TECHNICAL REPORT ON THE GEOLOGY OF THE MONSTER PROPERTY, YUKON CANADA

Prepared for: Gorilla Minerals Corp.

Prepared by:

R. Allan Doherty, P.Geo

Co-authored by:

Jacob Verbaas, MSc, PhD

JANUARY 31, 2018

Certificate

CERTIFICATE OF AUTHOR

I, R.Allan Doherty, BSc., P.Geo do hereby certify that:

1. I am currently employed as an exploration Geologist by Aurum Geological Consultants Inc.
2. This certificate applies to the Technical Report titled "TECHNICAL REPORT ON THE GEOLOGY OF THE MONSTER PROPERTY, YUKON CANADA" with effective date January 31, 2018 (the "Technical Report").
3. I graduated with an Hons BSc in Geology from University of New Brunswick in 1977.
4. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, Canada, Professional Geologist (No. 20564), and have been registered as a Professional Geologist since 1993.
5. I have continuously practiced my profession for 36 years primarily in the Yukon as an exploration geologist.
6. I visited the Monster Property on August 11, 2001 while preparing a 43-101 report on the property for Monster Copper Resources Inc.
7. I am responsible for the Technical Report.
8. I am independent of Gorilla Minerals Corp. applying all of the tests in section 1.5 of NI 43-101.
9. I have had no prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and Form 43-101-F1, and the Technical Report has been prepared in compliance with that instrument and form.
11. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
12. I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.
13. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated January 31th 2018.

R. Allan Doherty, P.Geo.

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1. Summary

The Monster Property is an exploration stage Cu-Co property located in central-Yukon, approximately 85 km northeast of Dawson City. The Property consists of 283 contiguous 1500 x 1500 foot claim blocks and has a total surface area of 59.2 km^2. The claim block encompasses part of the northern Wernecke Breccia belt, a roughly linear EW trending belt of hematitic Iron Oxide Copper & Gold (IOCG) mineralized breccia zones.

The Monster Property is accessible by helicopter. The nearest road to the Property is the Dempster Highway, 75 km east of the Monster property. The nearest fixed wing airstrip is a 600 m long gravel airstrip on the South Tatonduk River about 10 km north of the property (64°55.7’ N 139°52.3’ W). The nearest helicopter base is in Dawson City, 85 km southwest of the Monster Property.

All mineralization on the Monster Property occurs within or immediately adjacent to the Wernecke Breccia. The Wernecke Breccia has been correlated to the Olympic Dam deposit based on age, lithological similarity and on the presence of similar fallback sediments. The IOCG deposit type was recently recognized for its potential to contain significant cobalt resources.

Historical work has resulted in the description of 14 mineralized showings of chalcopyrite, bornite, erythrite, and/or cobaltite. These minerals commonly occur in stringers, veins, veinlets and as disseminations and blebs and are locally associated with potassic alteration. Historical grab samples taken on these showings contain up to 44.8% Cu and 2.80% Co. Gold in historical grab samples range up to 1070 ppb Au.

Historical soil sampling, aeromagnetic, radiometric and surface geological surveys are available. Future programs to increase the resolution and accuracy of existing data sets are recommended. Further geophysical surveys such as induced polarization and electromagnetic surveys are recommended, as orientation surveys over existing mineralized showings prior to property wide surveys.

The Monster Project is a property of merit based on favourable geology and the presence of 14 mineralized showings of chalcopyrite, bornite, erythrite, and/or cobaltite. There is no mineral resource or reserve present on the property. The property has one drill hole completed in 2003 by Monster Copper Resources (Setterfield and Tykajlo, 2003). The hole intersected one clast of copper-mineralized andesite within Wernecke breccia returning 1.7% Cu over 0.5 m.

A two-phase work program on the Monster Property is recommended. The first phase increases the resolution of existing datasets and include surface mapping, soil sampling and airborne magnetics. The first phase also includes 6 line-km of IP over existing showings. This phase totals approximately $700,000 CAD in expenditures. The second phase, dependent on results of the first phase, consists of further ground geophysical surveying and drilling. This phase totals approximately $1,300,000 CAD in expenditures.

2. Introduction

2.1. Purpose and terms of reference

The Board of Directors of Gorilla Minerals Corp., requested this report to be prepared as an NI43-101 report to disclose technical information on the Monster 1-283 quartz claims covering the Monster Property in central Yukon, Canada. The Monster 1-283 quartz claims will be referred to as the 'Monster Property'. Gorilla Minerals Corp. will be referred to as the 'Company'.

This report was compiled by Jacob Verbaas and was subsequently reviewed and edited by R. Allan Doherty, P.Geo.

2.2. Property description and location

The Monster Property is located in central-Yukon, approximately 85 km northeast of Dawson City (Figure 1). The claim block encompasses part of the northern Wernecke Breccia belt, a roughly linear EW trending belt of hematitic Iron Oxide Copper & Gold (IOCG) mineralized breccia zones. The Wernecke Breccia is exposed in a Proterozoic window in the Ogilvie Mountains (Figure 2). The Property consists of 283 contiguous 1500 x 1500 foot claim blocks and has a total surface area of 59.2 km^2 (Figure 3).

The Property encompasses several previous claim blocks that have been intermittently explored since the 70s. Historical work on the claim blocks has resulted in the description of numerous zones of Cu and Co mineralization using soil sampling, surface mapping, and geophysical surveys (Baknes, 1995; Falls and Baknes, 1995; Williams, 1997; Jones, 1999).

The mineralization is hosted within and adjacent to hematitic breccia zones. Commonly Cu occurs in pods, veins, and disseminations of bornite and chalcopyrite and Co occurs as veinlets and disseminations of erythrite and cobaltite. Locally the mineralization includes anomalous gold, silver, lead and zinc.

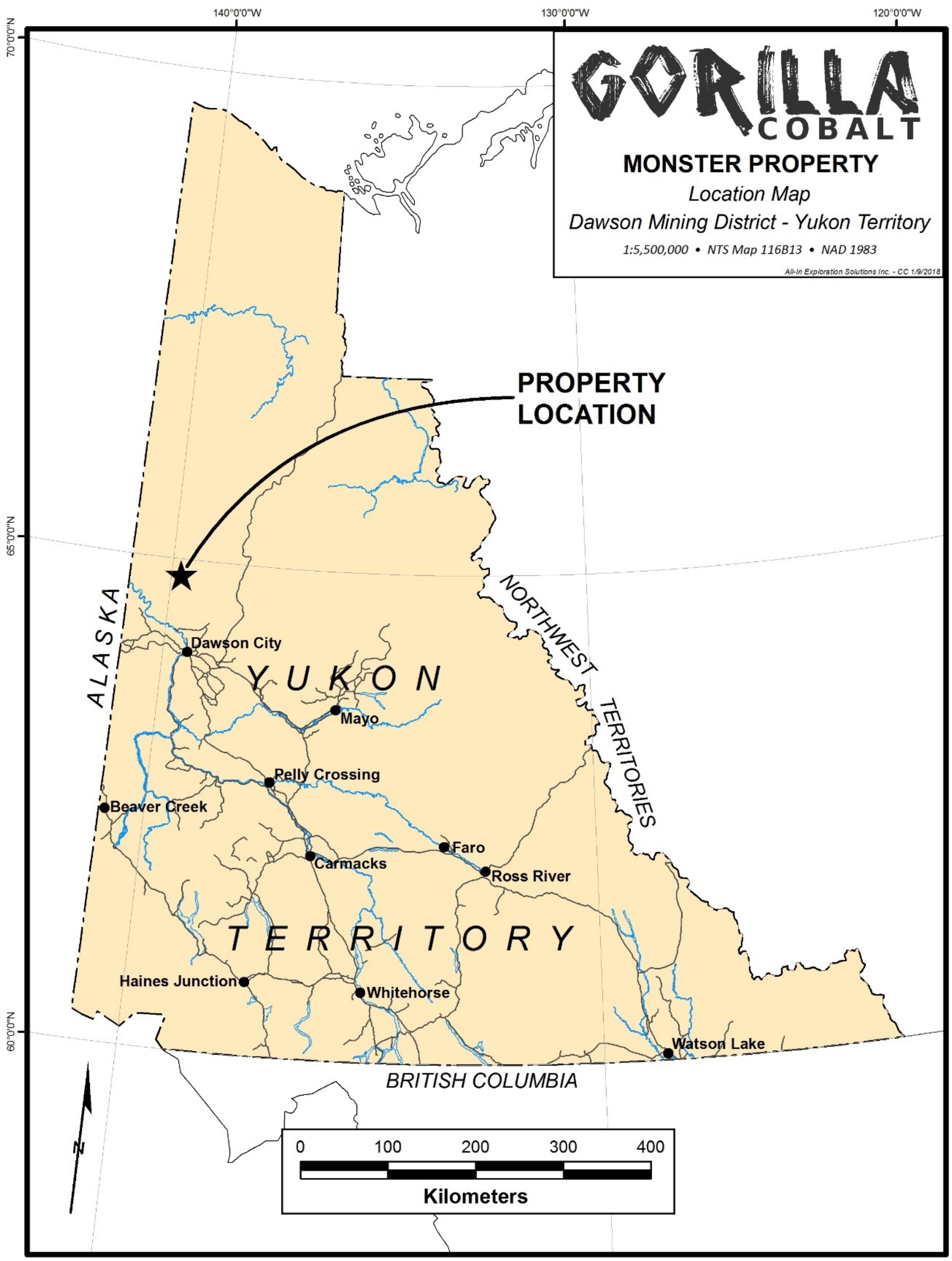

Figure 1. Yukon Territory and the location of the Monster Property.

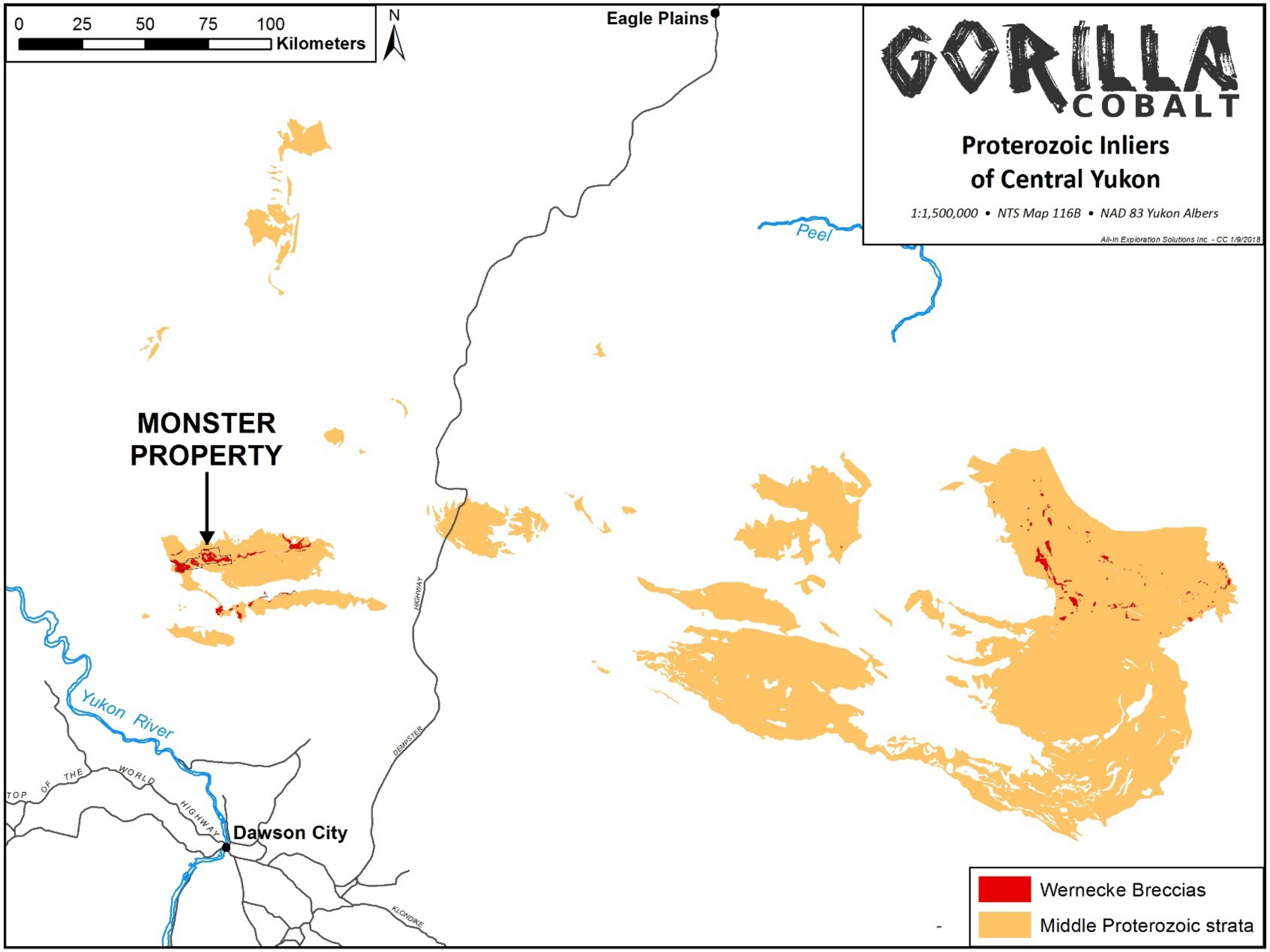

Figure 2. Proterozoic inliers in central Yukon and the location of the Monster Property.

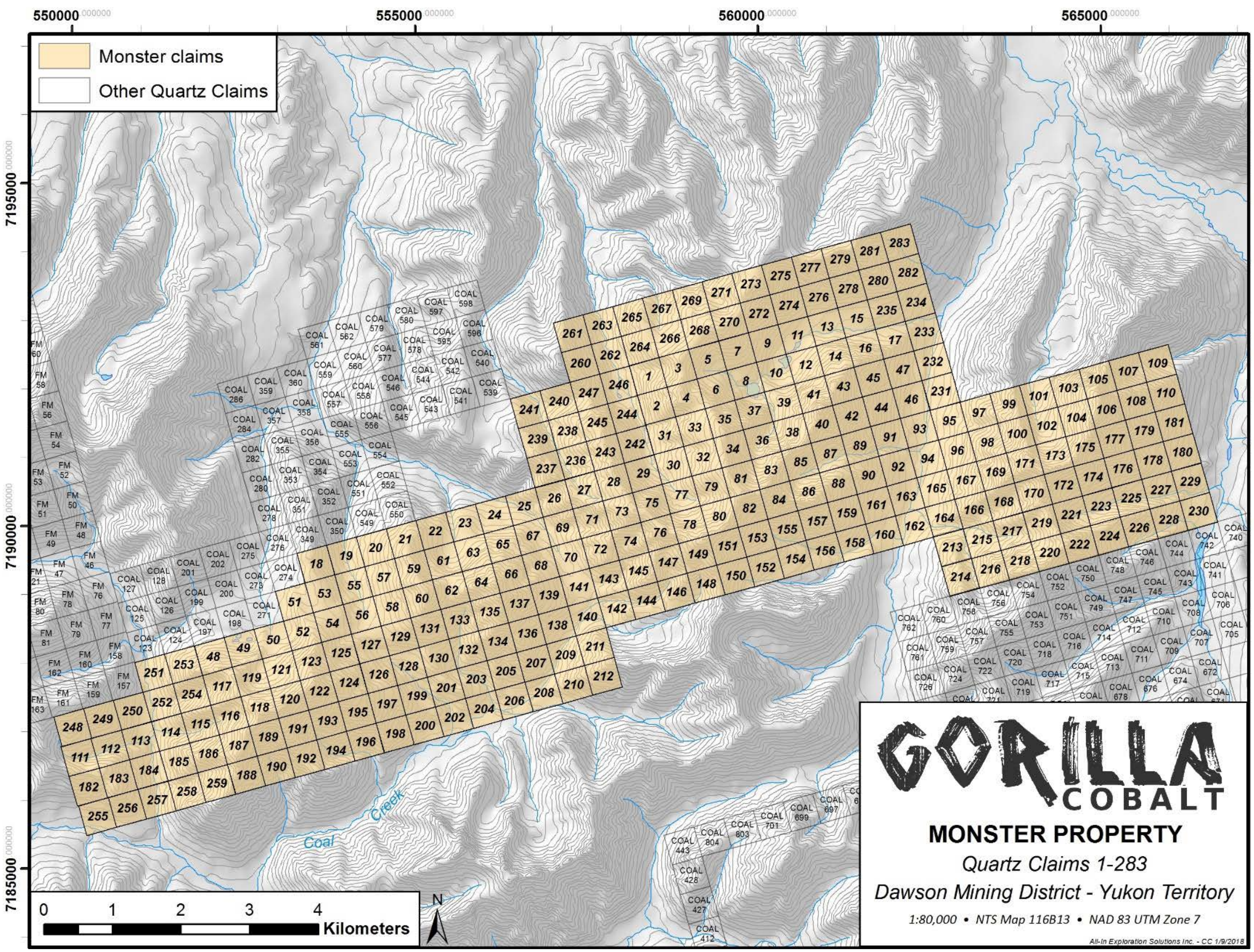

Figure 3. The 283 quartz claims of the Monster Property shaded in brown.

2.3. Existing environmental liabilities

Unlike other Wernecke Breccia occurrences, the breccia on the Monster Property does not appear to host significant Uranium mineralization. A total of 249 rock and soil samples were analyzed for Uranium in 1994. The values were uniformly low, with a total of 7 samples that returned values over 10 ppm, the highest of which was 19 ppm (Baknes, 1995). A total of 1071 pulps of soil and grab samples were analyzed for Uranium in 2007. The values were uniformly low with only six samples that returned values over 10 ppm, the highest of which was 32 ppm (Setterfield, 2007). Unfortunately, the certificates of analyses are not included with this filed report. However, the data reported corroborates that of Baknes (1995).

The Monster Property is located in an ecologically sensitive area with high relief and moderate amounts of precipitation. Rocks containing Pb, Co and sulphides are naturally exposed at the surface and do not pose an environmental risk if left undisturbed.

To the authors knowledge there remains no fuel or abandoned camps on site. One drill hole collar exists at 559225E 7190193N.

2.4. Sources of information and data

Much of the regional and local geology in this report has been sourced from assessment reports of several former quartz claim groups (such as DAS, Cookie, and Monster) that are encompassed by the current Monster Property.

Soil data shown in this report was provided in digital format by Equity Exploration Ltd., with permission from Blackstone Resources, who held the Monster and Cookie Claim previously. This data is publicly available in Yukon assessment reports 93204 (Caulfield, 1993), 93260 (Baknes, 1995), 93296 (Falls & Baknes, 1995) and 93965 (Jones, 1999).

Soil data presented in assessment report 90068 (Dyson, 1976a) 90138 (Dyson, 1976b) and in assessment report 90214 (Dyson, 1977) is not reproduced in this report because the use of standards, duplicates and blanks is not disclosed. In addition to that, the soil anomalies that were identified as a result of exploration in 1976 were confirmed by soil sampling programs in the 1990s reported in the aforementioned assessment reports.

Rock sample data derive from assessment reports 93204 (Caulfield, 1993), 93260 (Baknes, 1995), 93296 (Falls & Baknes, 1995), 93965 (Jones, 1999), 94370 (Setterfield, 2001), 94354 (Setterfield and Tykajlo, 2002) and 94430 (Setterfield, 2003). The aeromagnetic data and interpretations used for this report derive from assessment report 93600 (Williams, 1997).

Data on the Uranium concentration in pulps was derived from assessment report 094186 (Setterfield, 2007).

2.5. Personal inspection

R.Allan Doherty, P. Geo., visited the Property on August 11, 2001 to verify data for a 43-1010 Tedhnoical Report for Monster Copper Resources Inc (Doherty, 2002). There have been no material changes on the Property since this Property visit. Hence a more recent personal inspection has not been undertaken.

3. Reliance on other experts

The authors have relied on the historical work listed in section 2.3. All prior work by Blackstone Resources (1993-1998) and Monster Copper Resurces Inc (2001-2003) was completed and supervised by qualified persons and is considered reliable. The Company has not yet undertaken exploration activities, so this reliance is complete for all portions of this technical report.

4. Property description and location

The Monster Property comprises an area of 59.2 km^2. The Property is located 80 km NW of Dawson City. The center of the Property is located approximately at 64°49'48.59"N, 139°44'59.59"W. The Property consists of the Monster 1 – 283 quartz claims. Gorilla Minerals Corp. holds 100% interest in the Property. The claims are registered in the stakers names (Table 4.1).

Table 4.1. Monster Property claim data

Claim Name	Grant Number	# Claims	Registered Owner	Expiry Date
Monster 1 - 212	YE91122 - YE91333	212	All-in Exploration Solutions Inc. - 100%	11/7/2018
Monster 213 - 230	YD03623 - YE03640	18	Riley Gibson - 100%	1/31/2019
Monster 231 - 247	YD03641 - YE03657	17	E. Charles Long - 100%	1/31/2019
Monster 248 - 259	YD03658 - YE03669	12	Riley Gibson - 100%	1/31/2019
Monster 260 - 283	YD03670 - YE03693	24	E. Charles Long - 100%	1/31/2019
	Total claims	283	5915 hectares	

The Property is located within Tr'ondëk Hwëch'in First Nation Ttraditional territory. The Tr'ondëk Hwëch'in First Nation encourages early engagement between them and mining companies. This engagement is crucial for the success of mining and exploration projects.

Under the Quartz Mining Act of the Yukon Regulations the Company is required to notify the Chief of the Tr'ondëk Hwëch'in of its activities on the Property. For phase 1 and phase 2 of the proposed work on the Property, depending on the details of the exact surveys (TBD, tentatively outlined in section 14), a class 1 notification is required. No notification has been given at the time of writing. Class I Notification allows a camp of up to 10 persons for a maximum of 250 man days of property work in a season.

5. Accessibility, climate, local resources, infrastructure and physiography

5.1. Accessibility and infrastructure

The Monster property is located approximately 85 km north of Dawson City in the Ogilvie Mountains, Yukon Territory, Canada. The nearest road is the Dempster Highway, 75 km west of the Monster property. The nearest fixed wing airstrip is a 600 m long gravel airstrip on the South Tatonduk River about 10 km north of the property (64°55.7' N 139°52.3' W). The nearest helicopter base is in Dawson City. Dawson City is a small placer mining town with hotels, motels, equipment and other services and is reachable by paved highway or aircraft from Whitehorse, Yukon.

5.1. Climate

The climate in the Yukon is typical of northern mountainous terrain. Snow commonly covers the property from late October to May, and the last patches of snow normally melt in late June. The best time for exploration activity is from June to early September. Snow may precipitate at any time of year, but it is unusual for a snowstorm to last more than week in summer. The mean annual precipitation on the Property is 300 – 400 mm. Summer temperatures in the valleys can reach over 20 °C during the daytime. The Yukon is close to the polar circle and the property receives more than 18 hours per day of direct sunlight during the peak of summer. During the winter the temperature can drop below -40 °C.

5.1. Local resources

Most of the workforce can be sourced from Dawson City, Whitehorse, and other towns in Yukon Territory. Dawson City hosts the most proximal helicopter, drilling, soil sampling and other mining services. Whitehorse hosts a larger and more varied workforce and is separated from Dawson City by 532 km of paved highway.

5.1. Physiography

The Ogilvie Mountains were unaffected by continental glaciation during the Pleistocene. Hence, relief on the monster property is over 1 km and elevation ranges from 900 m to over 2000 m. The terrain is steep and rugged, and the mountains are characterized by steep cirques and sharp ridges. Most of the property is above the treeline and covered by grasses, mosses and shrubs. Exposure is excellent on steep mountain ridges and minor on less inclined ridge crests. Valleys and lower parts of steep slopes are commonly scree covered.

6. History

6.1. 1975 – 1976

Work during 1975 and 1976 focused on cobalt and copper on the DAS and Cobalt Cirque mineral claims. These historical claims overlap with the current Monster mineral claim. Union Miniere Exploration and mining Corporation Limited (UMEX) owned and explored the DAS and Cobalt Cirque mineral claims through geological mapping and soil sampling. Over 2 field seasons UMEX analyzed 1059 soil samples for Cu and Co, and a subset of these samples were also analyzed for Zn, and another subset for Ag.

A total of 170 soil samples of claims partly covering the Cobalt Cirque mineral claim were analyzed for Cu, Zn, Co and Ag during a soil sampling survey in 1975. Statistical analyses yielded anomalies of Cu > 190 ppm, possibly anomalous Zn of up to 270 ppm, uniformly low Ag and no anomalous Co (Dyson, 1976a).

A total of 645 soil samples of the DAS mineral claim were analyzed for Cu and Co during a soil sampling survey in 1976. Statistical analyses yielded anomalies of Cu > 480 ppm and possibly anomalous Cu of 290 – 450 ppm, and anomalies of Co > 110 ppm (Dyson, 1976b).

A total of 244 soil samples of the Cobalt Cirque mineral claim were analyzed for Cu and Co during a soil sampling survey in 1976. Statistical analyses incorporated the results of the aforementioned 1975 soil survey results and defined four Cu anomalies of > 200 ppm and spot anomalies of >100 ppm Co (Dyson, 1977).

6.2. 1993 – 1998

Renewed interest in the Wernecke Breccia followed the recognition of IOCG deposits as a separate deposit class and the discovery of the giant Olympic Dam deposit in Australia (Hitzman et al., 1992). The Monster mineral claim was explored by Monster Joint Ventures in 1993. The Cobalt Cirque mineral claim was staked separately and named the 'Cookie' mineral claim by Pendisle Resources in 1995. Pendisle Resources changed their name to Blackstone Resources and continued exploration on the Monster and Cookie Claims in 1996 and 1998. During this period, all of the exploration work was performed by Equity Engineering Ltd. partly in collaboration with Pamicon Developments Ltd. and Etheridge H. Williams.

A total of 872 soil samples and 377 rock samples were collected and analyzed from 1993 to 1998. Addionally geological, magnetic and gamma ray spectrometry maps were produced that helped define anomalous areas of Cu and Co.

Exploration in 1993 on the Monster and Monster west mineral claims, then 2 separate claims, confirmed the soil anomalies previously defined by UMEX, and confirmed the potential for Olympic Dam style mineralization on the Monster property. Several soil samples yielded Cu of > 1000 ppm, combined with anomalous Co, Zn, and Pb mineralization. Au, Ag and U in soil was uniformly low. Float samples yielded up to 1.70 % Cu.

Exploration in 1994 on the Monster claim, which then incorporated both the claims of 1993 and was significantly extended by further staking, focused on both rock and soil samples. Rock samples were both grab and float samples and demonstrated widespread alteration on the Monster claim. Grab samples yielded up to 25.9% Cu and 2.80% Co.

A total of 283 soil samples were collected in 1994 and analyzed for Au, Ag, Co, Cu, Pb, Zn and Ba. Statistical analyses of these soil samples was performed using 593 additional samples of other Wernecke Breccia zones within the Ogilvie Mountains (but not on the Monster mineral claim). In combination with older data, this soil sampling program outlined numerous anomalies of >300 up to >900 ppm Cu locally in combination with >50 up to >100 ppm Co.

A total of 11 stream sediment samples were collected in 1994. However, these samples were too few to allow a statistical treatment and were instead compared to regional background data. Elevated Cu and Co concentrations in stream sediment samples coincided with known mineralization in the catchment of the respective samples.

6.3. 2001 – 2007

In 2001 Monster Copper Resources Inc. acquired 100% interest in the Monster/Cookie property. Monster Copper Resources Inc. invested in a gravity survey over part of the Monster/Cookie property and identified a large anomaly of 3 mgal. Additional gravity surveying was done in 2002. The interpreted anomaly declined slightly in intensity but was still considered prospective. The anomaly was drilled concurrently with further gravity surveying in 2003. An improved set of elevation data was obtained in 2003 which allowed for the reinterpretation of all the gravity data. The previously identified strong gravity anomaly appeared to be mostly an artifact of the low-quality elevation data that was used for the terrane correction prior to 2003. As a result the drill hole that was meant to intersect the supposed gravity anomaly failed to intersect anything of interest.

In 2007 Monster Copper Resources Inc. analyzed 1071 pulps of soil and rock samples collected by Blackstone Resources from 1993 – 1998 for U. The highest U in grab samples was 32 ppm. The highest U in soil samples was 20 ppm.

6.4. Geophysical surveys

6.4.1. Induced polarization survey

UMEX obtained data from three IP lines on the DAS claim in the seventies. Unfortunately, the data itself is unreported. The anomalies were noted to be locally related to mineralization. However, some anomalies were not related to mineralization (Baknes, 1995).

6.4.2. Radiometric survey

In 1994 a ground radiometric survey was performed over 8 km of grid line in Monster West. Baknes (1995), noted that high K counts locally coincided with areas of known mineralization or elevated Cu in soil. However, some anomalies did not relate to mineralization (Baknes, 1995).

Normalizing K counts to Th counts is commonly used as a correction for the effect of primary lithology. However, on the Monster West claim some false anomalies were noted due to very low Th in local host rock (Baknes, 1995).

In 1996 High-Sense Geophysics Ltd. performed a helicopter borne magnetic (Section 3.4.3) and radiometric survey. EHW subsequently analyzed and interpreted the data (Williams, 1997). The regional survey was flown on a line spacing of 1000 m with a detailed survey flown over a smaller area (The Monster Property) with a spacing of 250 m. The survey was flown without control lines. In addition to that, the effects of instrumental noise and rapid changes in flight path resulted in minor degradation of the data quality (Williams, 1997). Regionally the radiometric data can outline the major lithological units on the basis of the K and U counts. Within the Wernecke Breccia the radiometric data indicate variable potassic alteration. Locally these data coincide with known areas of mineralization. The 1000 m line spacing used in the regional survey was too high to adequately assess potassic alteration within the Wernecke Breccia. However, the detailed survey on the Monster Property was successful in outlining potential areas of high potassic alteration (Williams, 1997).

6.4.3. Magnetic survey

A comprehensive magnetic survey was carried out in 1996 by High-Sense Geophysics. The magnetic data was collected concurrently with radiometric data (Section 3.4.2). The study consisted of a regional aeromagnetic survey and a detailed aeromagnetic survey. Regional aeromagnetic data was obtained using 1000 m line spacing. The results from this survey are useful for defining broad target areas and the regional structural setting (further described in section 7.3). The detailed aeromagnetic data was obtained using 250 m line spacing and allowed for the outlining of the general structure of the Monster Property and magnetic anomalies that are related to geology. However, 250 m line spacing is still too large to identify specific drill targets.

Differences in the ratio of magnetite/hematite are commonly the cause of magnetic highs in IOCG deposits. Magnetite is an order of magnitude more magnetic than hematite. The magnetic highs are locally correlated to zones of increased mineralization, notably on the east side of the Monster Property (Williams, 1997), and remain areas of interest.

The former Cookie Claim (currently the eastern part of the Monster Property) contains a distinct magnetic high that is modeled at 200 m below the surface. This magnetic high may have a southern dip and continue westward. Mineral showings on the Cookie Claim are bounded by E-W faults to the north and south and NE-SW structures to the east and west (Williams, 1997).

6.4.4. Gravity survey

Gravity surveys were performed from 2001 – 2003 by Monster Copper Resources. A gravity anomaly defined in 2001 and 2002 was followed up by additional gravity surveying and drilling in 2003. Unfortunately, after applying an improved terrane correction the gravity anomaly was discovered to be an artifact of elevation. The drill hole failed to intersect anything of interest (Setterfield, 2001, 2003; Setterfield and Tykajlo, 2002).

7. Geological setting and mineralization

7.1. Regional geology

The geology of Yukon Territory is split into two different parts by the northwest striking Tintina fault. The Tintina fault is a dextral strike-slip fault with approximately 430 km of displacement. In general the Tintina Fault separates rocks of ancestral North American affinity to the North from allochthonous terranes in the South. The Monster Property lies entirely to the north of the Tintina fault.

The ancestral North American rocks to the north of the Tintina Fault comprise predominantly basinal rocks that were deposited from approximately 1.7 Ga to the middle Phanerozoic. Deposition was punctuated by intervals of orogenesis, erosion, hydrothermal brecciation and magmatism (Thorkelson et al., 2005). The Proterozoic history of Yukon is recorded in several Proterozoic Inliers. The Monster Property occurs in the Ogilvie Inlier, in the central-west of Yukon Territory (Figure 2) and contains hydrothermal breccias that were emplaced in deformed and metamorphosed basinal Late – Middle Proterozoic rocks.

7.1.1. The Wernecke Supergroup

The Wernecke Supergroup is the host rock to the hydrothermal breccias that host mineralization on the Monster Property. The Wernecke Supergroup consists of over 13 km of fine grained sedimentary carbonate and siliciclastic rock (Delaney, 1981; Thorkelson, 2000) that was deposited between 1.66 Ga and 1.60 Ga (Furlanetto et al., 2013). The entire Wernecke Supergroup was deposited as a passive margin on Laurentia (Furlanetto et al., 2016).

The Wernecke Supergroup is divided into three Groups. From old to young these groups are the Fairchild Lake Group, the Quartet Group and the Gillespie Lake Group. The Fairchild Lake Group consists of mud to siltstone and is locally metamorphosed to greenschist as a result of the Racklan Orogeny. The Quartet Group consists predominantly of well-bedded fine grained siliciclastic rocks and shale. The Gillespie Lake Group consists predominantly of carbonate rocks, commonly with stromatolites, and fine-grained siliciclastic rocks (Delaney, 1981; Thorkelson, 2000).

The Wernecke Supergroup was deformed and metamorphosed during the ca. 1.6 Ga Racklan Orogeny (Thorkelson et al., 2005; Furlanetto et al., 2013). The Racklan Orogeny caused greenschist metamorphism of the lower part of the Wernecke Supergroup and thrusting and folding. The Racklan Orogeny is interpreted as the result of Australia-Laurentia collision by several researchers (Thorkelson and Laughton, 2016; Verbaas et al., 2018).

7.1.2. The Wernecke Breccia

The Wernecke Breccia comprise a set of hematitic breccia zones in Yukon Territory (Delaney, 1981). The breccias occur in the Wernecke Mountains, the Ogilvie Mountains and the southern Richardson Mountains (Thorkelson et al., 2001). The breccia zones in the Ogilvie Mountains were initially termed the Ogilvie Mountain Breccia (Lane, 1990), but were later considered a continuation of the Wernecke Breccia (Thorkelson et al., 2001). The Wernecke Breccia formed after the Racklan Orogeny (Mercier, 1989; Thorkelson, 2000). One of the breccia zones in the Wernecke Mountains was dated by U-Pb on metasomatic titanite at 1598.8 ± 1 Ma.

Individual Wernecke Breccia zones range from several metres across to 5 kilometres in size (Thorkelson, 2000). The breccia zones are tabular to roughly circular (Thorkelson et al., 2001). The breccia zones crosscut strata of the Wernecke Supergroup and deformational fabrics of the Racklan Orogeny. In the Ogilvie Mountains the Wernecke Breccia occur in a northern breccia belt and a southern breccia belt (Lane, 1990). The breccia belts are roughly aligned with the northern and southern edge of the Proterozoic Ogilvie Inlier and are aligned with younger faults (Lane and Godwin, 1992).

Alteration

The Wernecke Breccia is mainly potassically altered, although a large subset in the Wernecke Mountains are sodically altered (Laughton et al., 2003). Locally, calcic alteration is predominant. Albite, scapolite, calcite, dolomite, orthoclase, ankerite, sericite and barite comprise the main alteration minerals (Hunt et al., 2005). Both alteration types are locally overprinted by chloritic and carbonate alteration in the form of disseminations and veins (Verbaas, 2017). Hitzman (1992) developed a model in which different alteration types were correlated to depth of breccia formation. However, as noted by Thorkelson et al. (2001a), this interpretation was based upon the incorrect premise that the Wernecke Breccia formed prior to deformation of the Wernecke Supergroup, a situation in which stratigraphic position could be equated to crustal depth. Hunt et al. (2005, 2011) related the host rock chemistry to the type of alteration, however, this interpretation is dependent on the presence of (meta-)evaporites in the Wernecke Supergroup for which there is no independent evidence (Verbaas, 2017). Carbon, sulfur, hydrogen, and oxygen isotopes appear to be buffered by the immediate country rock (Hunt et al., 2011). A large variation exists between the alteration at different mineral occurrences, which has been explained as varying halite dissolution, input of different fluids including magmatic and meteoric waters, and depth of formation (Hitzman, 1992; Kendrick et al., 2008; Gillen, 2010; Hunt et al., 2011).

Mineralization

Mineralization of the Wernecke Breccia is associated with hematite and magnetite and includes chalcopyrite, pitchblende, brannerite and cobaltite (Hunt et al., 2005). Elevated concentrations of Au are common in association with Cu but gold is not visible (Hunt et al., 2005). Mineralization of the Wernecke Breccia occurs as sulphide pods, veins, stringers, and disseminations. The most common Cu bearing sulphides are chalcopyrite and bornite, with minor chalcocite and tenorite. Other common Cu bearing minerals in fractures and on weathering surfaces are malachite, azurite, and chrysocolla. Cobalt occurs as cobaltite and erythrite in veins, stringers, blebs and disseminations. Uranium is common in many of the Wernecke Breccia zones and occurs as pitchblende and brannerite, but appears to be completely absent from the Monster Property (Setterfield, 2007).

The exact mineral paragenesis differs per mineral prospect but commonly follows three broad stages. The first stage coeval with early brecciation and characterized by potassic or sodic metasomatism abundant in magnetite ± hematite. The main phase of brecciation is accompanied by magnetite ± hematite ± chalcopyrite-pyrite mineralization, and the last stage may involve the deposition of carbonates ± magnetite, hematite, chalcopyrite and pyrite. Locally barite veins are abundant during the last stage (Hunt et al., 2005).

7.1.3. Post-brecciation

A roughly 150 m.y. hiatus separates the Wernecke Breccia from the subsequently deposited Pr1 basin (Medig, 2014). The Pr1 basin overlies the Wernecke Supergroup and Wernecke Breccia in the Ogilvie Mountains. This basin formed as an intracratonic rift basin and, together with similar basins further south on the Laurentian margin, represents rifting of Australia from Laurentia (Medig, 2014). The basin infill is characterized by immature sediments that were likely sourced from felsic intrusives.

The Pinguicula Group overlies the Wernecke Supergroup and Wernecke Breccia in the Wernecke Mountains. The Pinguicula Group consists of fine grained sediments that were deposited after 1.38 Ga (Medig, 2016).

7.1.4. Clasts within Wernecke Breccia

The Wernecke Breccia are predominantly heterolithic and clasts were derived not only from the immediate host rock, but also from formerly overly lithologies (Laughton et al., 2003; Furlanetto et al., 2013; Nielsen et al., 2013; Verbaas et al., 2018). Clasts within the Wernecke Breccia may include shale, carbonate rock, sandstone, greenschist, amygdaloidal basalts, sediments with soft sediment textures and mafic to intermediate intrusions (Thorkelson et al., 2001; Nielsen et al., 2013; Verbaas et al., 2015). The igneous clasts within Wernecke Breccia were sourced from a formerly overly thrust nappe which may have been the source of metals (Nielsen et al., 2013).

7.1.5. Correlation to IOCG deposits on Australia

The Wernecke Breccia are included in the IOCG deposit class (Hitzman et al., 1992). The Wernecke Breccia are considered a non-magmatic IOCG province (Hunt et al., 2007). The Wernecke Breccia have been correlated to the giant Olympic Dam deposit on the Gawler Craton, Australia (Thorkelson et al. 2001; Verbaas et al., 2018) on the basis of age, lithological similarity, and detrital zircons of sedimentary clasts within the breccia zones.

7.2. Property Geology

7.2.1. Wernecke Supergroup

The Monster Property is centered around several Wernecke Breccia zones that were emplaced within the Wernecke Supergroup (Lane, 1990; Lane and Godwin, 1992). The Wernecke Supergroup here consists of sediments of the Quartet Lake Group and the Gillespie Lake Group (Baknes, 1995; Lane and Godwin, 1992).

The Quartet Group consists of coarse quartzite to conglomerate, black shale, grey to black siltstone and grey mudstone. The conglomerate unit is highly variable and contains well sorted and sub-angular 0.2 – 2.0 cm maroon mudstone, chert, and quartz pebbles. The shale to siltstone is commonly well bedded and cleaved, and interbedded with quartzite (Baknes, 1995).

The Gillespie Lake Group consists of grey to buff weathering silty dolostone, and buff weathering grey to orange silty dolostone to dolostone. The latter is commonly stromatolitic and may contain silica replacements of stromatolites as ragged masses or rhythmic beds. In areas of brecciation and accompanying deformation the bedding is contorted and silica may be replaced by jasperoid (Baknes, 1995).

The Wernecke Breccia crosscut the Wernecke Supergroup shortly after the Racklan Orogeny (Thorkelson, 2000; Furlanetto et al., 2013). The mineralization and alteration on the Monster Property is localized within and adjacent to the Wernecke Breccia. How far the breccias extend in the subsurface is unknown.

7.2.2. Wernecke Breccia

All of the mineralization on the Monster Property occurs within or adjacent to the Wernecke Breccia. The Wernecke Breccia on the Monster Property is close to 1.6 Ga in age (Lane, 1990; Furlanetto et al., 2013). The three main Wernecke Breccia zones on the Monster Property extend for more than 15 km NE-SW. The zones are elongated in a NE-SW direction and range from tabular to ellipsoidal to roughly circular with many apophyses.

The clasts within the Wernecke Breccia were sourced from the immediate Wernecke Supergroup, but likely also from formerly overlying igneous and sedimentary lithologies. Diorites that were mapped as continuous intrusions (Dyson, 1976; Baknes, 1995) may mostly be transported clasts within the breccia zones (Jones, 1999). The maroon and green mudstone and siltstones noted by Baknes (1995) may be derived from a formerly overlying sedimentary succession (Verbaas et al., 2014) that is linked to a sedimentary source on the Gawler Craton on Australia (Verbaas et al., 2018).

The Wernecke Breccia were separated into homolithic and heterolithic breccias by Lane (1990). Subsequent workers have used this terminology and attempted to map the breccias in detail using this distinction. However, the homolithic and heterolithic breccias may have sharp to gradational contacts, and whether a breccia is considered heterolithic or homolithic depends on the size of the area considered. In their entirety, the breccia zones are heterolithic.

Homolithic breccias are commonly located at the edge of the breccia zones and range from fractured wall-rock to crackle breccia to (less common) matrix supported breccia. The matrix of the homolithic breccias ranges from carbonate to clastic or soft sediment. Homolithic breccias commonly contain a low percentage of specular hematite, with the exception of maroon mudstone breccias which may contain up to 10% specular hematite (Baknes, 1995).

The heterolithic breccias contain a variety of clast types, including siltstone, shale, dolostone, diorite, banded iron formation, chert and quartzite. The matrix of the heterolithic breccias commonly contains quartz ± chlorite ± carbonate ± specular hematite ± sericite. Some heterolithic breccias have a clastic or soft sediment matrix. The breccias are commonly matrix supported with sub-angular fragments ranging from 1 cm to 1 m (Baknes, 1995; Jones, 1999).

7.2.3. Alteration

The alteration within the Wernecke Breccia zones is varied and appears to depend at least in part on the lithology of both the immediate wall-rock and the breccia clasts. Ferroan dolomite is ubiquitous in the breccia zones and may be in part the result of assimilation of Gillespie Lake Group wall-rock. Siderite is another common carbonate mineral and can locally be related to Mn-staining. Siderite is commonly associated with silica alteration in dolomites and spatially associated with clastic rocks of the Quartet Group (Jones, 1999).

Hematite occurs as specular hematite and earthy hematite, and hematite alteration is ubiquitous on the Monster Property. Earthy hematite is most common on the margins of the breccia zones, and specular hematite is more common towards the center and in association with diorite clasts. Many of the breccia clasts are partially or completely replaced by hematite and/or silica. It is possible that several ‘maroon mudstones’, ‘jasperites’ and ‘banded iron formations’ are in fact replaced clasts of sedimentary rock. Dark red hematite-carbonate veins occur in the Cobalt Cirque area (Jones, 1999).

Another common alteration style is layered silica and carbonate. This alteration appears to be localized in dolomitic host rock. The layers of silica and carbonate are ragged and contorted and it is unclear if they are related to the original bedding of the host rock. The rock has a very rough weathered surface. This style of alteration occurs over 200 x 400 m in the Jasper Zone (Jones, 1999).

Magnetite is uncommon but is present in some mineralized zones. Magnetite blebs and massive magnetite occur locally in the eastern part of the Monster Property within altered beds of a dolomite clast (Jones, 1999). A large magnetic high underlies the eastern Monster Property (Willams, 1997).

Chlorite alteration is pervasive in heterolithic breccia. This type of alteration is most commonly associated with diorite clasts and intrusions (Jones, 1999).

Potassic alteration is strongest in the western part of the Monster Property. Potassic alteration occurs as potassic feldspar and sericite alteration in breccia clasts and matrix. This type of alteration is less common in the eastern part of the Monster Property (Jones, 1999).

7.2.4. Structure

Primary bedding on the Monster Property forms a large EW striking anticline. Brecciation appears to be focused in the center of the breccia zone. Numerous steep faults striking roughly NS have been mapped by previous workers. These faults are commonly associated with drag folds in the Wernecke Supergroup strata. Aeromagnetic data implies a set of roughly EW striking faults is also present on the Monster Property. Drag folding associated with faults is common, and it is possible that the large EW anticline that encompasses the Monster Property is a drag fold associated with the Monster fault (Williams, 1997).

Structures that have been mapped on the basis of aeromagnetic data proved to be associated to mineralization during follow up geological mapping (Jones, 1999). The intersection between roughly NS faults and roughly EW striking faults appears to be an important control on mineralization. These structures may have provided bounds and/or pathways for breccia metasomatism and mineralization.

Several valleys on the Monster Property may represent major faults. The geology across the valley is markedly different and the valleys appear to be too linear to be purely erosional features. North trending valleys in the eastern Monster Property likely represent normal faults and linear steeply dipping NW trending valleys are faults of unknown type.

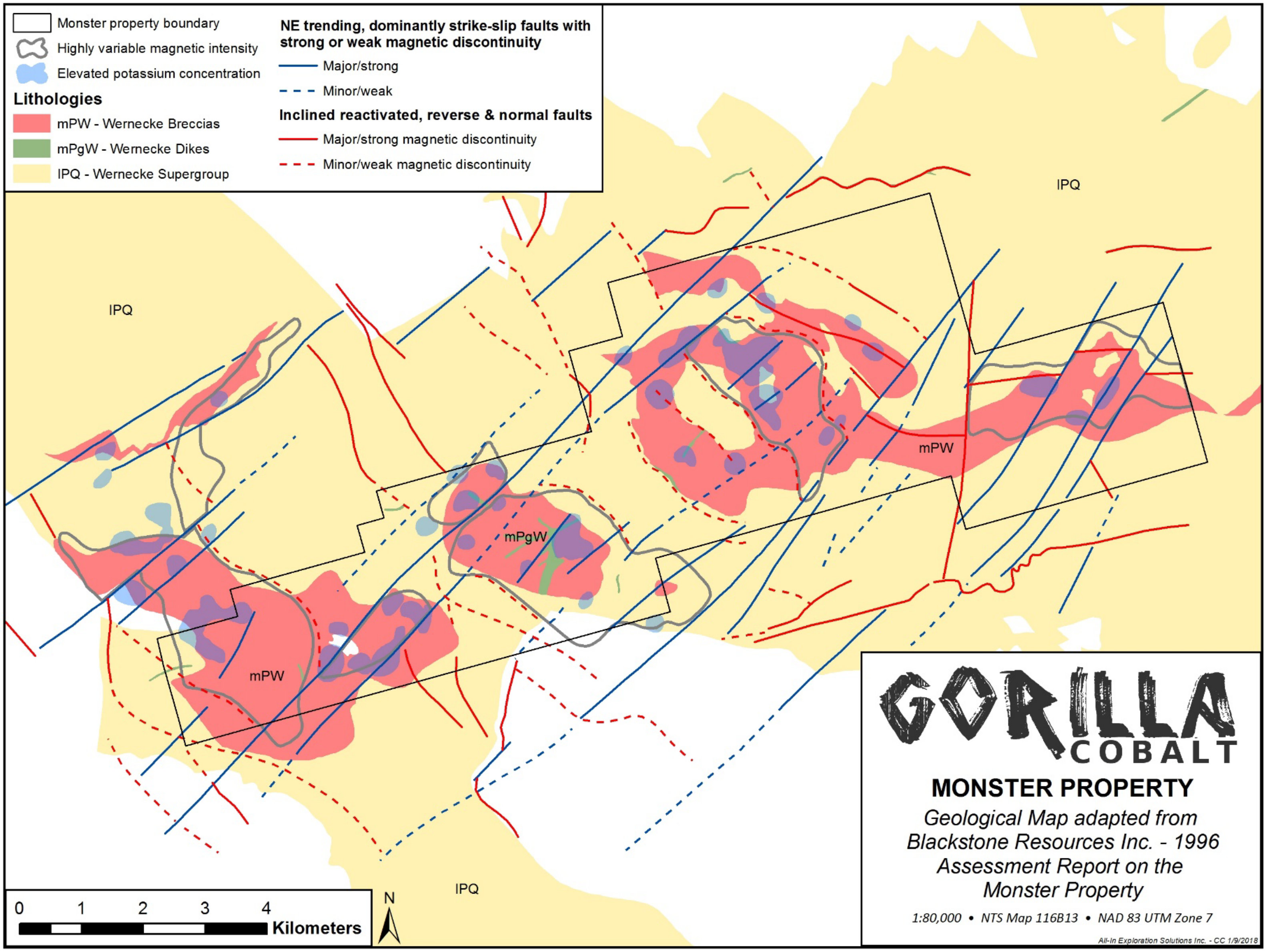

Figure 4. Structural framework as defined by airbone geophysics (Williams, 1997) and geological mapping (Lane, 1990; Lane and Godwin, 1992).

7.2.5. A possible buried intrusion and other magnetic anomalies

Based on total magnetic intensity, Williams (1997) postulated that a large buried intrusion underlies the western part of the Ogilvie Inlier. This intrusion is modeled as a 9 km deep magnetic high of 0.377 SI that underlies the western part of the Monster Property. The effects of this intrusion were removed to allow for the evaluation of residual anomalies (Williams, 1997).

Two anomalies underlie the eastern part of the Monster Property. These anomalies coincide with interpreted EW structures. The north anomaly is a magnetic high of 0.031 SI that starts at approximately 300 m and dips steeply to the north. The south anomaly is a magnetic high of 0.012 SI and dips to the south. The anomalies are somewhat interdependent and variations in size, shape and intensity are possible (Williams, 1997). During follow up ground mapping, Jones (1999) noted that mineralization is common on the surface above the magnetic anomalies (Figure 5).

The magnetic anomalies on the Monster Property are relatively small 5^{th} order residual anomalies. The anomalies are likely due to higher ratios of metasomatic magnetite/hematite within the Wernecke Breccia. The anomalies are too high to be only due to increased hematite. Diorites that crop out on the claim do not coincide with magnetic highs, and are generally of low magnetic intensity, precluding a dioritic origin for the anomalies.

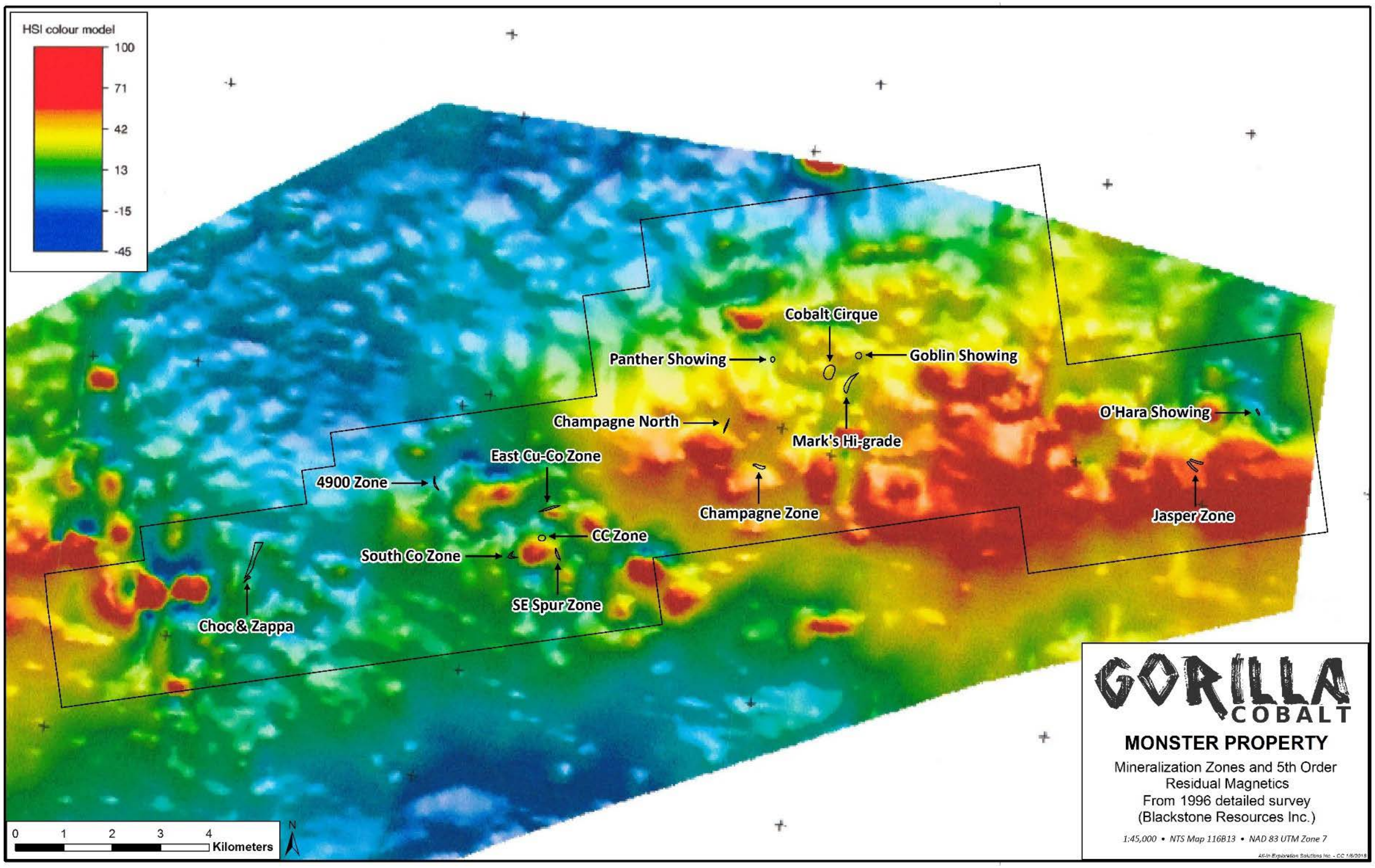

Figure 5. Mineralized showings overlain on 5th order residual magnetics. Note the SE SPUR, CC, and South CO Zone straddle the same magnetic anomaly

7.2.6. Cobalt, copper and gold anomalies from soil surveys

Anomalous Co, Cu and Au concentrations were defined by exploratory work from 1993 – 1998. The data from these programs (Caulfield, 1993; Baknes, 1995; Falls & Baknes, 1995; Jones, 1999) was used to generate soil anomaly maps (Figure 4, 5, 6) using a spline surface. Note that the dataset is limited and needs to be expanded in future programs.

Anomalies of Co and Cu are moderately correlative (Jones, 1999). Co anomalies are less ubiquitous on the property than Cu. The 99th percentile of Co is 177.5 – 2300 ppm. The 99th percentile of Cu is 2491 – 4810 ppm.

Anomalies of Au are weakly correlated to Cu (Jones, 1999). The highest Au in soil is 360 ppb.

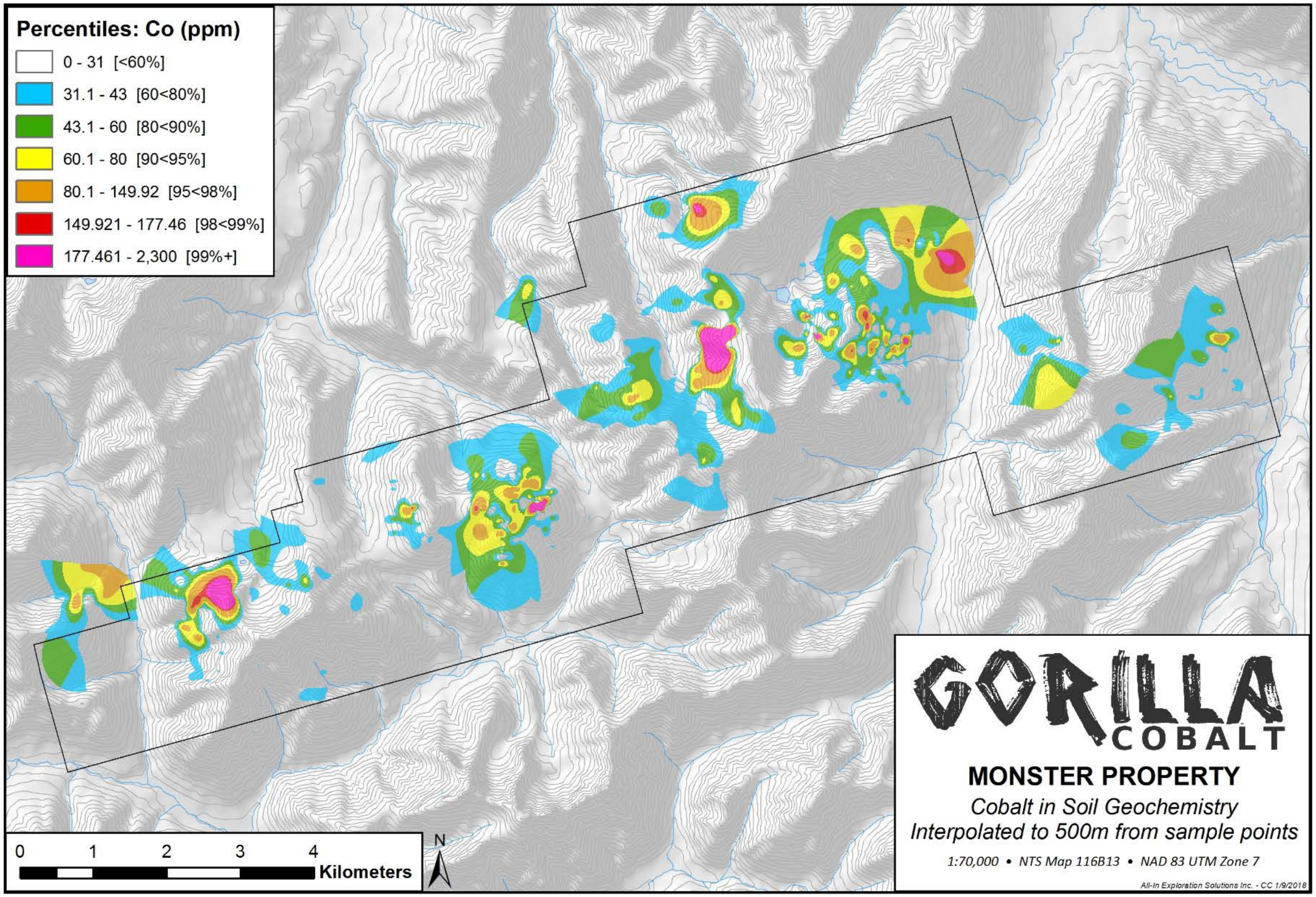

Figure 6. Co anomalies in soil. This map was generated using a spline surface based on the data points presented in Figure 6.

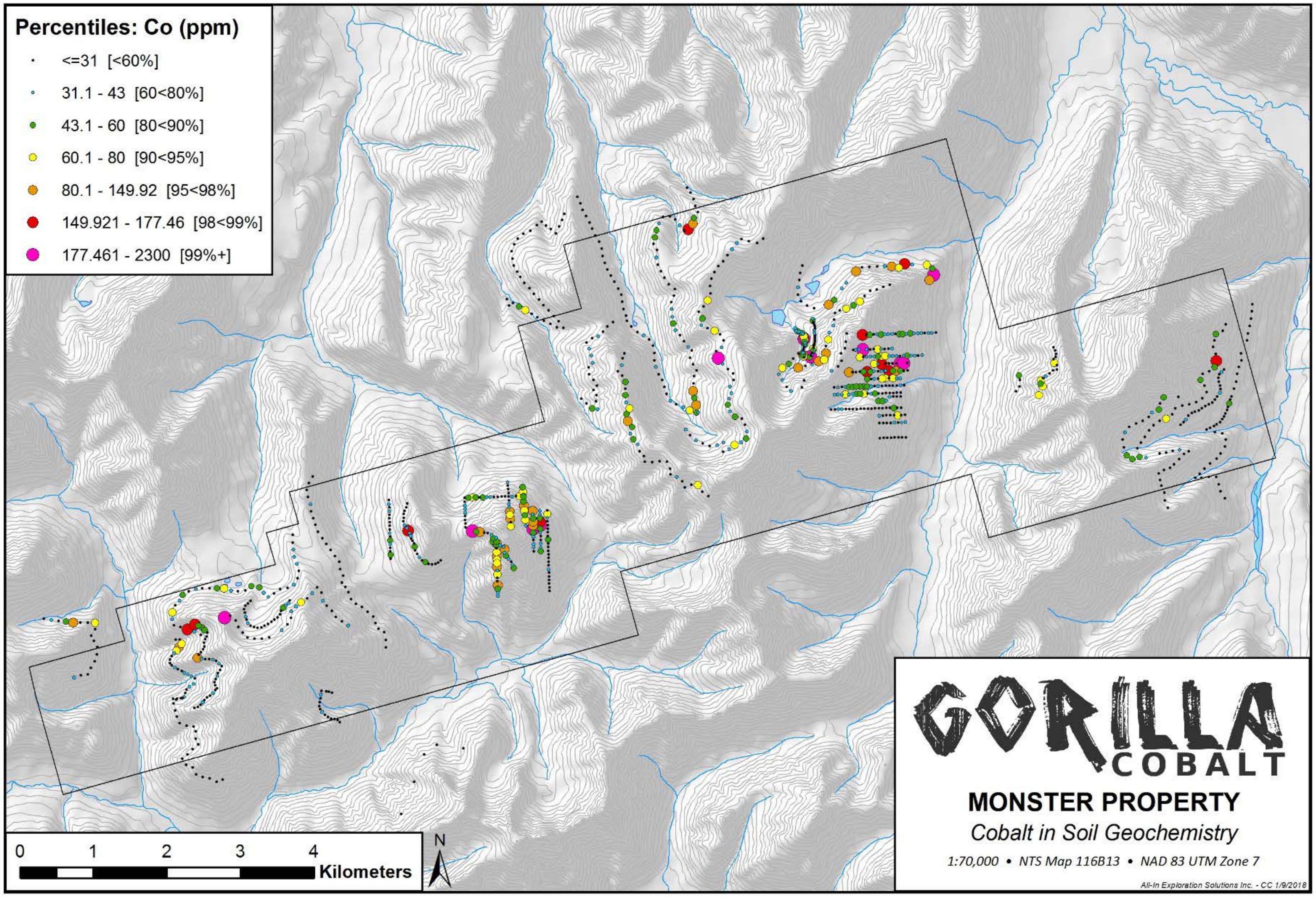

Figure 7. Co in soil.

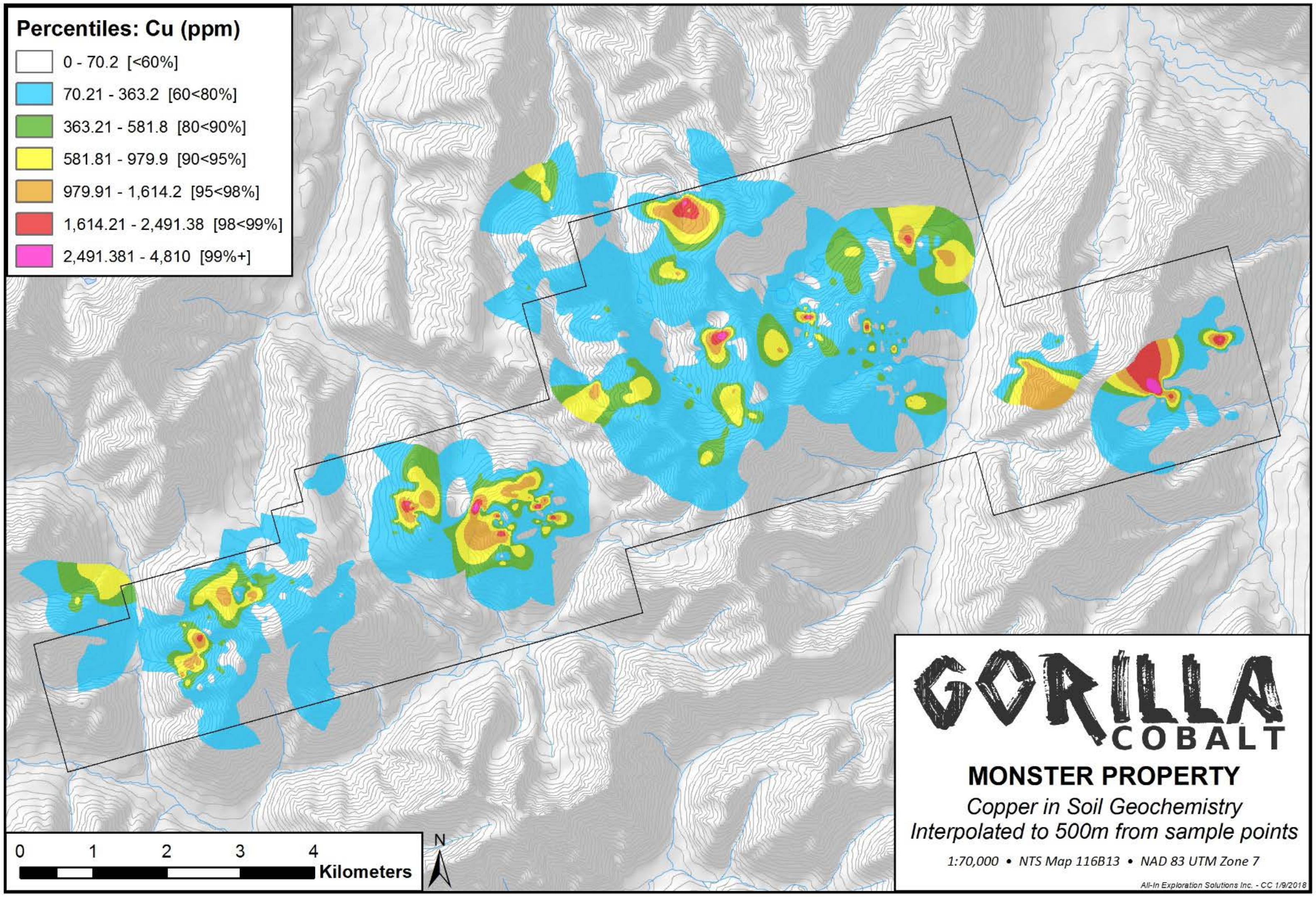

Figure 8. Cu anomalies in soil. This map was generated using a spline surface based on the data points presented in Figure 8.

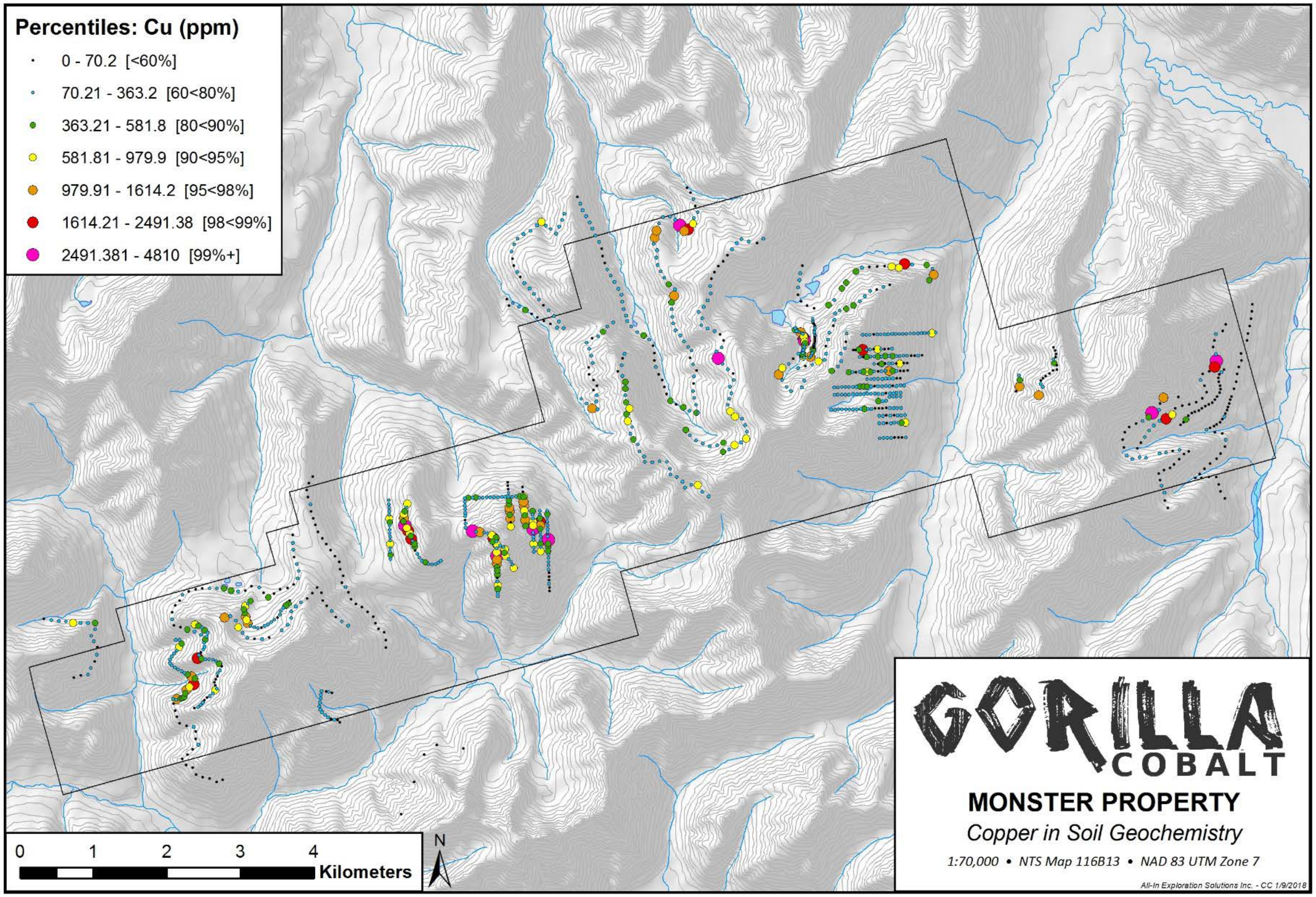

Figure 9. Cu in soil.

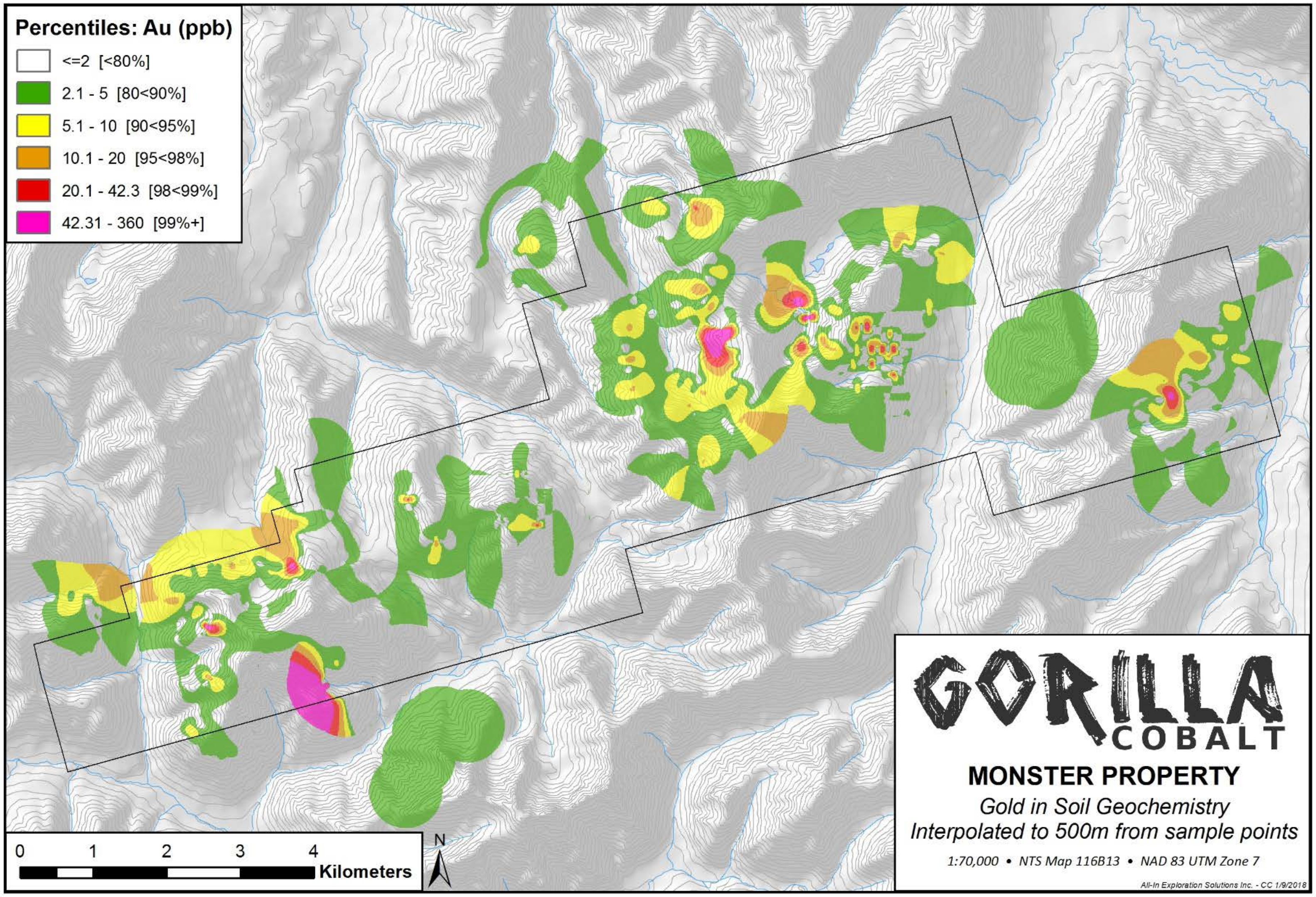

Figure 10. Au anomalies in soil. This map was generated using a spline surface based on the data points presented in Figure 10.

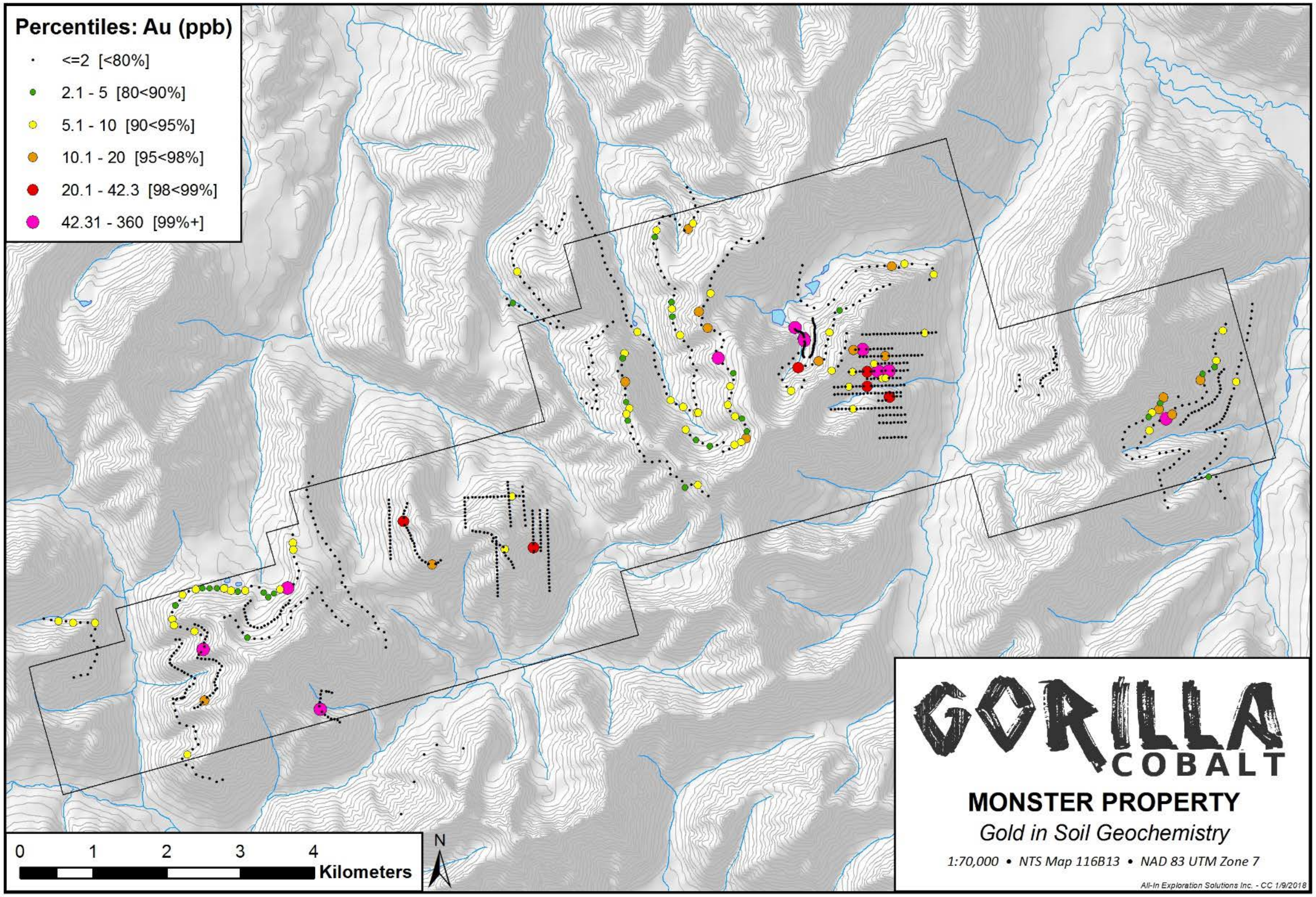

Figure 11. Au in soil.

7.2.7. Mineralization

Mineralization on the Monster Mineral claim occurs within and immediately adjacent to the Wernecke Breccia. Mineralization commonly occurs as disseminated chalcopyrite ± cobaltite ± bornite, chalcopyrite-chalcocite-bornite stringers and disseminated cobaltite (Baknes, 1995). The type of alteration appears to depend on the lithology of the breccia clasts within and surrounding the mineralization (Caulfied, 1993; Baknes, 1995; Jones, 1999). For example, stringers of chalcopyrite and quartz occur within siliceous sedimentary clasts, and disseminated chalcopyrite occurs with chlorite within diorite fragments. Mineralization is commonly associated with increased potassic alteration, but also occurs without an apparent increase in alteration.

Numerous mineral occurrences on the property were described in detail during exploration programs from 1993 – 2003 (Figure 12). These mineralized zones are described in the following section from roughly west to east.

The results of rock samples in the following tables has not been confirmed by the Company. However, the data, including data verification, are publicly available in Yukon Assessment Reports (Caulfield, 1993; Baknes, 1995; Falls & Baknes, 1995; Jones, 1999; Setterfield, 2001, 2003; Setterfield & Tykajlo, 2002).

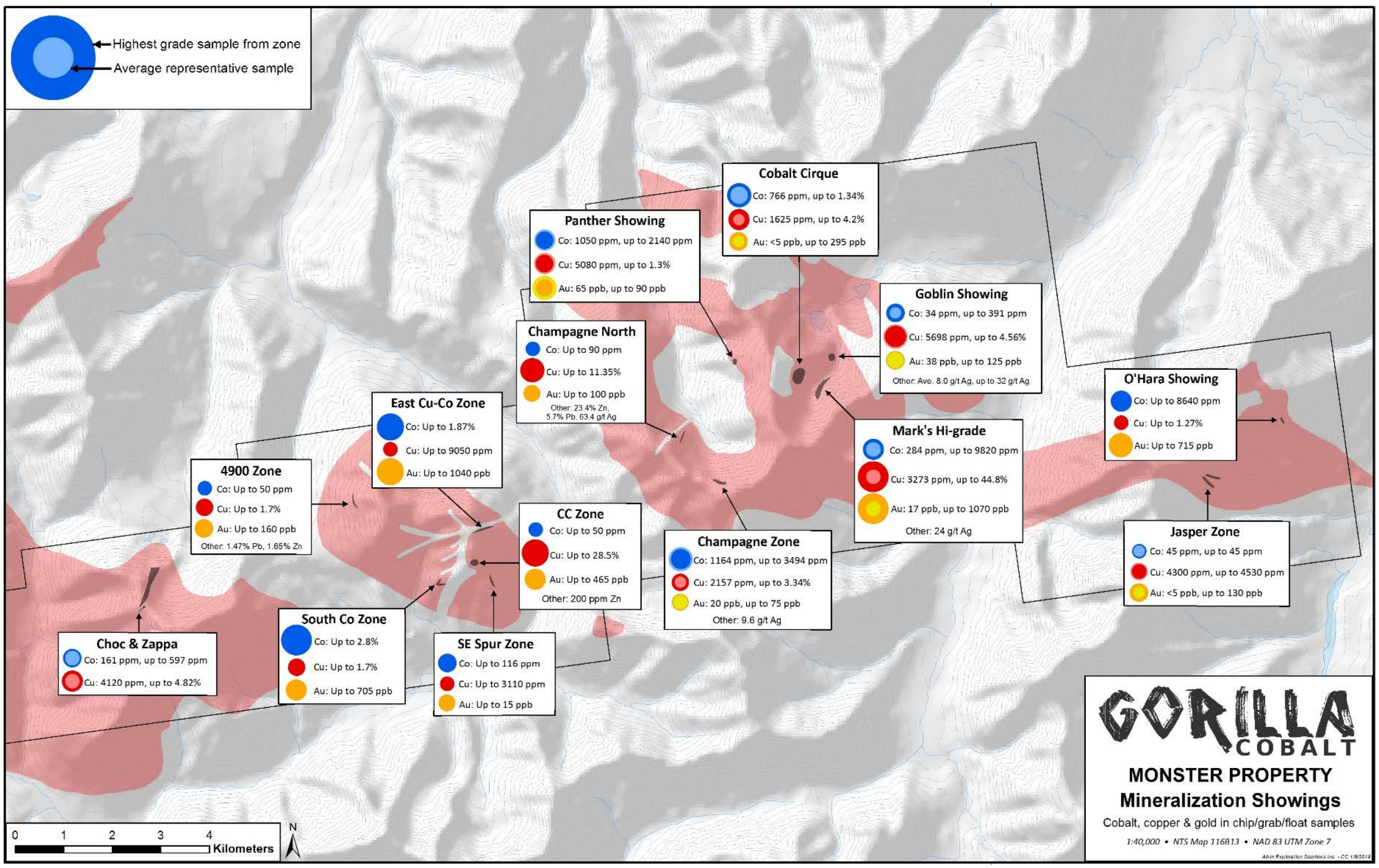

Figure 12. Mineralized Showings on the Monster Property

Choc and Zappa Zone

The Choc Zone consists of a discontinuous 8 x 50 m zone of mineralization. The size of the Choc Zone is limited by the extent of exposure. Mineralization occurs as disseminated bornite and chalcopyrite in brown weathering laminated dolostone. The dolostone host is distinctive from the surrounding stromatolitic and locally jasperoidal dolostone (Baknes, 1995).

The Zappa Zone occurs 25 m west of the Choc Zone and consists of a narrow zone of mineralization that is continuous for about 50 meters at a strike of 020°. The 020° structure that hosts the mineralization may be a fault zone. Mineralization consists of disseminated chalcopyrite and bornite along bedding with minor cobaltite in veinlets and fractures. The mineralization is strongest within the structure but persists about 15 m to the east (Jones, 1999).

Table 7.1. Selected results from the Choc and Zappa Zone (Jones, 1999)

	Choc and Zappa Zone				
Type	**Locality**	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Grab	Choc	3870	5	<5	
Grab	Choc	2950	3	<5	
Grab	Choc	1780	3	<5	
5 m representative grab	Zappa	7460	300	<5	40 ppm Bi
select	Zappa	4.82%	597	<5	
4 m representative grab	Zappa	780	22	<5	

4900 Zone

The 4900 zone consists of a 70 x 100 m zone of mineralized subcrop and talus. Mineralization occurs as disseminated chalcopyrite in both matrix and clasts of a monolithic maroon mudstone breccia. The matrix of the breccia contains carbonate, specular hematite, and clastic mudstone. Chalcopyrite appears to be associated with increased hematite. Chalcopyrite with minor galena and sphalerite in laminated green mudstone and siltstone occurs in the southern part of the 4900 zone. The 4900 zone is poorly exposed, however soil geochemistry of >400 ppm Cu over a 700 x 100 – 400 area suggests continuous mineralization in the subsurface (Baknes, 1995).

Table 7.2. Selected results from the 4900 Zone (Baknes, 1995a)

		4900 zone		
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
float	7364	28	30	
float	1.70%	24	160	
float	3880	50	<5	0.1% Pb, 0.4% Zn
float	7960	24	<5	1.47% Pb, 1.65% Zn

South Co Zone

The South Co zone is poorly exposed but may exceed 50 by 70 m. The main host rock to mineralization is brecciated to non-brecciated siltstone and silty dolostone with minor jasper beds. These lithologies are silicified and carbonate altered, both pervasively and through stringer stockworks. Cobaltite occurs in disseminated veins and as fracture fillings in association with chalcopyrite. Copper mineralization occurs as blebby chalcopyrite in quartz-carbonate stringers and as disseminations (Baknes, 1995).

Table 7.3. Selected results from the South Co zone (Baknes, 1995a; Setterfield & Tyjkalo, 2002)

South Co Zone

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
4 m chip	3005	113	3	
5 m chip	4357	461	18	
5 m chip	767	51	3	
Grab	3840	256	<5	
Grab	8110	130	<5	
Grab	3160	1.43%	180	
Grab	1.70%	2.80%	705	

East Cu-Co Zone

The East Cu-Co Zone is located on an east-west trending ridge and is exposed over a 10 x 100 m area. The zone straddles a contact between east-west striking green laminated siltstones that contain either BIF or stratabound replacement features resembling BIF, and pink dolomitic siltstones. Large diorite clasts or intrusions are proximal to the East Cu-Co Zone.

Two styles of mineralization occur within the East Cu-Co Zone. The first style occurs as quartz-dolomite-chalcopyrite stringer stockworks hosted in green and grey siltstones-mudstones. The second style occurs as cobaltite in stringers and haloes that crosscuts dolomitic siltstone with stratabound blebs of chalcopyrite (Baknes, 1995a).

Table 7.4. Selected results from the East Cu-Co Zone (Baknes, 1995a)

East Cu-Co Zone

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
Grab	153	1.87%	1040	
2 m chip	4940	83	<5	
Grab	124	5360	180	
3.8 m chip	9050	462	215	

CC Zone

The CC Zone occurs on a brecciated contact between diorite and purple mudstone. Two types of mineralization occur in the CC Zone. The first type consists of massive fine grained hematite and possibly tenorite with interstitial malachite. The massive hematite tenorite is botryoidal and occupies voids within a pink breccia consisting of orthoclase-quartz altered mudstone and diorite fragments. Abundant malachite occurs within voids in hematite/tenorite and within fractures. The second type of mineralization is hosted in variable orthoclase-silica-specularite altered purple mudstone near an intrusive lithology (Baknes, 1995b)

Table 7.5. Selected results from the CC Zone (Baknes, 1995a)

		CC Zone		
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Float	21%	19	465	200 ppm Zn
Float	4680	14	<5	
Float	4980	50	<5	
Float	4530	22	<5	
Grab	28.50%	11	176	
2.3 m chip	2657	27	<5	
4.5 m chip	4324	13	<5	

SE Spur Zone

The Southeast Spur Zone is exposed on a southeast trending ridge. The zone lies on the margin of a diorite clast or intrusion. Lithologies within the Southeast Spur Zone are purple mudstone with green laminated mudstone-siltstone-BIF. Mineralization occurs as a quartz-carbonate-chalcopyrite stockwork, as disseminated chalcopyrite and pyrite blebs with haloes lacking hematite and as disseminated chalcopyrite throughout the purple mudstone (Baknes, 1995a).

Table 7.6. Selected results from the SE Spur Zone (Baknes, 1995a)

		SE Spur Zone		
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
12 m chip	2050	82	<5	
2.8 m chip	3110	116	15	
Grab	3110	23	<5	
Grab	2150	45	<5	

Champagne Zone

The Champagne Zone occurs close to the head of a valley and is exposed over a 20 x 25 m area. Mineralization is associated with the contact between dolomite and shale/wacke and occurs as blebby to fracture controlled sulphides with minor malachite, azurite and erythrite on fractures. The Champagne Zone is open along strike in both directions (Jones, 1999).

Table 7.7. Selected results from the Champagne Zone (Jones, 1999).

Champagne Zone				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
5.6 m representative grab	3630	138	10	
3.0 m representative grab	47	2810	50	
7.2 m representative grab	636	546	<5	
float select	7030	1795	75	
2 m grab	3.34%	32	10	9.6 g/t Ag

Champagne North

Similar to the mineralization at the Champagne Zone, mineralization at Champagne North occurs along the contact of dolostone with shale/wacke. Mineralization occurs as chalcopyrite and bornite in brecciated, silica-carbonate altered dolomite and concretionary shale, locally with finely disseminated cobaltite. The Champagne North area contains anomalous Pb-Zn mineralization and strong pyrite alteration (Jones, 1999).

Table 7.8. Selected results from Champagne North (Jones, 1999; Setterfield, 2001)

Champagne North				
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
4 m grab	1.41%	70	35	560 ppm Pb
float	11.35%	90	90	1415 ppm Pb, 63.4 g/t Ag
select	2570	45	40	1200 ppm Pb, 12.8 g/t Ag
float	2340	47	20	23.4% Zn, 5.7% Pb, 11.8 g/t Ag
grab	340	29	100	

Panther Showing

The Panther Showing is a 1 x 10 m zone of mineralization. The Panther Showing is situated close to a structure defined by aeromagnetics (EHW, 1997). Mineralization occurs as chalcopyrite-bornite in silica-altered dolomite associated with carbonate veining and potassic feldspar alteration (Jones, 1999).

Table 7.9. Selected results from the Panther Showing (Jones, 1999)

	Panther Showing			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Select	1.30%	2140	90	
5 m representative grab	5080	1050	65	

Cobalt Cirque

Cobalt Cirque is a steep north facing cirque with several mineralzed areas within it. The first area was termed the Upper Cobalt Cirque Showing in 1998 and occurs on the west slope immediately east of Cobalt Cirque. Two types of mineralization have been described from mapping and prospecting the cirque. The first type is a chalcopyrite-bornite-cobaltite-quartz stockwork in heterolithic and carbonate-rich breccias. Malachite, azurite and erythrite are indicative of mineralized outcrop. The second type is chalcopyrite and minor bornite in a dark green chlorite and hematite altered heterolithic breccia (Caulfield, 1993). The mineralization occurs at the contact of crackle brecciated dolomite and shale and is associated with shearing and diorite intrusions or clasts (Jones, 1999).

Table 7.10. Selected results from Cobalt Cirque (Caulfield, 1993; Baknes, 1995; Jones, 1999)

	Cobalt Cirque			
Type	**Cu (ppm)**	**Co (ppm)**	**Au (ppb)**	**Other**
Grab	4.20%	193	205	
Grab	1043	1.34	295	
Grab 4 m	5720	28	5	
5.6 m representative grab	1625	766	<5	
select	1.31%	49	<5	

Mark’s Hi-grade Showing

Mark’s Hi-grade occurs at the edge of exposure on the southeast wall of Cobalt Cirque. Mineralization is traceable along the edge of the outcrop for about 50 m upslope. Lower grade disseminated mineralization is approximately 30 meters wide. Mineralization consists of chalcopyrite, bornite, pyrite and cobaltite as disseminated blebs and veinlets in pink dolomite and shale (Jones, 1999).

Table 7.11. Selected results from Mark's Hi-grade Showing (Jones, 1999; Setterfield, 2001; Setterfield & Tyjkalo, 2002)

Marks Hi-Grade Showing

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
select	44.80%	9820	510	24 g/t Ag
5.0 m representative grab	2170	145	<5	
6.0 m representative grab	4620	341	50	
4.0 m representative grab	3030	367	<5	
3.0 m chip	5150	1265	25	

Goblin Showing

The Goblin Showing was discovered through soil sampling in 1994 and subsequent geological work in 1998. The Goblin Showing is mostly inaccessible due to the relief in the immediate area. Mineralization consists of bornite, chalcopyrite and cobaltite in a carbonate-quartz stockwork (Jones, 1999).

Table 7.12. Selected results from the Goblin Showing (Jones, 1999)

Goblin Showing

Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
5.0 m representative grab	3870	23	<5	4.4 g/t Ag
5.0 m representative grab	4890	26	<5	5.6 g/t Ag
5.0 m representative grab	2850	32	10	4.0 g/t Ag
5.0 m representative grab	16300	45	80	32.0 g/t Ag
5.0 m representative grab	4220	36	125	5.2 g/t Ag
5.0 m representative grab	5210	46	15	7.0 g/t Ag
5.0 m representative grab	2550	36	35	
grab 1 m	1.40%	391	10	2.0 g/t Ag

Jasper Zone

The Jasper Zone is located at the intersection of a steep reverse fault to the south and northeast trending basement faults to the east and west. There is also a northwest trending fault on the north side of the zone (Willams, 1997). The Jasper Zone is 200 x 400 m and situated adjacent to a magnetic anomaly described by Williams (1997). The Jasper Zone is strongly silica and carbonate altered and derives its name from the jasper replacement of both breccia clasts and individual beds within dolomite. Two significant zones of mineralization about 10 – 15 x 30 – 50 m each occur within the Jasper Zone. Mineralization occurs as disseminated blebs and fracture fillings of chalcopyrite. The best mineralization appears to occur in carbonate altered host rock (Jones, 1999).

Table 7.13. Selected results from the Jasper Showing (Jones, 1999)

Jasper Zone				
Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
6.8m chip	4530	15	15	
1.6 m chip	3640	7	<5	
select (5 m)			130	
7.0 m representative grab	4300	45	<5	

O'Hara Showing

The O'Hara Showing occurs at the intersection of two structures detected during the aeromagnetic survey in 1996 (Willams, 1997). The O'Hara Showing is 20 x 25 m zone that contains disseminated cobaltite, bornite and chalcopyrite in altered dolomite with quartz-carbonate veins (Jones, 1999).

Table 7.14. Selected results from the O'Hara Showing

O'Hara Showing				
Type	Cu (ppm)	Co (ppm)	Au (ppb)	Other
select	1.27%	8640	715	
2.0 m chip	5030	1360	100	

8. Deposit types

The Monster Property hosts IOCG (iron oxide copper & gold) mineralization. IOCG deposits were defined by Hitzman (1992) as a separate deposit class. This deposit class is characterized by abundant hematite and magnetite, low in sulphides and commonly enriched in light rare earth elements (LREE, Hitzman et al., 1992; Groves et al., 2010). Since its definition the IOCG deposit class has become to incorporate a variety of deposits, obscuring the critical features of IOCG 'sensu stricto' deposits (Groves et al., 2010).

IOCG sensu stricto deposits are structurally controlled magmatic – hydrothermal and commonly contain significant volumes of breccia. Mineralization commonly occurs in sulphides that are paragenetically younger than, but closely associated with, low Ti-oxides. Commonly these deposits are temporally, but not necessarily spatially, associated with alkaline to sub-alkaline intrusions (Groves et al., 2010).

The Wernecke Breccia on the property is interpreted as a steep sided breccia pipe that contains igneous and potentially other fall-back clasts (Thorkelson, 2000; Thorkelson et al., 2001; Nielsen et al., 2013; Verbaas et al., 2018)

9. Exploration

The Company has not yet undertaken exploration. All the data, interpretations, and conclusions within this report are based on or derived from historical work.

10. Drilling

The company has not yet drilled the property. One hole was drilled by Monster Copper Resources Inc. in 2003. The drillhole was collared at 559225E 7190193N and angled at -50° at azimuth 015°. The drillhole was meant to intersect a positive gravity anomaly defined in 2002. The end of hole was at 194.15 m. During the same field season, the gravity anomaly was determined to be an artifact of elevation correction. The drillhole intersected 1.5 m @ 1.66% Cu.

11. Sample Preparation, Analyses, Verification and Security

The authors have relied on previously filed reports, including the sample preparation, analyses, verification and security protocols therein.

12. Data verification

None of the historical data provided within this report has been verified by the Company. All historical data provided within this report is publicly disclosed in Yukon Assessment Reports 93204 93260 93296 93965 94370 94354 94430 93600 with certificates of analyses and/or data reduction methods (Caulfield, 1993; Falls & Baknes, 1995; Jones, 1999; Setterfield, 2001; Setterfield and Tykajlo, 2002; Setterfield, 2003; Williams, 1997). Data on the Uranium concentration in pulps was derived from assessment report 094186, but certificates of analyses and quality control methods are not disclosed (Setterfield, 2007).

13. Mineral processing and metallurgical testing

The Company has not yet undertaken mineral processing or metallurgical testing.

14. Adjacent Properties

The Coal claims are adjacent to the Monster Property in the northeast and southwest. These claims cover mostly the Wernecke Supergroup and a small part of the Wernecke Breccia. The focus of exploration on the Coal claims has been carbonate replacement lead-zinc-silver mineralization. This mineralization occurs within carbonate beds of the Wernecke Supergroup.

15. Other Relevant Data and Information

The Wernecke Breccia are interpreted to be steeply dipping breccia bodies by academic workers (Nielsen et al., 2013; Verbaas et al., 2018). However, their original orientation may have changed during deformation and their continuation in the subsurface has not been tested.

An unpaved government-managed road runs through the adjacent Coal claims. This road is currently overgrown and unusable but could be cleared in the future.

16. Interpretation and Conclusions

Historical exploration work on the Monster Property and academic work on the Wernecke Breccia indicates the presence of IOCG mineralization. The host rocks to the IOCG mineralization are the Wernecke Breccia, which are exposed over much of the claim. There is ample evidence in historical reports (section 6 & 7) for the presence of cobalt, copper and gold in sufficient concentrations to warrant further exploration.

17. Recommendations

Mineralization on the Monster Property is localized but possibly widespread. The inherently chaotic distribution of clasts within Wernecke Breccia is expected to result in a partly chaotic distribution of mineralization as well. Mineralization may only be relatively continuous where it follows or is redistributed along faults and other pathways for fluid flow. Two end member types of mineralization are expected:

- Mineralization as a result of clast composition and preferential hydrothermal replacement. Due to the chaotic nature of the Wernecke Breccia this mineralization will be chaotically distributed.
- Mineralization as a result of focused fluid flow along structural pathways.

Future programs need to ascertain which anomalies and/or showings are continuous due to structural control and fluid flow pathways, and which anomalies and/or showings are not continuous but are due to local breccia chemistry and clast content. The first complication in making this distinction is that the mineralogical expression of both types of mineralization may be similar. The second complication in making this distinction is that clasts within Wernecke Breccia are up to 800 m long (Nielsen et al., 2013) and as a result mineralization that falls in the first category may be as extensive. However, clasts are commonly on the order of centimeters or metres.

17.1. Proposed 2 phase work program

The objective of the following work program is to: 1) increase the resolution of existing datasets, 2) use new techniques to probe the subsurface (IP and resistivity), and 3) to drill the anomalies that may result from these combined datasets. Because of the short weather window on the Property it is likely that these programs will be spread over the exploration seasons of 2018 and 2019. This proposed 2 phase work program (Table 6.1) is a guideline only and the results of the individual surveys may affect the subsequent allocation of company resources.

Table 14.1. Recommended 2 phase work program

Phase 1

Survey	Duration (days)	cost/day	Total cost
UAV and photogrammetric survey @ 40 m AGL	21	NA	$149,740.00
Expected standby	7	$2,500.00	$17,500.00
Surface mapping	14		
travel to/from Dawson City			$3,500.00
Salary	14	$300.00	$4,200.00
Soil Survey (1000 samples)			
Sampling	28		$20,000.00
Assays			$30,705.00
IP & TEM over 3 showings, 5 x 415 m, 6.2 line km			
Survey cost (excluding mobilization)	12	$3,900.00	$46,800.00
post-processing			$5,000.00
Mobilization & logistics			
Bell L/R @ 4hrs/day on camp + fuel	30	$6,480.00	$194,400.00
Camp rental/setup/cook	30		$45,000.00
Food (total of 200 person days in camp)		$40 per person per day	$8,000.00
Total cost (including 8% contingency and 10% admin fee)			$619,317
Total cost (including 12% sales tax)			$693,635

Phase 2

Survey	**Duration (days)**	**Cost/day**	**cost**
IP & TEM, 25 line km	30	3900	$258,000
Mobilization (flycamps)			$21,750
Rab drilling (45 100m holes)	45	approx $150/m	$675,000
Mobilization (flycamps)			$43,500
Total cost (including 8% contingency and 10% admin fee)			$1,177,935
Total cost (including 12% sales tax)			$1,319,287

17.1. Soil sampling

The current soil anomalies are based on the results of four different soil sampling programs from 1993 – 1998 and a total of 872 samples (Caulfield, 1993; Baknes, 1994; Falls & Baknes, 1995; Jones, 1998). Part of these soil samples were taken along contour lines and part in a grid. The soil samples do not completely cover the Monster Property. Future exploration should aim to fill the gaps in the current soil sampling record.

17.2. Surface mapping

Surface maps of the Monster Property have been produced on a variety of scales ranging from 1:5.000 to 1:20.000. These maps have been produced assuming continuity of diorite bodies and breccia clasts. However, recent academic work (Nielsen et al., 2013) that the dioritic bodies within Wernecke Breccia are commonly not continuous, but are clasts that have fallen back into the breccias, and most breccia clasts cannot be correlated from outcrop to outcrop. If exposure permits, a new geological map should be produced taking into account that nothing within the breccia is necessarily continuous, except for structures and intrusions that also continue into the wall-rock.

Other material that may or may not be continuous is maroon mudstone. Maroon mudstone has been mapped in several localities but is not common in the Wernecke Supergroup. There are two possible origins for the maroon mudstone:

- The Wernecke Ogilvie Unlithified Succession (WOUS, Verbaas et al., 2018), which consists of predominantly red mud and wacke. The WOUS is preserved within Wernecke Breccia as clasts. In this scenario the maroon mudstone is not continuous.
- The Pinguicula Group (Medig, 2016), which contains ample maroon mudstone and postdates the Wernecke Breccia. In this case the maroon mudstone overlies the Wernecke Breccia and should be mapped as continuous.

Maroon mudstones of both origins may be present on the Monster Property, however, following the mapping of Lane (1990) and Lane and Godwin (1992), it appears unlikely that the maroon mudstone is of the Pinguicula Group.

17.3. UAV photogrammetry and/or LIDAR

The Monster Property is located on rugged terrain and is partly inaccessible by foot. Steep ridges and mountain sides that are excellently exposed are out of reach for a traversing geologist. Photogrammetry and/or LiDAR (light detection and ranging) obtained with an unmanned aerial vehicle (UAV, otherwise known as a drone) would allow for a detailed and safe reconnaissance of the entire property.

The benefit of photogrammetry over LiDAR is that images are returned in true colour. Elevation errors can be within 0.25 m using photogrammetry. The benefit of using LiDAR over photogrammetry is that the measurements of topography can be accurate to within 0.01 m. Using photogrammetry allows geologists to see inaccessible exposure in the same colours as accessible exposure and will likely prove to be of more use than LiDAR alone. For the best results the two methods are combined.

17.4. UAV magnetic survey

The magnetic survey performed on the Monster Property in 1997 was successful in delineating structures, providing a structural framework of the Property, and showed that magnetic anomalies coincided with mineralization. The line spacing of this survey was 250 m (Williams, 1997). It is recommended that an aeromagnetic survey is flown on the property that uses a dense grid (for example with 40 m line spacing as opposed to 250 m). This survey can be flown at two altitudes for better data quality. The benefit of UAV over traditional airborne magnetic surveys is that a consistent height above ground can be maintained.

17.5. Radiometric survey

Radiometric data reported in Williams (1997) locally coincided with mineralization on the Monster Property. This radiometric data was obtained during an airborne survey with 250 m line spacing. The dataset can be improved by using a lower line spacing.

17.6. Geophysical methods

Using areas of known mineralization, geophysical methods should be tested on a small area prior to a Property-wide survey. For example, a shallow induced polarization survey is a low-cost method that can be tested over for two mineralized showings to identify whether it is successful in delineating a target.

17.6.1. Induced polarization survey

Induced polarization (IP) is a survey method that measures the chargeability of the subsurface. The chargeability of sulfide minerals is relatively high. If the concentration of sulfides in a specific rock or ore are >10 % this will commonly result in an IP anomaly that can be regarded as a target for exploration.

On the Monster Property, Co and Cu are localized predominantly in the sulfide minerals chalcopyrite, bornite, and cobaltite. An IP survey may be able to highlight zones with elevated concentrations of sulfides, and hence of Co and Cu. IP is a ground method and it is unlikely that the entire Monster Property can be covered due to the high relief.

17.6.2. Electromagnetic survey

An electromagnetic (EM) survey can outline conductivity anomalies in the subsurface, and has traditionally been used to search for massive sulfides. These conductivity anomalies may be due to the presence of differing rock types or mineralization and alteration. EM surveys can be done on the ground or airborne. Considering the high relief on the Monster Property an airborne EM survey may be more cost effective than a ground survey. However, because only high concentrations of sulfide minerals will yield an EM anomaly, the use of EM is not warranted if there are no indications of massive sulfide pods in the subsurface of the property.

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