits of the complex.

3.7.4 Taye Lake Phase (6,000–1,250 BP)

Part of the widespread Northern Archaic Tradition, which Clark (1991) believes developed out of the Northern Cordilleran tradition, the Taye Lake Phase consists of all archaeological materials that are younger than 5,000 BP but predate the White River Ash. This phase was characterized by notched or lanceolate points with straight or slightly concave bases, an abundance of large bifaces, thick unifaces, a variety of endscrapers, and a developed bone industry. Ground stone was present but native copper was not in use. Burins were rare, and gravers were only found sporadically. End scrapers were profuse, of either rounded or angular form, possibly with multiple working edges. This was the only phase where endscrapers had been prepared for hafting. Workman suggested a division of this phase at 3,000–3,500 BP with late traits being tabular schist bifaces and stone wedges, and early traits being notched cobbles and shaped, beveled blades. He saw this division as coincidental with the onset of neoglaciation, the resulting formation of proglacial lakes, and the probable disappearance of grasslands and bison. Large, rich sites were suggestive of seasonal return to favourable locations over a long period of time. Trapping, fishing, and bird hunting likely supplemented big game hunting. On technological grounds, Workman proposed a

population replacement or absorption at the beginning of this phase to explain the many differences and very few similarities between it and the Little Arm Phase but, as Hare (1995: 104–105) noted, technological traditions are not the equivalent of cultural traditions, so population movements are not necessary to account for the differences.

The Taye Lake Phase is somewhat arbitrarily separated from the Late Prehistoric Period by the White River Ash, a useful stratigraphic marker, and, while Workman (1978) saw a great deal of cultural continuity across this horizon, he also felt that the ashfall had catastrophic effects on the people living in the southwest Yukon at the time of the eruption. Coincidental with the eruption, people were coping with other significant changes to the landscape; neoglacial ice had restricted access to the mountains and had caused flooding of the valleys, while at the same time salmon were prevented from reaching the interior, and bison, an important resource, may have disappeared (Workman 1973). As a result, he believed that the area was probably abandoned for several years and people dispersed either north or south, out of the path of the ash.
This proposed exodus may have caused hostility with neighboring groups, whose territory was restricted by the newcomers. Workman (1973, 1978, and 1979) also believed that the migrations, which resulted in the arrival of Athapaskan speakers to the American Pacific Coast and Southwest, were triggered by this eruption. Moodie et al. (1992) offered corroborating evidence by recording oral traditions among Mackenzie Dene that tell of a large volcanic eruption, widespread ashfall, and of their coming to the Mackenzie Valley from over the western mountains. Otherwise, Workman's arguments for cultural upheaval because of the volcanic explosion remain circumstantial.

3.7.5 Late Prehistoric Period (1,250–50 BP)

This period postdates the fall of the White River Ash and includes the introduction of European trade goods near its terminus. It was characterized by native copper implements and flaked stone to a lesser degree. Characteristic artifact types included endscrapers with rounded outlines and thin working edges, and bifaces and unifaces with thin working edges. Burins were absent or very rare, and tabular bifaces and stone wedges (pièces esquillées) reached maximum frequency. Unique traits were native copper, abraded cobbles, multi-barbed bone points, small stemmed Kavik-like points, small side-notched points, and slate pieces with thick, flat ground edges. Those types shared with the Taye Lake Phase were geometric and notched points, multi-barbed bone points, stone wedges, boulder spalls, two endscraper types, flake blade cores, blunted discoids, tabular bifaces, stemless points, broad, thin endscrapers, discoidal flake cores, and other general traits. Small sites probably reflected the ethnographic settlement pattern. Workman (1978) agreed with MacNeish (1964) that forest expansion was probably responsible for the decrease in site size and number but, unlike that author, saw no evidence for increased fishing and trapping at the expense of large game hunting.

Near the end of the Late Prehistoric Period an elaborate bone industry and a growing significance of European trade goods were in evidence. Expected characteristics of this phase included the increased use of metal tools at the expense of stone and native copper, the use of metal pots instead of skin or bark bags and boiling stones, an increase in axe-chopped bones with fewer calcined fragments, an increased

emphasis on fur-bearing animals because of the fur trade, and increased sedentism with log cabin villages being occupied at least seasonally.

4.0 METHODS

The following section describes the methods used for the HRIA. Proposed HRIA methods were outlined in the Class 2 Archaeologist Permit application submitted for the study. Details of the survey transects, surface inspection, and heritage resources identified during fieldwork are discussed in Section 5.0.

4.1 PEDESTRIAN SURVEY

Pedestrian survey was conducted by one crew consisting of three people (approximately 10–15 m apart, with 30–40 m visibility) across the entire study area.

Field personnel surveyed for historical features, surface exposures (e.g., previously disturbed areas, tree throws, cut banks, wind exposures, and areas with limited soil development), prominent topographic features (e.g., saddles, knolls, terraces, and ridge tops), and standing and fallen trees with the potential for cultural modification, to identify above-ground or exposed subsurface heritage artifacts and features. Pedestrian survey was undertaken in snow-free conditions and included a surface inspection of exposures from previously disturbed areas and trails.

Preference was given to stable, well-drained landforms, or sheltered areas situated near water bodies or with vantages of the surrounding terrain. One location was noted as an AOP, which consisted of a well-drained, level area, with vantages of surrounding terrain. The AOP, shovel tests, and survey transects were recorded using GPS and their details were documented in digital notes.

4.2 SUBSURFACE TESTING

Judgmentally placed shovel tests were excavated at the AOP and spaced judgmentally at approximately 5 m. The intent of testing was to determine the presence of subsurface heritage resources where none were visible on the ground surface. Subsurface tests were excavated by shovel and measured approximately 35 cm by 35 cm. Tests were terminated when glacial till or bedrock was encountered. A subsurface stratigraphy log was maintained with representative stratigraphy recorded at the AOP.

Sediments were passed through ¼ inch mesh screen. Subsurface test locations were recorded using a handheld GPS unit.

5.0 RESULTS

This section presents the results of HRIA, including details of the work undertaken at the identified AOP.

5.1 HRIA RESULTS

HRIA fieldwork focused initially on pedestrian survey of the study area to identify surface heritage resources (e.g., culturally modified trees, artifacts visible in disturbed or eroding areas) and to record areas with potential (AOPs) to contain subsurface heritage resources (e.g., buried cultural materials).

One marginal AOP was recorded during pedestrian traverses of the study area, as detailed in Table 1 and depicted on Figure 2. The AOP (Photo 1 and Photo 2) was fully tested and negative for cultural materials. A total of 10 shovel tests were excavated during the HRIA. The study area is within Copper Ridge and there are numerous signs of contemporary use including walking and motorized vehicle trails, vegetation clearing for fire management (fire-smart), recent tree planting, and push piles associated with adjacent roads and trails. The remainder of the study area is characterized by level undifferentiated, hummocky terrain (Photo 3).

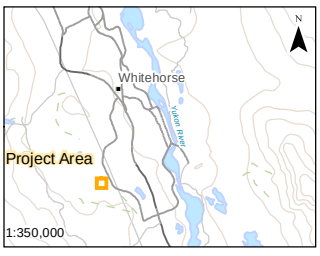
Vegetation in the study area includes recently thinned pine and spruce forest with recently planted deciduous and occasional willow. Ground cover in the area consists of labrador tea, soapberry, kinnikinic, fireweed, sphagnum moss, lichens, and lupine.

Table 1 HRIA Results

AOP Label	Description	Results	Dimensions
AOP 1	Marginal AOP consisting of a moderately elevated knoll approximately 2 m above terrain to the southwest and 3-5 m above terrain to the north and northwest. The knoll-top slopes west generally 2-5°. Intact sides of the feature are undefined and slope gradually toward lower terrain at 5-10°. The eastern edge of the AOP is cut by Falcon Drive, and likely extended east prior to the development of the road. There are no hydrological features in the vicinity of the AOP.	Ten (10) shovel tests excavated, all negative.	34 m north-south x 16 m east-west

5.2 LIMITATIONS OF THE HERITAGE ASSESSMENT

Although a thorough attempt was made to identify heritage resources within the study area, as with all archaeological studies the possibility exists that unidentified resources are present. As such, when viewing the HRIA results it is important to note that low potential does not mean *no* potential.



Surveyed Land Parcel
Project Area
Area of Potential / Shovel Test Area

0 25 50 75 100 m
1:2,500 (at original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 8N
2. Data Sources: Conservation Areas Reporting and Tracking System; Natural Resources Canada

Stantec

Yukon

Project Location:
Whitehorse
NTS:105D/11

Project Number: 123222106
Prepared by MYOUNG on 20220711
Requested by MYOUNG on 20220711
Checked by SMACKENZIE on 20220713

Client/Project/Report
Government of Yukon, Community Services
HRIA for Copper Ridge Lot 519 and 520
Permit 22-20ASR

Figure No.
2

Title
Results Map
Copper Ridge Lot 519 and 520

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6.0 RECOMMENDATIONS

No further heritage work is recommended for the study area, which is assessed as having low heritage potential.

7.0 CLOSURE

Heritage resources are protected from non-permitted alterations or disturbances in the Yukon by the *Historic Resources Act* (Government of Yukon 2002) and the Archaeological Sites Regulation (Government of Yukon 2003a).

To address the discovery of unanticipated heritage resources, it is recommended that, if heritage resources are encountered, the proponent inform their personnel and contractors that all development activities near the heritage resources must be suspended immediately. Information on the identification of commonly encountered heritage resources can be found in the Government of Yukon publication entitled *Handbook for the Identification of Heritage Sites and Features* (Gotthardt and Thomas 2005).

This study was an HRIA and was not intended to evaluate or comment on First Nation traditional use of the study area. The results of this study, therefore, should not be considered valid for that purpose.

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APPENDIX A

Photographs

Appendix A PHOTOGRAPHS

A.1 LIST OF PHOTOGRAPHS

Appendix A Photographs
July 25, 2022

Photo 1 View East to AOP 1

Photo 2 View Southeast from AOP 1

Photo 3 View South from Northern Portion of Project Area