



**2017 TECHNICAL ASSESSMENT REPORT ON THE  
GEOLOGY AND GEOPHYSICS OF THE WASP CLAIMS,  
CARMACKS COPPER PROJECT, YUKON**

**Submitted on May 1<sup>st</sup> 2017**

Whitehorse Mining District, Yukon Territory

NTS 115I07

62° 20' N 136° 41' W

Grant numbers: WASP 1-WASP 89 (YF50879-YF50967).

Owner and operator of claims: Carmacks Mining Corp., a wholly owned subsidiary of Copper North Mining Corp.

Prepared by:

Jack Milton, Ph.D.

Copper North Mining Corp.

Vancouver, BC

July 2016-April 2017

**Table of contents**

<b>1. INTRODUCTION AND TERMS OF REFERENCE .....</b>	<b>2</b>
<b>2. LOCATION AND ACCESS.....</b>	<b>2</b>
<b>3. PHYSIOGRAPHY AND CLIMATE.....</b>	<b>4</b>
<b>4. CLAIM INFORMATION .....</b>	<b>4</b>
<b>5. HISTORY.....</b>	<b>5</b>
<b>6. REGIONAL GEOLOGY .....</b>	<b>8</b>
<b>7. LOCAL GEOLOGY .....</b>	<b>12</b>
<b>8. 2016 EXPLORATION PROGRAM.....</b>	<b>13</b>
<b>9. MAPPING RESULTS.....</b>	<b>13</b>
<b>10. GEOPHYSICAL INTERPRETATION.....</b>	<b>14</b>
<b>11. GEOLOGICAL MAP .....</b>	<b>15</b>
<b>12. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>18</b>
<b>13. STATEMENT OF COSTS.....</b>	<b>19</b>
<b>14. REFERENCES .....</b>	<b>20</b>
<b>15. STATEMENT OF QUALIFICATIONS .....</b>	<b>21</b>
<b>16. APPENDIX 1: Table of Quartz Claim/Lease information.....</b>	<b>22</b>

## 1. INTRODUCTION AND TERMS OF REFERENCE

In 2016 Copper North Mining Corp. staked the WASP claims and conducted a reconnaissance mapping program.

The program was managed by Jack Milton, Ph.D., of Copper North Mining Corp., and the exploration team comprised Nikolett Kovacs, B.Sc.. The claims were staked July 16-19<sup>th</sup> 2016 and a one day mapping traverse was made after staking was complete.

## 2. LOCATION AND ACCESS

The WASP claims are located in the Dawson Range, approximately 200 km north of Whitehorse, or 40 km north-northwest of Carmacks, Yukon (Figure 1). It is located on NTS mapsheet 115I07 at 62° 25' N 136° 40' W. The claims cross Hoochekoo Creek to the north, cross Nancy Lee Creek to the south, and cross the Yukon River to the south-east.

Access to the property is by road and hiking, or by helicopter. The Freegold road runs from Carmacks northwest for approximately 34 km and then the northward Carmacks Copper access road heads for 13 km to the Carmacks Copper camp, crossing Merrice Creek and Williams Creek. The gravel-surface Freegold road is maintained by the government and is readily accessible from spring through fall. The Carmacks Copper access road is narrow and has rough and steep sections, requiring a 4x4 vehicle, especially after heavy rains. From the Carmacks Copper camp, a rough quad or side-by-side trail can be followed to within 1 km of the southern end of the WASP claim block. A few locations suitable for helicopter tow-ins are located within the claim block.

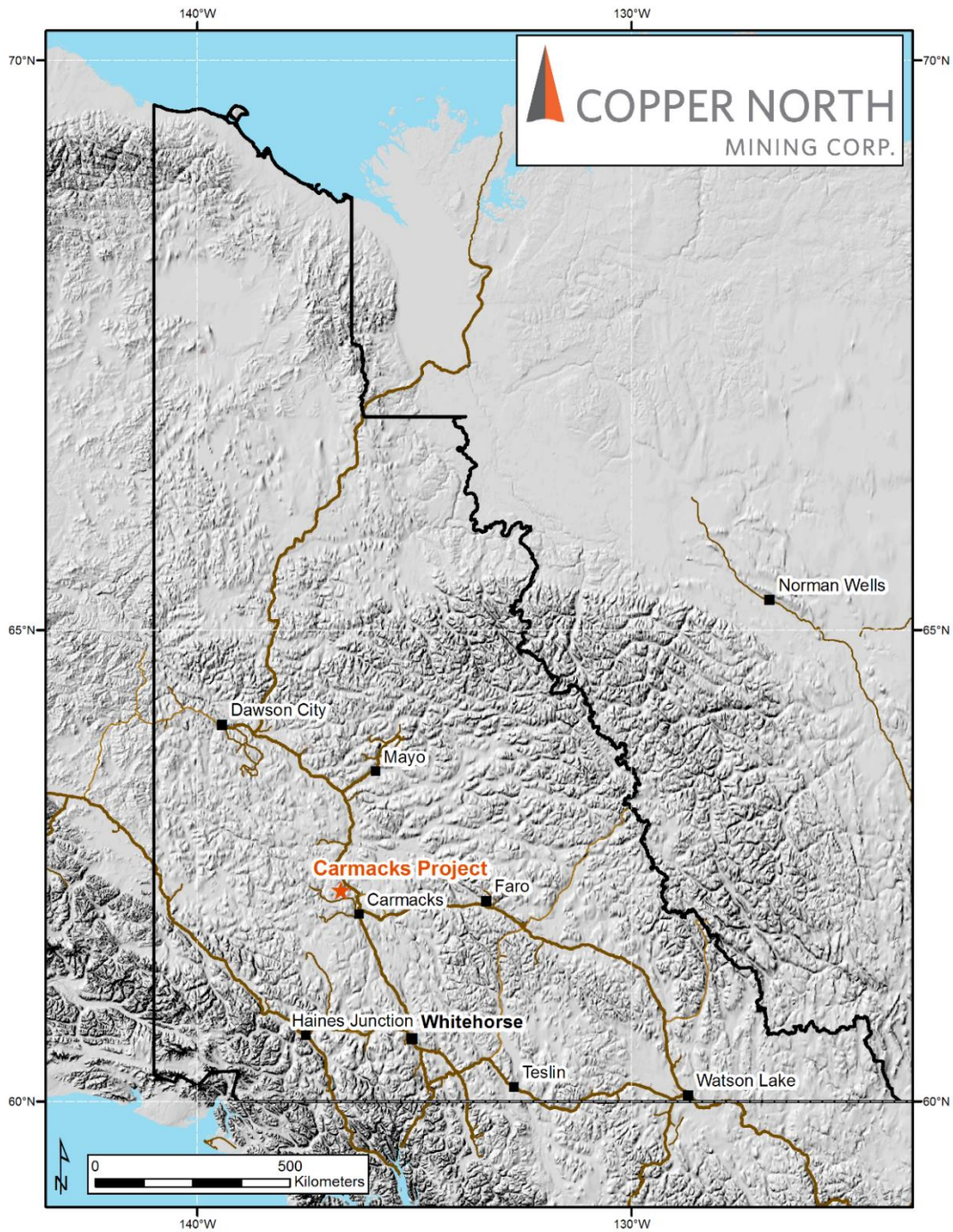


Figure 1 Location of the Carmacks Copper project, Yukon Territory, Canada. The WASP claims are in the northern part of the Carmacks project.

### 3. PHYSIOGRAPHY AND CLIMATE

The property is located in the Dawson Range Mountains. The area is characterized by gently rolling hills that are generally less than 1800 m elevation and are covered by black spruce, white spruce, pine, poplar, birch and alder trees at lower elevations and alpine grasses and scrub willows at higher elevations and in the alpine terrain.

North facing slopes are generally underlain by permafrost and are generally swampy or boggy with much less tree growth and thick sphagnum moss cover. South facing slopes are generally drier and, in some locations, are free of permafrost.

The climate of the property area is generally fairly dry in the summer months with most precipitation occurring in July and early August. In the winter months snow accumulation is generally less than 2 m. Temperatures generally range from -40 °C in the winter to 30 °C in the summer. Snow begins accumulating in mid to late September and is mostly melted by mid to late May. Forest fires can pose a hazard during fire season in dry years.

### 4. CLAIM INFORMATION

The WASP claims are held directly by Carmacks Mining Corp., a wholly-owned subsidiary of Copper North Mining Corp. The WASP claims are in the Whitehorse Mining District and were acquired in accordance with the Yukon Quartz Mining Act. The Carmacks Project consists of 302 quartz mineral claims and 20 quartz mineral leases, covering approximately 4,713 hectares (ha) (Figure 2). An additional 89 contiguous claims comprise the WASP claims over an area of 1,458 hectares (Figure 2), staked in July 2016.

The claims are registered for 100% ownership in the name of Carmacks Mining Corp., a wholly owned subsidiary of Copper North Mining Corp. The claim location map is shown in Figure 2. The detailed claim information is tabled in Appendix 1.

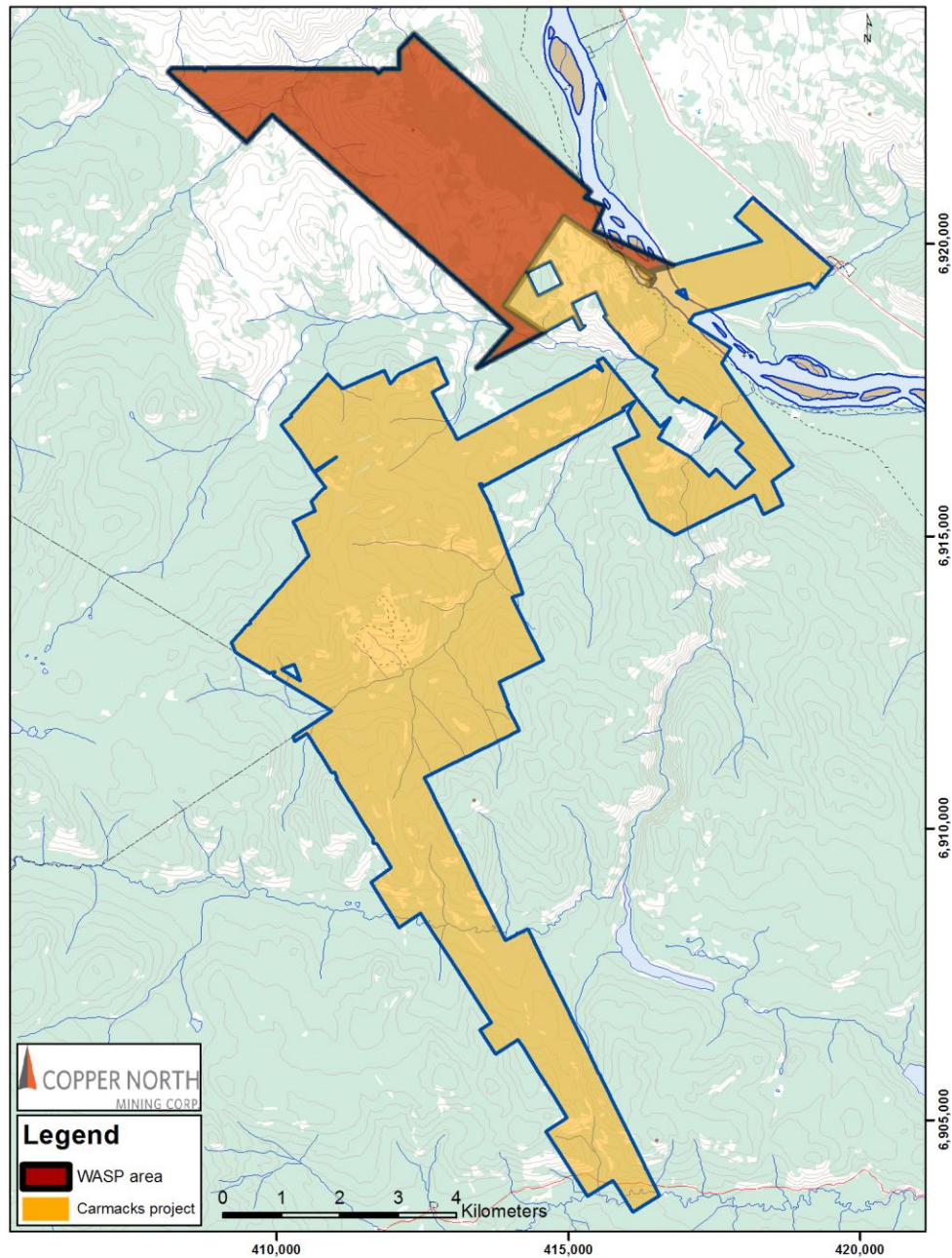


Figure 2 Claim location map for the Carmacks Copper project claims (orange) and the WASP claims (red).

## 5. HISTORY

The following history section relates to the Carmacks Copper project and most recorded activity, unless otherwise stated, took place on the main claim-lease block.

The exploration history of the region dates back to the Klondike Gold Rush of 1898, when placer miners traveling the Yukon River started prospecting along the route. The earliest exploration work in the area was directed to the few outcrops in the Williams Creek, Merrice Creek, Nancy Lee Creek and Hoochekoo Creek canyons. The first claims staked in the region were staked west of the Yukon River on Nancy Lee Creek. There are a number of small adits and workings on the claims targeting quartz-vein copper-gold mineralization. A few tons of copper ore were shipped to the Granby Smelter in 1917. These claims are now Crown Grants.

In 1969, the Casino Porphyry Deposit was discovered, which prompted a staking rush in the region. In March of 1970, the Boy Claims were staked by Whitehorse businessmen, G. Wing and A. Arsenault. The original claims consisted of 134 units. The property was optioned to the Dawson Range Joint Venture (DRJV), later that year. The DRJV consisted of Straus Exploration Inc., Great Plains Development of Canada Ltd., Trojan Consolidated Minerals Ltd. and Molybdenum Corporation of America.

The DRJV conducted a program of prospecting and geochemical sampling in the summer of 1970 and discovered two outcrops with copper oxide mineralization; the No. 1 and No. 2 zones. The discovery prompted the staking of a further 185 claims, some trenching and drilling of two x-ray diamond drill holes in the No. 1 Zone for a total of 103 feet (31.4 m).

In 1971, the DRJV conducted a program consisting of 24.5 km of road building, bulldozer trenching, 108 line-km of grid geochemistry, 27 line-km of VLF-EM geophysical surveying, 48 km of line-cutting, geological mapping, an airphoto survey and 5,583 m of diamond drilling in 25 holes in five separate zones (Zones 1, 2, 3, 5 and 6). Highlights of this program included drill indicated reserves in the No. 1 Zone of 16,334,000 tons grading 1.15% copper at a 0.6% copper cut-off (this reserve figure is not 43-101 compliant). The program also identified copper oxide mineralization in the No. 3 and 4 zones.

In 1972, the DRJV conducted a program consisting of an additional 2.1 km of road construction, bulldozer trenching, 31 km of line cutting, 150 line-km of soil sampling, and 1,531 m of diamond drilling in 8 holes in the No.1, No 4, and No. 8 zones. A recommendation for additional drilling in the No.3, No. 12 and No. 13 zones was made following the exploration program. However, the mining industry went into a slump and no further work was performed for 17 years.

In 1982, the DRJV returned its' interest in the property to Archer, Cathro & Associates, which later sold the property to Archer, Cathro & Associates (1981) Ltd. In 1989, Archer, Cathro optioned the property to Western Copper Holdings Ltd. And Thermal Exploration Company. Western Copper and Thermal conducted metallurgical test work later that year.

In 1990, Western Copper and Thermal upgraded the access road to the property and drilled 322 m in three holes in the Zone 1. Each of the 3 holes intersected copper oxide mineralization. The following year the two companies conducted a program consisting of 3,464 m of diamond drilling in 36 holes; 35 in Zone 1 and 1 in Zone 4. They also dug 22 trenches in zones 1 and 4 for a total of 1,856 m of trenching, surveyed 83.2 line-km of magnetic and VLF-EM geophysics, and initiated baseline environmental studies. The program was successful in delineating and expanding the area of mineralization in Zone 1 and identifying additional copper oxide mineralization in Zone 4.

In 1992, Western Copper and Thermal drilled 1,164 m in 11 holes in zones 1, 4, 12 and 13 and drilled 856 m in 11 Reverse Circulation holes at various locations on the property. The companies also conducted additional metallurgical test work, baseline environmental testing, a biophysical assessment of the area and contracted Knight Piesold Ltd to conduct geotechnical studies on the deposit consisting of test pit excavation, overburden sampling, oriented diamond drill core logging and geologic mapping.

In 1994, the companies expanded the grid on the property and conducted further magnetic and VLF-EM surveying, soil sampling and prospecting. A new area of copper mineralization was identified at the far northern part of the property, the 4000 Zone.

Also in 1994, Kilborn Engineering Pacific Ltd. was contracted to conduct a Feasibility Study. The study indicated that, based on the copper price at the time, the project was viable using open pit mining methods and solvent extraction-electrowinning.

In 1995, the company contracted Knight and Piesold Ltd. to initiate a preliminary mine design and also initiated clearing and grubbing of a site access road and leach pad area. The company submitted a mine permit application later that year.

While the company was awaiting a mine permit, they contracted Kilborn Engineering to produce a basic engineering report, in 1997. The permit was not forthcoming and, due to changing market conditions the company withdrew the permit application. The property sat dormant until the re-initiation of permitting in 2005 and exploration in 2006. During this time the property was consolidated into a single company and it changed its' name to Western Silver Corporation.

In February, 2006 Western Silver Corporation was taken over by Glamis Gold and a new company, Western Copper Corporation, was formed. The Carmacks Copper Property was spun off to Western Copper as part of the arrangement.

In 2006, Western Copper resumed mineral exploration activities on the Carmacks Copper Project after it had lain dormant for 11 years. The company conducted an exploration program that consisted of 7,100 m of diamond drilling in 34 holes, 1,201 m of Rotary Air Blast drilling (RAB) in 61 holes, access road upgrade work, 9.2 km of line-cutting, re-initiation of environmental baseline studies, surveying of drill hole collars and claim posts and re-initiation of the mine permitting process.

In 2007, Western Copper drilled 17,829 m in 123 diamond drill holes, 790 m in 33 overburden geotechnical drill holes and 55 m in one hydro-geological monitoring well. The company also performed line cutting, IP geophysical surveying, prospecting, continuation of baseline environmental studies and engineering work.

In 2008, Western Copper conducted additional geotechnical investigations in preparation for development. A soil sampling and prospecting program was carried out on the HIP-REM claims in 2008, collecting 125 soil samples over the course of 5 days. However, no copper mineralization was identified on the claims.

In April 2009, Western Copper received a Quartz Mining License for the project. On May 10, 2010 the company was notified that the Water License had been denied with a list of deficiencies in the application and design process.

In 2011, Copper North Mining Corp. was spun out from Western Copper, with the Carmacks Copper Project being its key asset. In 2012 a feasibility study was completed for a copper-only heap-leach operation. In 2014, gold and silver recovery were added to the project, encapsulated in a new Preliminary Economic Assessment.

In Copper North's 2014 exploration program, trenching in zone 2 led to the discovery of an additional ~500 metre strike length that was subsequently tested by 10 short diamond drillholes.

In 2015, Copper North carried out a program of ground magnetic surveys, excavator trenching, mapping and 3,271 m of diamond drilling. The drilling led to the calculation of a maiden resource for zones 2000S, 12 and 13, bringing the total oxide Measured and Indicated resource to 15.7 Mt of 0.94% Cu, 0.38 g/t Au and 3.97 g/t Ag, with a further 0.9 Mt of Inferred oxide resource at 0.45% Cu 0.12 g/t Au and 1.9 g/t Ag. The total project sulphide resources were increased to 8.1 Mt of 0.68% Cu, 0.18 g/t Au, 2.33 g/t Ag (M&I) with an additional Inferred resource of 8.4 Mt of 0.63% Cu, 0.15 g/t Au and 1.99 g/t Ag. These resource numbers are totals including Zones 1, 4, 7, 7A, 2000S, 12 and 13.

In 2016, a short ground magnetic and excavator trenching program was carried out, successfully discovering copper mineralization but the showing did not have the size to warrant further investigation. A new Preliminary Economic Assessment was released based around an agitated tank SX-EW process, significantly increasing recoveries and leach times.

## 6. REGIONAL GEOLOGY

The regional geology is shown in Figure 3. Much of the regional geology is taken from Nelson et al. (2013), Allan et al. (2013) and Colpron et al. (2015).

The Carmacks region lies within the Intermontane Belt, which in the Carmacks map-area includes the Yukon-Tanana, Stikine and Quesnellia Terranes that have been intruded by multiple plutonic suites and are covered by younger volcanic rocks or sedimentary sequences of the Whitehorse Trough.

The Yukon-Tanana Terrane includes greenschist to amphibolite metamorphic rocks, plutonic rocks and volcanic rocks of dominantly Devonian, Carboniferous or Permian age. The Stikine and Quesnellia Terranes include rocks of the Joe Mountain Formation and Lewes River Group. The Joe Mountain Formation comprises Middle Triassic mafic-ultramafic intrusives, basalts and volcanoclastic rocks. The Lewes River Group is Upper Triassic and comprises augite phyric basalts, basaltic andesites and volcanoclastic rocks of the informal Povoas Formation and the upper part of the Lewes River Group includes epiclastic rocks and limestones.

The Carmacks Copper project is located within a portion of the Granite Mountain Batholith that is part of the ~204-195 Ma Minto Suite. The Minto Suite is one of several late Triassic-early Jurassic plutonic suites that intrude the Yukon-Tanana, Stikine and Quesnellia Terranes and the contacts between them. The Minto Suite hosts the copper-gold mineralization at the Minto Mine. Weakly-foliated, mesocratic, biotite-hornblende, Granite Mountain Batholith granodiorite contains screens or pendants of strongly foliated to granoblastic feldspar-biotite-hornblende-quartz amphibolite-gneisses that host the Carmacks Copper deposit.

The Whitehorse Trough lies to the east of the Hoochekoo Fault, east of the Carmacks Copper Project. The Whitehorse Trough comprises Lower Jurassic and younger greywacke, shale and conglomerate, derived from the underlying Upper Triassic rocks (Laberge Group). Mesozoic strata of the Whitehorse Trough are in fault contact with the adjacent terranes, or rest unconformably on them.

The late Cretaceous Carmacks Group and mid-Cretaceous Mount Nansen Group volcanic rocks overlie portions of all older rocks and obscure relationships between the older rocks.

The predominant northwest structural trend is represented by the major Hoochekoo, Tatchun and Teslin faults to the east of the Carmacks Copper Project and the Big Creek Fault to the west. East to northeast younger faulting is represented by the major Miller Fault to the south of the Carmacks Copper Project.

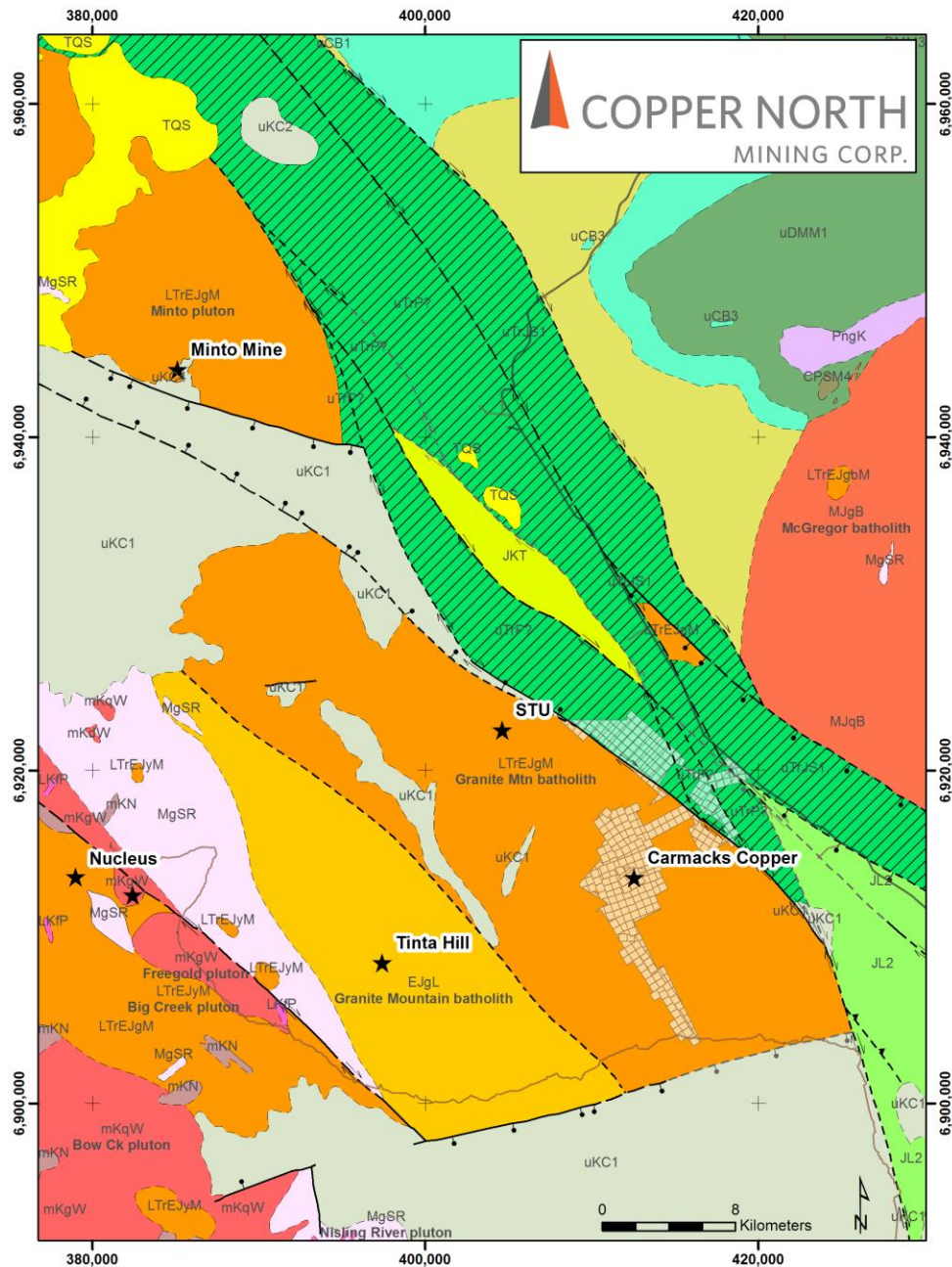



Figure 3 Regional geology surrounding the Carmacks Copper project. Copper North’s claims are overlain on the bedrock geology map from the YGS. Significant mineral occurrences are marked with stars. Legend for geology on following page.

## Bedrock Geology


### TERTIARY(?) AND QUATERNARY


 TQS: SELKIRK: resistant, brown weathering, columnar jointed, vesicular to massive basalt flows; minor pillow basalt; basaltic tuff and breccia (Selkirk Volcanics)


### LATE CRETACEOUS TO TERTIARY


 LKfP: PROSPECTOR MOUNTAIN SUITE: quartz-feldspar porphyry

### MID-CRETACEOUS


 mKdW: WHITEHORSE SUITE: hornblende diorite, biotite-hornblende quartz diorite and mesocratic, often strongly magnetic, hypersthene-hornblende diorite, quartz diorite and gabbro (Whitehorse Suite, Coast Intrusions)

 mKgW: WHITEHORSE SUITE: biotite-hornblende granodiorite, hornblende quartz diorite and hornblende diorite; leucocratic, biotite hornblende granodiorite locally with sparse grey and pink potassium feldspar phenocrysts (Whitehorse Suite, Casino granodiorite, McClintock granodiorite, Nisling Range granodiorite)


 mKqW: WHITEHORSE SUITE: biotite quartz-monzonite, biotite granite and leucogranite, pink granophyric quartz monzonite, porphyritic biotite leucogranite, locally porphyritic (K-feldspar) hornblende monzonite to syenite, and locally porphyritic leucocratic quartz monzonite (Mt. McIntyre Suite, Whitehorse Suite, Casino Intrusions, Mt. Ward Granite, Coffee Creek Granite)

 mKN: MOUNT NANSEN: massive aphyric or feldspar-phyric andesite to dacite flows, breccia and tuff; massive, heterolithic, quartz- and feldspar-phyric, felsic lapilli tuff; flow-banded quartz-phyric rhyolite and quartz-feldspar porphyry plugs, dykes, sills and breccia (Mount Nansen Gp., Byng Creek Volcanics, Hutshi Gp.)


### UPPER CRETACEOUS

 uKC1: CARMACKS: augite olivine basalt and breccia; hornblende feldspar porphyry andesite and dacite flows; vesicular, augite phyric andesite and trachyte; minor sandy tuff, granite boulder conglomerate, agglomerate and associated epiclastic rocks (Carmacks Gp., Little Ridge Volcanics, Casino Volcanics)


 uKC2: CARMACKS: andesite


 uKC4: CARMACKS: medium-bedded, poorly sorted, coarse- to fine-grained sandstone, pebble conglomerate, shale, tuff, and coal; massive to thick bedded locally derived granite or quartzite pebble to boulder conglomerate (Carmacks Gp.)

### UPPER JURASSIC AND LOWER CRETACEOUS

 JKT: TANTALUS: massive to thickly bedded chert pebble conglomerate and gritty quartz-chert-feldspar sandstone; interbedded dark grey shale, argillite, siltstone, arkose and coal; at one locality includes red-weathering dacite to andesite flows at base (Tantalus)


### MID-JURASSIC

 MJqB: BRYDE SUITE: medium to fine grained, equigranular, leucocratic monzonite, syenite and granite and related dykes of dacite to andesite porphyry with euhedral andesine, hornblende and locally quartz in aphanitic greenish, or grey groundmass (Teslin Crossing Stock)


 MJgB: BRYDE SUITE: medium grained, hornblende monzodiorite, hornblende-biotite quartz monzodiorite and minor hornblendite; pink, potassium feldspar megacrystic, hornblende granite to granodiorite and associated easterly trending mafic dyke swarms (Mt. Bryde Pluton; Bennett Granite)

### EARLY JURASSIC

 LTrEjM: MINTO SUITE: syenite

 LTrEjgM: MINTO SUITE: medium- to coarse- grained, variably foliated to massive biotite-hornblende granodiorite; biotite-rich screens and gneissic schlieren; foliated hornblende diorite to monzodiorite with local K-feldspar megacrysts (Minto Suite)


 LTrEjgB: MINTO SUITE: gabbro

 EJgL: LONG LAKE SUITE: massive to weakly foliated, fine to coarse grained biotite, biotite-muscovite and biotite-hornblende quartz monzonite to granite, including abundant pegmatite and aplite phases; commonly K-feldspar megacrystic (Long Lake Suite)


### LOWER AND MIDDLE JURASSIC, HETTANGIAN TO BAJOCIAN

 JL2: TANGLEFOOT:

### UPPER TRIASSIC, CARNIAN AND OLDER (?)

 uTrP?: POVOAS: augite or feldspar phyric, locally pillowed andesitic basalt flows, breccia, tuff, sandstone and argillite; local dacitic breccia and tuff with minor limestone; greenschist, chlorite schist, chlorite-augite-feldspar gneiss, amphibolite (Povoas)

### UPPER TRIASSIC TO LOWER JURASSIC


 uTrJS1: SEMENOF:


### LATE DEVONIAN TO MISSISSIPPIAN

 MgSR: Simpson Range - tonalite, diorite

### UPPER CARBONIFEROUS, LOWER AND MIDDLE PENNSYLVANIAN

 PngK: KELLY STOCK: tonalite orthogneiss

 uCB1: BOSWELL: recessive, dark weathering, slate, phyllite, greywacke chert, chert conglomerate and breccia, volcanic breccia, greenstone and limestone (Boswell)

 uCB3: BOSWELL: massive, dark weathering, coarse to medium grained, hornblendite-gabbro (Boswell)

 uDMM3: Moose - interm. volc.

 uDMM1: MOOSE: basalt, greenstone

### CARBONIFEROUS TO PERMIAN

 CPSM4: SLIDE MOUNTAIN: ultramafic

## 7. LOCAL GEOLOGY

Most of the geological information for the Carmacks Copper Project comes from geophysics, drill core and trenches, as there is only limited outcrop on the property found along spines on the ridges and hill tops. Float, derived locally because the area was not glaciated by continental glaciation, can be seen in the old trenches on the property and along the cuts of the drill roads.

The Carmacks copper-gold-silver deposit is enclosed within the late Triassic-early Jurassic Granite Mountain Batholith. The copper mineralization is hosted by amphibolite, gneisses, and intrusive rocks that range from granodiorite to diorite. Copper mineralization occurs along a linear trend, following a brittle-ductile deformation zone.

The deposit is sub-divided into several zones, each comprising a tabular raft of amphibolite-gneisses that dip steeply to the east and are up to 100 metres wide, strike up to 700 metres and persist down-dip to at least 450 metres, being open at depth. Exploration has identified at least 14 mineralized zones comprising steep easterly dipping zones that occur along a strike length of at least 5 kilometres. The discoveries also include local zones of mineralization that appear sub-parallel to the main mineralized structure. The rafts of copper bearing amphibolite-gneisses are enclosed within a younger granodiorite batholith as roof pendants or partially digested rafts. The copper mineralization at depth comprises copper sulphides bornite and chalcopyrite. Gold and silver accompany the copper mineralization; higher gold grades are associated with the more bornite-rich areas.

The typical host rock for the hypogene mineralization is a dark grey to black hornblende-biotite amphibolite with a pervasive foliation. The amphibolite varies from massive to bearing relict hornblende phenocrysts (or hornblende after pyroxene) and may represent variation in the, possibly volcanic, protolith. Locally, the amphibolite becomes more gneissic where mineralogical and colour segregation occurs. The content of mafic minerals is variable from ~50% to ~100%. Locally, the amphibolite lacks a penetrative fabric and appears to have recrystallized to granoblastic amphibolite, perhaps from the heat of the adjacent granodiorite intrusions. Sulphide mineralization in the amphibolite is typically foliaform with some discordant sulphide veinlets. Diorite is also host to sulphide mineralization, where chalcopyrite and bornite occur interstitially between hornblende crystals as a net-texture. Alteration phases include proximal potassic (K-spar-Bt) alteration and hematization.

Deformation is seen to increase towards the mineralized zones, suggesting that an underlying structure may be a control on the mineralization. There is a complex magmatic-deformation history involving multiple phases of granitoid intrusions, boudinage and faulting. There are at least two stages of pegmatite-aplite intrusions, each associated with epidote alteration. Along the margins of the amphibolite bodies, migmatization has occurred, producing melanosome and leucosome interfingered with the amphibolite.

The mineralization is cross-cut by barren late phases of the Granite Mountain Batholith including K-feldspar porphyritic granodiorite, aplite and pegmatite. The porphyritic phases contain phenocrysts of K-(potassium) feldspar, plagioclase and/or quartz. In some instances, the K-feldspar phenocrysts range up to 3 cm long. Post mineralization granitic pegmatite and aplite dykes are widespread in the area and range from a few centimetres to approximately three metres in thickness. Hornblende is present in dioritic intrusive rocks and locally in the

granodioritic phases. Quartz, K-feldspar and plagioclase are present in all intrusive phases. Plagioclase is subhedral and very locally displays growth zoning. Petrographic examination indicates Granite Mountain granodiorites have a varied mineralogical content with areas of silica under-saturation and plagioclase oversaturation. These variations may be the result of the assimilation of precursor rock to the amphibolite-gneiss units.

The combined strike length from the northern end of Zone 1 to the southern tip of zone 12 is just over 2 km. The character of the deposit changes along strike leading to a division into northern and southern halves. The northern half is more regular in thickness, dip angle, width and down dip characteristics. The southern half splays into irregular intercalations, in zones 7 and 7A, terminating against sub-parallel faults down dip.

Zones 12 and 13 are located 1.2 km south of Zone 1 and occur over a strike length of 1.2 km and up to 100 m in width. The mineralization in Zones 12 and 13 is hosted by less mafic amphibolite and gneisses than those found in Zone 1. The gneisses are highly silicified and K-feldspar altered; the gneissic texture may be the result of alteration along closely spaced parallel planes, rather than the product of high strain. The gap between Zones 12 and 13 has not been drill tested and it is unclear as to whether mineralization is continuous between the two zones. In Zone 12, the mineral zones bifurcate and split into several parallel zones and are affected by post mineralization faulting.

The Carmacks Group is a late Cretaceous, post-mineralization sequence of andesitic-basaltic volcanic rocks and basal conglomerates and sandstones. The Carmacks Group is present in across the property in several areas, but most prominently affects mineralization in Zones 13 and 14 where it forms a fault-bounded segment of cover rocks. Thin mafic dykes that were feeders for Carmacks Group volcanic are uncommon.

## 8. 2016 EXPLORATION PROGRAM

The 2016 exploration program comprised one day of mapping outcrop and subcrop across the WASP claims. Based on the results of the mapping, the geophysical data was compiled for the property and the geology was re-interpreted using all of these data. No copper mineralization was discovered during mapping the WASP claims.

## 9. MAPPING RESULTS

The regional geological mapping data from the Yukon Geological Survey indicates a significant, northwest trending strike-slip fault that separates the Povoas Formation of the Lewes River Group from the Granite Mountain Batholith in the area of the WASP claims (Figure 3). This fault is mapped as approximately following the south-western margin of the WASP claim block, implying that the Povoas Formation underlies the vast majority of the claims.

Scattered outcrops of mafic augite-phyric basaltic volcanic rocks, interpreted to be part of the Povoas Formation were found across the north-eastern half of the WASP claims (see Figure 4). The basalts are variably deformed: a penetrative foliation is developed and augite phenocrysts have been pseudomorphed by hornblende porphyroblasts.



*Figure 4 Weakly foliated augite phyric basalt, tentatively correlated with the Povoas formation, Lewes River Group. Left to right field of view is 11 cm. Sample taken from the WASP 48 claim at NAD83 UTM Z8N (412,215 – 6,921,567).*

In the southwestern half of the WASP claims, subcrop of hornblende-biotite granodiorite was the only lithology encountered. These granodiorites are interpreted as part of the Granite Mountain batholith and this implies that the strike-slip faulted contact is further north-east than originally mapped.

In the eastern part of the WASP claim block, outcrops of polymictic conglomerate were observed on the steep slopes leading down to the Yukon River. These are tentatively correlated with the Jurassic sedimentary sequences of the Whitehorse Trough: the Tanglefoot formation of the Laberge Group.

## 10. GEOPHYSICAL INTERPRETATION

Compilation of regional government airborne magnetic survey data, shows that a significant linear magnetic anomaly separating a magnetic high from a magnetic low strikes NW across the property (Figure 5). The magnetic high to the north-east correlates with outcrops of the mafic volcanics, whereas the low to the south-west correlates with granodiorites of the Granite Mountain Batholith. This supports the interpretation that the granodiorite-volcanic contact lies further NE than previously mapped. The relatively homogeneous magnetic low in the area of the granodiorite subcrop and the lack of volcanic subcrop or outcrop in this area suggests that the magnetic low is a large intrusive body of rock, rather than isolated granodiorite intrusions cutting the volcanics.

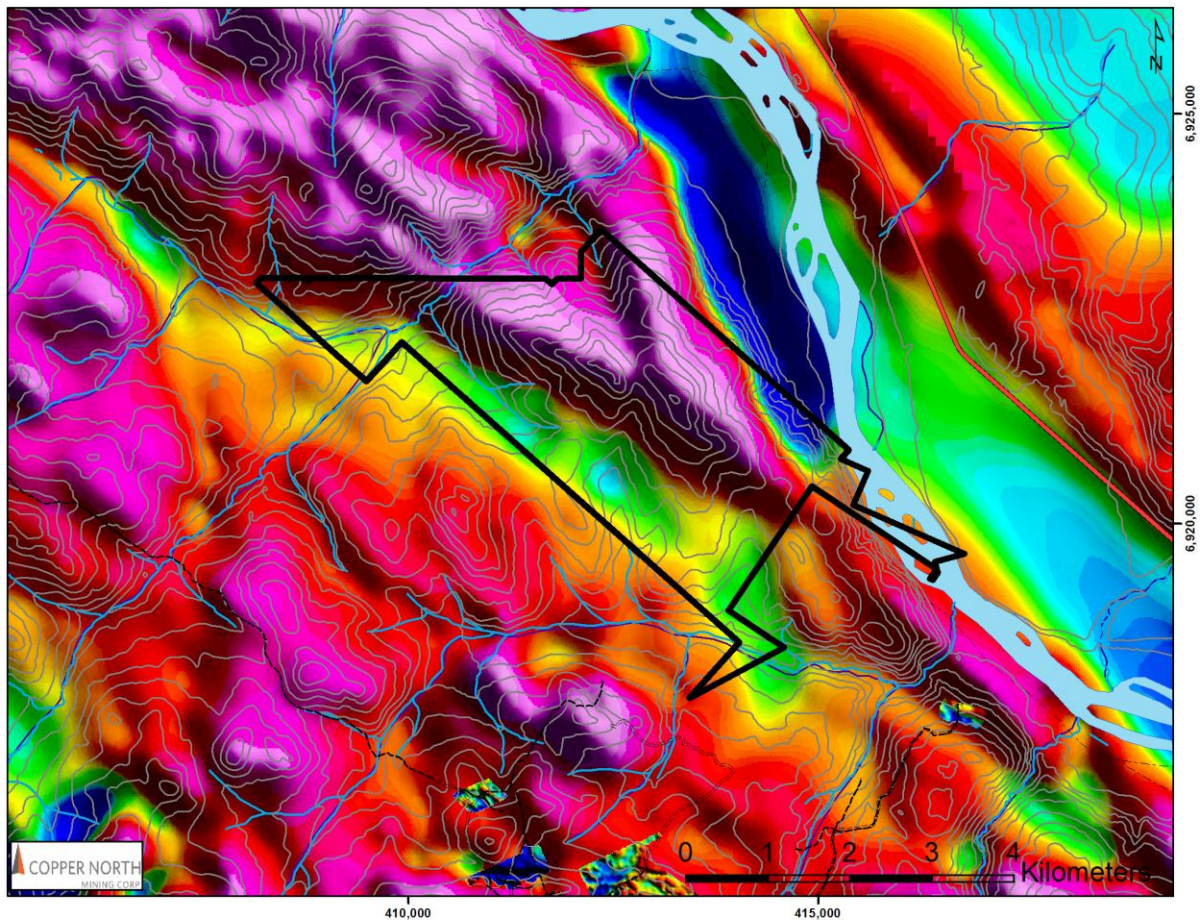


Figure 5 WASP claims (solid black outline), with regional airborne magnetic map. The magnetic high on the NE side of the claim block correlates with the Povoas Formation mafic volcanic rocks and the magnetic low on the SW side correlates with granodiorites of the Granite Mountain Batholith.

## 11. GEOLOGICAL MAP

A new geological map has been compiled using regional data in addition to the geophysical interpretation and mapping data in this report (see following page). The map is preliminary in nature, as too few outcrops have been observed to properly establish the map distribution of rock units and the geological relationships between units. Ornamentation has been omitted from faults, as the relative displacement along each fault is not known. It can be inferred from regional mapping that the overall fault system represents a largely NW-SE dextral strike-slip sense of displacement. Some of the faults that bound the Tanglefoot formation may be normal faults that accommodated the subsiding basin during the opening of the Whitehorse Trough.

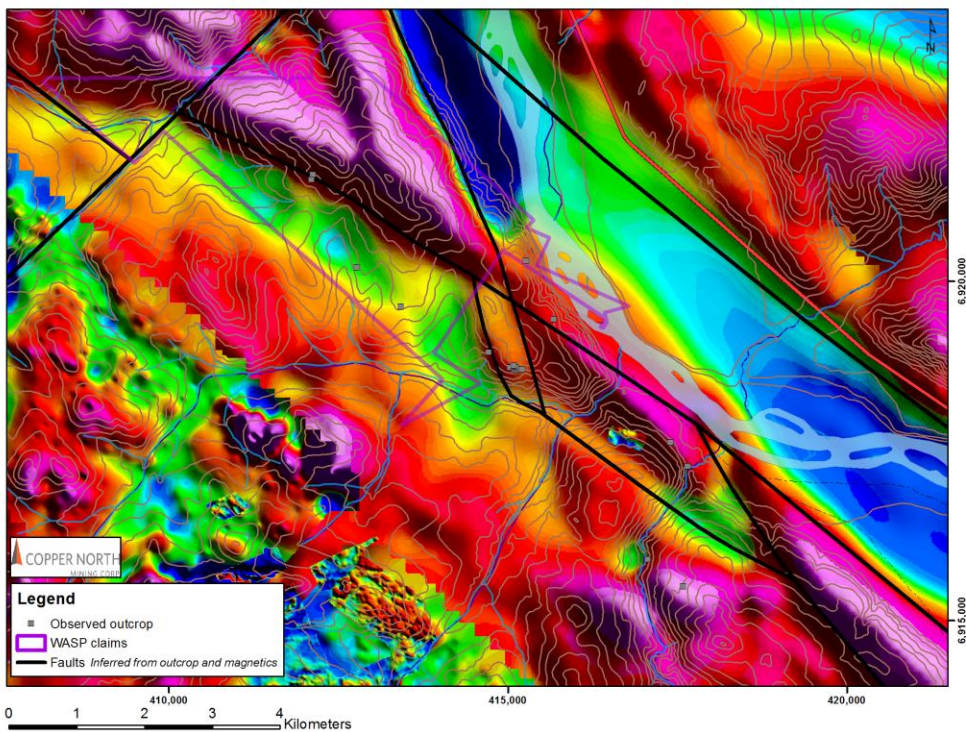
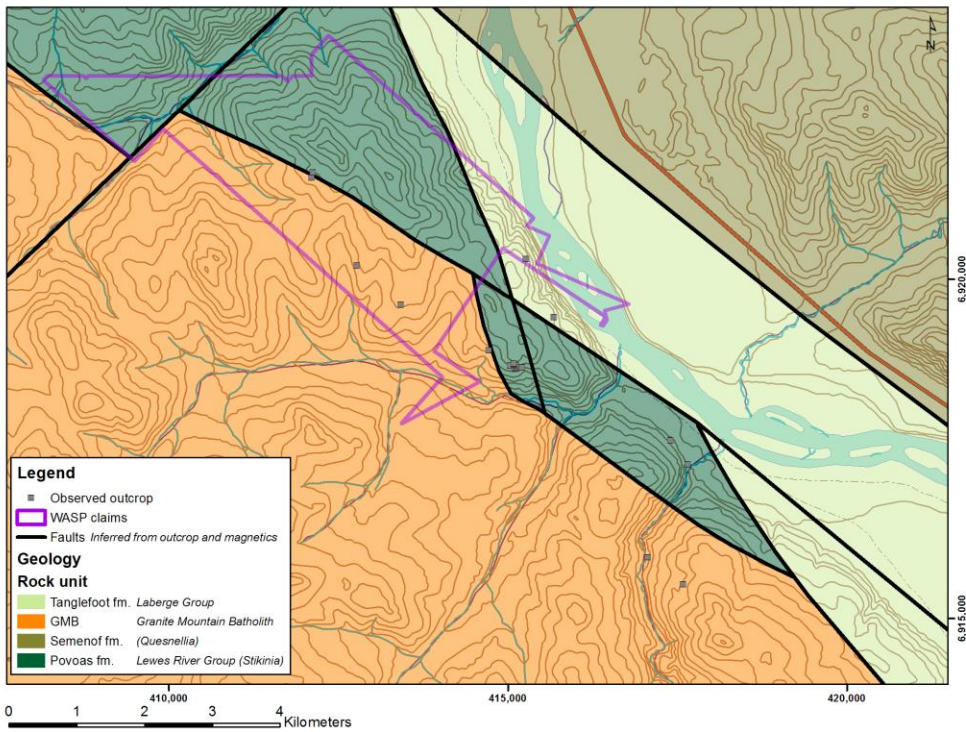
The nature of the contact between the Granite Mountain Batholith and the Povoas formation is not known – this contact may be faulted or intrusive. The contact may be both locally intrusive

and, elsewhere, locally faulted. The deep emplacement of the Granite Mountain Batholith in the late Triassic-Early Jurassic must have been followed by rapid exhumation to surface by the Early Jurassic when sedimentation in the Whitehorse Trough began (Colpron et al., 2015). The exhumation was likely accommodated along faults and the displacement on some of the faults in the map area may be significant.

The geometry of the faults and fault-bounded blocks in the map area is suitable for generating second-order, approximately NNW-trending, dilational structures during the overall dextral strike slip movement. These dilational structures, present at jogs or bends in the NW-SE strike slip faults, are favourable areas for the formation of veins, such as those reported on the neighbouring crown-granted mineral claims. Therefore, the area of the WASP claims is prospective for vein hosted copper-gold mineralization and possibly, vein-hosted gold mineralization.

The greenstone-subclass of orogenic gold deposits has the following key elements (Robert et al., 2007): hosted in volcanic greenstone belts; associated with crustal-scale shear zones; proximity to conglomerate rocks; shear zones with bends and intersections; rheological heterogeneity; Fe-rich lithologies; felsic porphyry intrusions. The WASP claims display all of these factors: conglomerates of the Tanglefoot formation; Fe-rich greenstones of the Povoas formation; a spatial association with a major structural break between Stikinia and Quesnellia – a terrane bounding transpressive structure; dilational jogs on higher order structures; rheological contrast between Granite Mountain Batholith granodiorites and Povoas formation basalts; and nearby vein hosted mineralization with gold and copper. The significant difference in the style of mineralization between greenstone orogenic gold and that reported on the adjacent crown grants is the presence of copper in veins. The gold:copper ratios are significantly higher on the crown grants than at the Carmacks Copper property – this can be speculated as the remobilization of Carmacks style mineralization by gold-rich orogenic fluids. Alternatively, the gold-copper mineralization may represent the distal expression of Carmacks Copper style mineralization in a dilational fault setting. The area warrants further mapping, prospecting and evaluation.

*Figure 6 (following page) Geological map (top) showing the new interpretation of the geology. The outcrops visited are indicated on the map. Total magnetic intensity map (bottom) of the same area, showing the basis for the interpretation of faults. Klondike highway is a red line in the north-east quadrant of both maps.*



## 12. CONCLUSIONS AND RECOMMENDATIONS

The recognition of the presence of the Granite Mountain Batholith underlying the WASP claims is significant for two reasons: this terrane is prospective for Carmacks-Minto style Cu-Au-Ag mineralization; and the contact between the Granite Mountain Batholith and the Povoas Formation underlies the claims and may be prospective for Au or Au-Cu mineralization in quartz veins along this structural break, similar to the mineralization at Bonanza King reported on the crown grants that span Merrice, Williams and Nancy Lee Creeks.

The WASP claims are seen as prospective for Cu-Au mineralization, yet have not been systematically explored. An exploration program comprising geological mapping, prospecting, ground magnetic surveying, soil sampling and excavator trenching is proposed. To support this, the existing trail access should be refreshed, to allow 4x4 truck access. A total estimated cost of this proposed work is approximately \$250,000.

### 13. STATEMENT OF COSTS

The geological map in Figure 6 was made in part using outcrop data gathered on claims owned by Carmacks Mining Corp., adjacent to the WASP claims. However, only the portion of costs associated with work done mapping outcrops on the WASP claims is being claimed as assessment work in this statement of costs for the WASP claims.

Item	Rate	Quantity	Cost
Senior Geologist*	\$ 450.00	3	\$ 1,350.00
Geologist*	\$ 340.00	3	\$ 1,020.00
Helicopter (Jet Ranger wet rate)	\$1,250.00	1.6	\$ 2,000.00
Daily allowance (food, supplies)	\$ 100.00	6	\$ 600.00
Hotel	\$ 145.95	3	\$ 437.85
Geophysical interpretation	\$ 450.00	1	\$ 450.00
Report and map preparation	\$ 450.00	4	\$ 1,800.00
Mobilization flights	-	-	\$ 1,450.70
Truck rental	\$ 150.00	3	\$ 450.00
<b>TOTAL COST</b>			<b>\$ 9,558.55</b>
<b>Assessment credit doubled under MIP 2016**</b>			<b>\$14,617.10</b>

\*3 days claimed (mob, demob and 1 day mapping)

\*\* Geophysical interpretation and report writing not doubled as they were done in 2017

Jack Milton [signed], 1<sup>st</sup> May 2017

Project Geologist,

Copper North Mining Corp.

## 14. REFERENCES

- Archer, A.R., 1971. Geology and Geochemistry of the Williams Creek Property. Yukon Government assessment report # 060203.
- Archer, A.R., 1972. 1971 Exploration Program, Dawson Range Joint Venture.
- Archer, A.R., 1972. Report on the 1972 Geochemical, Diamond Drilling and Trenching Program, Williams Creek Property, Dawson Range Joint Venture. Yukon Government assessment report # 060114.
- Archer, A. R., 1991. Assessment Report, Williams Creek Property, Whitehorse Mining Division, Western Copper Holdings Limited. Yukon Government assessment report # 092944.
- Casselman, S. G., 2007. 2006 Assessment Report for the Carmacks Copper Project. Yukon Government assessment report.
- Casselman, S. G., 2008. 2007 Assessment Report for the Carmacks Copper Project. Yukon Government assessment report.
- Cavey, G. Gunning, D. Clegg, J., 1996. Technical Report on the Carmacks Copper Project, Whitehorse Mining Division, Yukon Territory, For Western Copper Corp. Western Copper Corporation private report.
- Colpron, M., Crowley, J. L., Gehrels, G., Long, D. G., Murphy, D. C., Beranek, L., & Bickerton, L. 2015. Birth of the northern Cordilleran orogen, as recorded by detrital zircons in Jurassic synorogenic strata and regional exhumation in Yukon. *Lithosphere*, 7(5), 541-562.
- Harder, P. A., 1993. Biophysical Assessment of the Williams Creek Mine Site. Yukon Government assessment report # 093083.
- Holtby, M., 1992. Assessment Report, Williams Creek Property, Whitehorse Mining Division, Western Copper Holdings Limited. Yukon Government assessment report # 093023.
- Holtby, M., 1993. Assessment Report, Williams Creek Property, Whitehorse Mining Division, Western Copper Holdings Limited. Yukon Government assessment report # 093100.
- McNaughton, K., 1994. Carmacks Copper Project, 1994 Exploration Program.
- Robinson, R. J., Casselman, S. G., 2006. Mineral Resource Estimate For the Carmacks Copper Project. Western Copper Corporation Private report.

## 15. STATEMENT OF QUALIFICATIONS

I, Jack Edward Milton, do hereby state that:

I reside at BSMT, 1022 Pennylane Place, Squamish, B.C..

I am not a Professional Geologist.

I graduated from the Camborne School of Mines, University of Exeter, UK, in 2008 with a first class honours Bachelor of Science degree in Applied Geology.

I graduated from the Camborne School of Mines, University of Exeter, UK, in 2009 with a Master of Science degree in Mining Geology.

I graduated from the University of British Columbia in 2015 with a Ph.D. in Geological Sciences.

I have been employed by Copper North Mining Corp. since graduating from my Ph.D. and I own shares in Copper North Mining Corp.

I managed and supervised the exploration program at the Carmacks Copper project in the field season of 2015.

I managed and supervised the exploration program at the Carmacks Copper project in the field season of 2016.

This statement refers to the 2016 Technical Assessment Report for the Geology and the Geophysics of the WASP claims, Carmacks Copper project, Yukon that describes work carried out in the 2016 field season.

Jack Milton [signed], 1<sup>st</sup> May 2017

Project Geologist,

Copper North Mining Corp.

## 16. APPENDIX 1: Table of Quartz Claim/Lease information

Grant#	Name	Nbr	Recording	Staking	Expiry	Ops Number	Renewal requested (years)	New Expiry
YF50879	WASP	1	2016-07-20	2016-07-16	2017-07-20	1500440718	1	2018-07-20
YF50880	WASP	2	2016-07-20	2016-07-16	2017-07-20	1500440719	1	2018-07-20
YF50881	WASP	3	2016-07-20	2016-07-16	2017-07-20	1500440720	1	2018-07-20
YF50882	WASP	4	2016-07-20	2016-07-16	2017-07-20	1500440721	1	2018-07-20
YF50883	WASP	5	2016-07-20	2016-07-16	2017-07-20	1500440722	1	2018-07-20
YF50884	WASP	6	2016-07-20	2016-07-16	2017-07-20	1500440723	1	2018-07-20
YF50885	WASP	7	2016-07-20	2016-07-16	2017-07-20	1500440724	1	2018-07-20
YF50886	WASP	8	2016-07-20	2016-07-17	2017-07-20	1500440725	1	2018-07-20
YF50887	WASP	9	2016-07-20	2016-07-17	2017-07-20	1500440726	1	2018-07-20
YF50888	WASP	10	2016-07-20	2016-07-17	2017-07-20	1500440727	1	2018-07-20
YF50889	WASP	11	2016-07-20	2016-07-17	2017-07-20	1500440728	1	2018-07-20
YF50890	WASP	12	2016-07-20	2016-07-17	2017-07-20	1500440729	1	2018-07-20
YF50891	WASP	13	2016-07-20	2016-07-17	2017-07-20	1500440730	1	2018-07-20
YF50892	WASP	14	2016-07-20	2016-07-17	2017-07-20	1500440731	1	2018-07-20
YF50893	WASP	15	2016-07-20	2016-07-17	2017-07-20	1500440732	1	2018-07-20
YF50894	WASP	16	2016-07-20	2016-07-17	2017-07-20	1500440733	1	2018-07-20
YF50895	WASP	17	2016-07-20	2016-07-17	2017-07-20	1500440734	1	2018-07-20
YF50896	WASP	18	2016-07-20	2016-07-17	2017-07-20	1500440735	1	2018-07-20
YF50897	WASP	19	2016-07-20	2016-07-17	2017-07-20	1500440736	1	2018-07-20
YF50898	WASP	20	2016-07-20	2016-07-17	2017-07-20	1500440737	2	2019-07-20
YF50899	WASP	21	2016-07-20	2016-07-17	2017-07-20	1500440738	2	2019-07-20
YF50900	WASP	22	2016-07-20	2016-07-17	2017-07-20	1500440739	2	2019-07-20
YF50901	WASP	23	2016-07-20	2016-07-18	2017-07-20	1500440740	2	2019-07-20
YF50902	WASP	24	2016-07-20	2016-07-18	2017-07-20	1500440741	2	2019-07-20
YF50903	WASP	25	2016-07-20	2016-07-18	2017-07-20	1500440742	2	2019-07-20
YF50904	WASP	26	2016-07-20	2016-07-18	2017-07-20	1500440743	2	2019-07-20
YF50905	WASP	27	2016-07-20	2016-07-18	2017-07-20	1500440744	2	2019-07-20
YF50906	WASP	28	2016-07-20	2016-07-18	2017-07-20	1500440745	2	2019-07-20
YF50907	WASP	29	2016-07-20	2016-07-18	2017-07-20	1500440746	2	2019-07-20
YF50908	WASP	30	2016-07-20	2016-07-18	2017-07-20	1500440747	2	2019-07-20
YF50909	WASP	31	2016-07-20	2016-07-18	2017-07-20	1500440748	2	2019-07-20
YF50910	WASP	32	2016-07-20	2016-07-18	2017-07-20	1500440749	2	2019-07-20
YF50911	WASP	33	2016-07-20	2016-07-18	2017-07-20	1500440750	2	2019-07-20
YF50912	WASP	34	2016-07-20	2016-07-18	2017-07-20	1500440751	2	2019-07-20
YF50913	WASP	35	2016-07-20	2016-07-18	2017-07-20	1500440752	2	2019-07-20
YF50914	WASP	36	2016-07-20	2016-07-20	2017-07-20	1500440753	2	2019-07-20
YF50915	WASP	37	2016-07-20	2016-07-20	2017-07-20	1500440754	2	2019-07-20
YF50916	WASP	38	2016-07-20	2016-07-16	2017-07-20	1500440755	1	2018-07-20
YF50917	WASP	39	2016-07-20	2016-07-16	2017-07-20	1500440756	1	2018-07-20
YF50918	WASP	40	2016-07-20	2016-07-16	2017-07-20	1500440757	1	2018-07-20
YF50919	WASP	41	2016-07-20	2016-07-16	2017-07-20	1500440758	1	2018-07-20
YF50920	WASP	42	2016-07-20	2016-07-16	2017-07-20	1500440759	1	2018-07-20
YF50921	WASP	43	2016-07-20	2016-07-16	2017-07-20	1500440760	1	2018-07-20
YF50922	WASP	44	2016-07-20	2016-07-16	2017-07-20	1500440761	1	2018-07-20

Grant#	Name	Nbr	Recording	Staking	Expiry	Ops Number	Renewal requested (years)	New Expiry
YF50923	WASP	45	2016-07-20	2016-07-16	2017-07-20	1500440762	1	2018-07-20
YF50924	WASP	46	2016-07-20	2016-07-16	2017-07-20	1500440763	1	2018-07-20
YF50925	WASP	47	2016-07-20	2016-07-17	2017-07-20	1500440764	2	2019-07-20
YF50926	WASP	48	2016-07-20	2016-07-17	2017-07-20	1500440765	2	2019-07-20
YF50927	WASP	49	2016-07-20	2016-07-17	2017-07-20	1500440766	2	2019-07-20
YF50928	WASP	50	2016-07-20	2016-07-17	2017-07-20	1500440767	2	2019-07-20
YF50929	WASP	51	2016-07-20	2016-07-17	2017-07-20	1500440768	2	2019-07-20
YF50930	WASP	52	2016-07-20	2016-07-17	2017-07-20	1500440769	2	2019-07-20
YF50931	WASP	53	2016-07-20	2016-07-17	2017-07-20	1500440770	2	2019-07-20
YF50932	WASP	54	2016-07-20	2016-07-17	2017-07-20	1500440771	2	2019-07-20
YF50933	WASP	55	2016-07-20	2016-07-17	2017-07-20	1500440772	2	2019-07-20
YF50934	WASP	56	2016-07-20	2016-07-17	2017-07-20	1500440773	2	2019-07-20
YF50935	WASP	57	2016-07-20	2016-07-17	2017-07-20	1500440774	2	2019-07-20
YF50936	WASP	58	2016-07-20	2016-07-17	2017-07-20	1500440775	2	2019-07-20
YF50937	WASP	59	2016-07-20	2016-07-18	2017-07-20	1500440776	2	2019-07-20
YF50938	WASP	60	2016-07-20	2016-07-18	2017-07-20	1500440777	2	2019-07-20
YF50939	WASP	61	2016-07-20	2016-07-18	2017-07-20	1500440778	2	2019-07-20
YF50940	WASP	62	2016-07-20	2016-07-18	2017-07-20	1500440779	2	2019-07-20
YF50941	WASP	63	2016-07-20	2016-07-18	2017-07-20	1500440780	2	2019-07-20
YF50942	WASP	64	2016-07-20	2016-07-19	2017-07-20	1500440781	1	2018-07-20
YF50943	WASP	65	2016-07-20	2016-07-19	2017-07-20	1500440782	1	2018-07-20
YF50944	WASP	66	2016-07-20	2016-07-19	2017-07-20	1500440783	1	2018-07-20
YF50945	WASP	67	2016-07-20	2016-07-19	2017-07-20	1500440784	1	2018-07-20
YF50946	WASP	68	2016-07-20	2016-07-19	2017-07-20	1500440785	2	2019-07-20
YF50947	WASP	69	2016-07-20	2016-07-19	2017-07-20	1500440786	2	2019-07-20
YF50948	WASP	70	2016-07-20	2016-07-19	2017-07-20	1500440787	2	2019-07-20
YF50949	WASP	71	2016-07-20	2016-07-19	2017-07-20	1500440788	2	2019-07-20
YF50950	WASP	72	2016-07-20	2016-07-19	2017-07-20	1500440789	2	2019-07-20
YF50951	WASP	73	2016-07-20	2016-07-19	2017-07-20	1500440790	2	2019-07-20
YF50952	WASP	74	2016-07-20	2016-07-19	2017-07-20	1500440791	2	2019-07-20
YF50953	WASP	75	2016-07-20	2016-07-19	2017-07-20	1500440792	2	2019-07-20
YF50954	WASP	76	2016-07-20	2016-07-19	2017-07-20	1500440793	2	2019-07-20
YF50955	WASP	77	2016-07-20	2016-07-19	2017-07-20	1500440794	2	2019-07-20
YF50956	WASP	78	2016-07-20	2016-07-19	2017-07-20	1500440795	2	2019-07-20
YF50957	WASP	79	2016-07-20	2016-07-19	2017-07-20	1500440796	2	2019-07-20
YF50958	WASP	80	2016-07-20	2016-07-19	2017-07-20	1500440797	2	2019-07-20
YF50959	WASP	81	2016-07-20	2016-07-19	2017-07-20	1500440798	2	2019-07-20
YF50960	WASP	82	2016-07-20	2016-07-17	2017-07-20	1500440799	2	2019-07-20
YF50961	WASP	83	2016-07-20	2016-07-17	2017-07-20	1500440800	2	2019-07-20
YF50962	WASP	84	2016-07-20	2016-07-17	2017-07-20	1500440801	2	2019-07-20
YF50963	WASP	85	2016-07-20	2016-07-17	2017-07-20	1500440802	2	2019-07-20
YF50964	WASP	86	2016-07-20	2016-07-17	2017-07-20	1500440803	2	2019-07-20
YF50965	WASP	87	2016-07-20	2016-07-17	2017-07-20	1500440804	2	2019-07-20
YF50966	WASP	88	2016-07-20	2016-07-17	2017-07-20	1500440805	2	2019-07-20
YF50967	WASP	89	2016-07-20	2016-07-17	2017-07-20	1500440806	2	2019-07-20
						<b>TOTAL</b>	<b>146</b>	