REPORT

On the 2020 YMEP Target Evaluation Program 20-093 On the Bonanza King Project

Near Carmacks, Yukon, CANADA

Located Within:

NTS Sheet: 115107 Whitehorse Mining District Latitude 62°24' North by Longitude 136°49' West

Current Operator:

Granite Creek Copper 409 – 904 Granville St Vancouver, BC, Canada V6C 1T2

Report Prepared by: Deborah James, B.Sc. P.Geo. Consulting Geologist, TruePoint Exploration 3194 Gibbins Rd, Unit 11 Duncan BC V9L 1G8

PERIOD OF WORK: July 25-31, 2020

REPORT DATE: January 31, 2021

Table of Contents

List	of Ta	bles .		iii
List	of Fig	gures		iv
1	Sum	mary	۲	5
2	Intro	oduct	ion	6
2	2.1	Purp	oose	6
2	2.2	Geo	graphic Terms	6
2	2.3	Abb	reviations and Units of Measurement	6
3	Proj	ect D	escription and Location	8
3	8.1	Loca	tion	8
3	8.2	Owr	ership and Permits	8
4	Acce	essibi	lity, Infrastructure and Climate, Infrastructure and Physiography	
Z	1.1	Acce	essibility	11
Z	1.2	Clim	ate	
Z	1.3	Phys	siography	
Z	1.4	Infra	istructure	12
	4.4.3	1	Regional Infrastructure	12
	4.4.2	2	Local Infrastructure	
5	Hist	ory		14
5	5.1	Expl	oration History	14
6	Geo	logic	al Setting and Mineralization	
e	5.1	Regi	onal geology	
e	5.2	Dist	rict Geology	20
	6.2.2	1	Layered Rocks	20
	6.2.2	2	Post Accretionary Intrusions	20
	6.2.3	3	Metamorphic Rocks	20
	6.2.4	4	Structure	21
F	5.3	Pror	perty Geology	
e	5.4	Min	eralization	
-	6.4.1	1	Bluff	
	6.4	2	Maud	27
	6.4.3	3	Butter	
	6.4.4	4	Bonanza Creek	27
	6.4.	5	Merrice	
		-		
	6.4	6	Crossing	
	6.4.6	6	Crossing	27
_	6.4.0 6.4.7	6 7 	Crossing Toot	27

7	7.1 (Deposit type) Exploration Model				
8	2020 Prog	ram	30		
8	.1 Over	view	30		
8	.2 Mapı	ping, Prospecting and Sampling	31		
	8.2.1	Bonanza King Adit	31		
	8.2.2	Southern End	34		
	8.2.3	Northern End	35		
9	Interpreta	tion and Conclusions	36		
10	Exploratio	n Recommendations	37		
11	Reference	S	38		
APP	ENDIX A:	Date, Signature and Certificate of Author	40		
APP	ENDIX B:	Sample Descriptions and Analysis	41		
APP	PENDIX C: Statement of Expenditures				

List of Tables

Table 3-2 Abbreviations and Units of Measurement	6
Table 3-1: Bonanza King mineral tenures	9
Table 5-1 Work history of mineral occurrences on and adjacent to the Bonanza King project	14
Table 4-1: Mineral Resources at Carmacks Cu-Ag-Au Project as of March 10, 2016*	19
Table 4-2: Mineral Reserves at Minto Mine as of December 31, 2017	19
Table 4-3: Mineral Resources at Minto Mine as of December 31, 2017	19
Table 4-4: Table of selected results from occurrences	

List of Figures

Figure 3-1 Location Map.	8
Figure 3-2: Location and claim map of the Bonanza King Project	0
Figure 5-1: Compilation map of work done on or adjacent to Bonanza King prior to 20201	7
Figure 6-1: Geology of the Minto Copper Belt. Source Yukon Geological Survey. See legend in next figure	e.
2	2
Figure 6-2: Legend for preceding map2	3
Figure 6-3: Bonanza King Geology Map2	4
Figure 7-1: Simplified diagram of deep-seated Minto-type porphyry model (Revised from Hood, 2012)2	9
Figure 8-1: 2020 Work areas on the Bonanza King Project	0
Figure 8-2: Map of 2020 results in the Bonanza Creek adit area. See property geology map for rock typ	e
legend	3
8-3 Results from the southern end of Bonanza King	4
8-4 Results from the northern Bonanza King Project. The 2020 sampling is in shades of purple and sample	d
are labelled with copper values in ppm3	5

1 Summary

The Bonanza King Project lies within the Minto Copper Belt, a linear stretch of intrusion hosted Cu (+/- Au-Ag-Mo) mineralization in the Dawson Range, south-central Yukon Territory. Centered on the Minto Mine the belt extends from north of the Yukon and Pelly Rivers confluence southeast to the community of Carmacks. The Minto Copper Belt is productive, hosting the Minto copper mine and the advanced stage deposit at Carmacks. Minto has produced approximately 471 million pounds of copper to date and both deposits have the highest-grade copper in Western Canada. Other occurrences and drilled prospects displaying the same style of mineralization and preliminary copper values of a similar caliber lie on strike between the two deposits.

Bonanza King is located approximately 37 km directly northwest of Carmacks, Yukon and 200 km directly northwest of Whitehorse, the capital of the Yukon Territory. Bonanza King consists of 152 contiguous claims which cover approximately 2330 hectares. The centre of the property is located at latitude 62° 25' N and 136° 39' W longitude on NTS map sheet 115107.

Intensive exploration in the Minto Copper Belt began in the 1960s following the discovery of the Casino porphyry copper deposit in the Dawson Range, 100 km northwest of the property. Prior to this time, vein hosted copper showings had been staked and worked close to the Yukon River in the late 1890s. After the Casino discovery, a staking rush in the area unearthed the Carmacks deposit and Minto mine properties in the early 1970s and focused exploration efforts on porphyry deposits suitable for open pit mining. The smaller, high grade veins hosted in Povoas Formation volcanic rocks that produced copper, gold and silver at the start of the 20th century were passed over in the search for elephants. The protolith to the metamorphic inliers that host mineralization at Minto and Carmacks are postulated to be mineralized Povoas Formation which has created interest in Povoas rocks as exploration targets.

Between July 25 and 31, 2020 TruePoint Exploration carried a work program on the Bonanza King Project. The work was carried out by True Point Exploration and contractors and funded by Granite Creek Copper with assistance from YMEP. The program consisted of prospecting, mapping, soil and rock sampling and clearing helicopter pads. A total of 15 rock samples and 22 soil samples were collected. The purpose of the work was to investigate existing mineralization in Povoas group rocks that have gained interest as the original host rocks of the Minto belt deposits. The program took 7 days of field work and 50 person days, costing \$52,400 based on YMEP rate guidelines.

This report was prepared to satisfy requirements for the Final Technical Report as required by the Yukon Mineral Exploration Program. Digital files accompany the report.

The Bonanza King Project merits continued work, although a new approach is needed to work in the dense forest and steep terrain. Aerial surveying using drones and helicopters is one approach that will pinpoint accessible areas and allow for aerial prospecting. A program of extensive line cutting is another approach and overgrown roads and trails leading towards the Bonanza King project from the Carmacks Property should be investigated and brushed out to facilitate access.

An exploration program of access management combined with aerial surveying is recommended. If possible, the open area along the GMB-Povoas contact to the south should be staked.

2 Introduction

2.1 Purpose

Between July 25 and 31, 2020 TruePoint Exploration carried a work program on the Bonanza King Project. The work was done in conjunction with a program on the Stu Copper Project. The work was carried out by True Point Exploration and contractors and funded by Granite Creek Copper with assistance from YMEP. The program consisted of prospecting, mapping, soil and rock sampling and clearing helicopter pads. A total of 15 rock samples and 22 soil samples were collected. The purpose of the work was to investigate existing mineralization in Povoas group rocks that have gained interest as the original host rocks of the minto belt deposits.

The program took 7 days of field work and 50 person days. The average number of people in camp was 7 and the cost was \$52,393.44 based on YMEP rate guidelines.

This report was prepared to satisfy requirements for the Final Technical Report as required by the Yukon Mineral Exploration Program. Digital files accompany the report.

2.2 Geographic Terms

The following geographic areas and features are briefly described for orientation with respect to the text, tables, and figures.

Dawson Range – a range of subdued mountains running northwest from Carmacks to Dawson City. Hosts numerous mineral deposits and occurrences and at times has been a mining district for promotional purposes.

Minto Copper Belt – a mining district trending northwest from Carmacks to past the Minto mine containing a cluster of copper (+/- gold, silver, molybdenum) mineral occurrences and deposits. Depending on the year and the user, the area is variable in size, but is anchored by the Minto and Carmacks Copper deposits. Variations on the name include Carmacks Copper Belt and Carmacks (Minto) Copper-Gold Belt.

Carmacks Copper Deposit – originally called Williams Creek, recently called Carmacks Project.

2.3 Abbreviations and Units of Measurement

Metric units are used throughout this report, except when referring to historic exploration work that was originally reported in the imperial system (conversions are given). Dollar amounts are reported in Canadian Dollars (CAD\$) unless otherwise stated. Coordinates within this report use UTM NAD83 UTM Zone 08N unless otherwise stated. The following is a list of abbreviations which may be used in this report:

Abbreviation	Description	
%	percent	
AA	atomic absorption	
Ag	silver	
AMSL	above mean sea level	
Au	gold	

Table 3-1 Abbreviations and	Units of Measurement	

Abbreviation	Description
li	limonite
m	metre
m ²	square metre
m ³	cubic metre
Ma	million years ago

Abbreviation	Description
AuEq	gold equivalent grade
Az	azimuth
b.y.	billion years
CAD\$	Canadian dollar
cm	centimetre
CM ²	square centimetre
cm³	cubic centimetre
Cu	copper
°C	degree Celsius
°F	degree Fahrenheit
DDH	diamond drill hole
ft or '	feet
ft ²	square feet
ft₃	cubic feet
g	gram
GMB	Granite Mountain
	Batholith
GPS	Global Positioning
	System
Gpt or g/t	grams per tonne
ha	hectare
in or "	inch
ICP	induced coupled plasma
kg	kilogram
km	kilometre
km ²	square kilometre
1	litre

Abbreviation	Description		
mg	magnetite		
mm	millimetre		
mm ²	square millimetre		
mm₃	cubic millimetre		
Мо	Molybdenum		
Moz	million troy ounces		
Mt	million tonnes		
m.y.	million years		
NAD	North American Datum		
NI 43-101	National Instrument 43-101		
opt	ounces per short ton		
OZ	troy ounce (31.1035 grams)		
Pb	lead		
ppb	parts per billion		
ppm	parts per million		
PDH	Percussion drill hole		
QA	Quality Assurance		
QC	Quality Control		
RC	reverse circulation drilling		
RQD	rock quality description		
Sedar	System for Electronic Document Analysis and		
	Retrieval		
SG	specific gravity		
st	short ton (2,000 pounds)		
t	tonne (1,000 kg or 2,204.6 lbs)		
UKHM	United Keno Hill Mines		
um	micron		
US\$	United States dollar		
Zn	zinc		

3 Project Description and Location

3.1 Location

The Bonanza King Project is located approximately 37 km directly northwest of Carmacks, Yukon and 200 km directly northwest of Whitehorse, the capital of the Yukon Territory (figure 3-1). Bonanza King consists of 152 contiguous claims which cover approximately 2330 hectares. The centre of the property is located at latitude 62° 24' 15" N and 136° 39' 33" W longitude on NTS map sheet 115107.

The Yukon Government has settled land claims with First Nations in the area, Little Salmon-Carmacks and Selkirk. Figure 3-2 shows the location of settlement lands relative to Bonanza King.



3-1 Location Map.

3.2 Ownership and Permits

Exploration activities in 2020 were carried out under Class 1 permit Q2020-0222 from Mining Land Use, Government of Yukon. A copy of the permit is included in the digital appendices.

The claims are registered in the name of Carmacks Mining Corp. and are in good standing and none have expired. See table 3-1 below for the list of claims.

On November 27, 2020 Granite Creek Copper completed its acquisition of Copper North Mining Corp., the owner of the Bonanza King Project claims. The transaction was completed by way of a plan of arrangement. Under the arrangement, Granite Creek acquired all of the outstanding common shares of Copper North (the "Copper North Shares") it did not already own for total consideration of 24,893,984 common shares of Granite Creek. (see news release November 27, 2020, <u>GCX website</u>).

There is a series of claims within the south part of the property that are privately owned by a different owner. These are some of the oldest claims in the area and have been surveyed to lots. In the literature these lots are variably referred to as crown grants, leases, lots, patented claims and surveyed claims. As in many mining properties with a long history of exploration, claim and occurrence and project naming overlaps, creating confusion. One of the lots was originally called Bonanza King and the mine on this claim had the same name. The YGS minfile record for this location refers to all workings on the lots as Bonanza Creek, and Copper North refer to their project as Bonanza King even though it does not contain the mine with that name.

Grant Number	Owner	Claim label	No. of claims	Expiry date
YC39231 – YC39234	Carmacks Mining Corp.	REM 11 - 14	4	2027-04-11, 2028-
				04-11
				2027-03-09, 2028-
YC65554 – YC65569	Carmacks Mining Corp.	HIP 1 – 14, 16 - 17	16	03-09, 2030-03-09,
				2031-03-09
YF50001- YF50025	Carmacks Mining Corp.	BEE 1 - 25	25	2025-06-16
YF50879-YF50967	Carmacks Mining Corp.	WASP 1 - 89	89	2023-07-20
YF57280- YF57281	Carmacks Mining Corp.	KING F1 - F2	2	2023-03-31
YF57282 – YF57293	Carmacks Mining Corp.	KING 3 – 14	12	2023-03-31
YF57294 – YF57296	Carmacks Mining Corp.	KING F15 – KING F17	3	2023-03-31
YF57297	Carmacks Mining Corp.	KING 18	1	2023-03-31
		TOTAL	152	

Table 3-1: Bonanza King mineral tenures.



Figure 3-2: Location and claim map of the Bonanza King Project.

4 Accessibility, Infrastructure and Climate, Infrastructure and Physiography

4.1 Accessibility

Bonanza King is accessible by the Freegold Road that leads northwest into the Dawson Range from Carmacks. The Freegold Road is maintained by the Yukon Government and is open seasonally between April and October. At the 35 km mark, an access road to the Carmacks project branches off for 13 km to the camp. The road is narrow, winding and steep in places, requiring 4X4 access under wet or snowy conditions. Beyond the Carmacks Project camp, user-maintained dirt roads and ATV trails provide access to the area. The centre of Bonanza King may be accessible by UTV roads. The site can also be accessed by a 15-minute helicopter flight from the airport in Carmacks or a short flight from staging areas located along the Klondike Highway located approximately 3 km to the east. An alternative access to the east side of the project is currently by boat from the Yukon River. For this program, access was by helicopter from the Carmacks Camp on Williams Creek.

The Freegold Road branches off Highway 2 at the village of Carmacks, which is a 1.75-hour drive along paved public highways from Whitehorse. Skagway, 180 km by road south of Whitehorse is the nearest year-round port with facilities for loading concentrate.

4.2 Climate

The Carmacks area has a northern interior climate with warm summers (+20° C), long cold winters (-20° C) and low to moderate precipitation (25-30 cm), most of which falls in summer. Mean annual temperatures are near -4°C. The dry climate leads to frequent forest fires. Snow cover remains from mid-October to mid-April at lower elevations and a month longer at higher elevations. The typical exploration season is from April to October.

4.3 Physiography

The property is part of the Yukon Plateau-Central Ecoregion which is characterized by a dry climate and extensive grasslands on south aspect slopes. The west boundary of the ecoregion is the limit of Cordilleran Pleistocene glaciation and glacial deposits. Glacial cover was partial, valley glaciers extended along major valleys and tributaries depositing glacial drift on lower slopes and valley bottoms. Colluvium blankets steep slopes and uplands.

Bonanza King covers a range of low mountains along the west side of the Yukon River between Merrice Creek and Hoocheekoo Creek, dissected by creeks draining into the Yukon River. Elevations range from a low of 500m along the river up to 1000 m along the ridgetops. Approximately half of the area has been burnt and is covered with dense brush and small trees. South of the burn, north-facing slopes are heavily timbered with black spruce and generally have a thick moss cover. South facing slopes are better drained and have a cover of poplar or pine. Outcrop exposure on the property is good for the area and 10-50% exposure is common (Casselman, 2008).

Part of the area has been burnt and the closely spaced new growth, crosscutting fallen trees and thick undergrowth make traversing in this area slow, sometimes dangerous and occasionally impossible.

4.4 Infrastructure

4.4.1 Regional Infrastructure

The nearest community to the project area is Carmacks, 60 km by road and trail or 47 km directly. Carmacks is incorporated as a village and covers 37 square kilometres. The economic base is government and services. There is seasonal work in mining and exploration, tourism, firefighting and construction. The population is not large enough to provide a workforce for mine construction and development, requiring workers to be brought from Whitehorse and further afield.

Services in the village include:

- Nursing station with doctors' consultations by appointment.
- Tantalus School offering classes for K-12. Yukon College provides GED, academic upgrading, computer training and occupational courses.
- Recreation Centre with attached, covered skating rink.
- Airport and helicopter pad within city limits, No scheduled flights.
- Landfill site at south end of town. Recycling services once a week at landfill.
- A community water system, although some residents have private wells, and there is a water delivery service.
- Electricity from the Yukon electrical grid.
- Cell service, internet and telephone available.
- RCMP station, volunteer ambulance and for protection
- Government of Yukon Lands and Forestry
- Little Salmon Carmacks First Nation government offices

Commercial services are limited, but include:

- 2 service stations
- Restaurants
- Grocery store
- Hotel and rental cabins
- campground

Carmacks has a population of 503 people, an increase of 78 people since 2006. The age group distribution is: 0-14, 125 people, 14-64, 345 people and over 65, 35 people. There are 195 private households, 100 of them are married or common law families, and 35 are lone parent families. English is the dominant language with a few aboriginal speakers and some French. (All information from Statistics Canada. 2012. GeoSearch 2012).

The nearest electrical power supply is a Yukon Energy Corp. (YEC) transmission line 12 km to the northeast on the east side of the Yukon River. The Yukon powergrid is a large hydro-based grid and is not connected to the rest of North America, so is required to be self-sufficient for power.

4.4.2 Local Infrastructure

There is a full service, road accessible trailer camp on the Carmacks property on Williams Creek. The camp facilities are owned by Kluane Drilling, and were rented by TruePoint Exploration for the program.

5 History

Bonanza King was the focus of exploration and development in the Carmacks area between 1898 and 1920 when numerous copper showings were staked in canyons on the west side of the Yukon River. After an ore shipment was shipped to the Granby Smelter in 1917 from the Bonanza King mine, work ceased in 1920, and didn't pick up again until the burst of exploration in the 1970s following the discovery of Casino and later Carmacks Copper (then Williams creek) and Minto. This burst of activity was short lived for Bonanza King as the focus had shifted to large bulk tonnage deposits.

In 2008 Western Copper conducted a 5-day program over the REM and HIP claims that had been staked in 2007 (Casselman, 2008). The program concentrated on the area to either side of the original Bonanza King lots. 125 soil samples were collected on 4 lines spaced 200m apart (soil lines shown on figure 6.1 and prospecting traverses were run over the Granite Mountain Batholith and Povoas formation contact. No rock samples were collected, largely because the contact was not exposed.

Additional work in the area in 2008 was carried out by Northern Tiger on the LED and DEL claims (Schultze 2008a, b), with the LED claims later incorporated into Bonanza King by Copper North. A rock sample of foliated basalt with malachite collected from a pit on the LED claims ran 0.399 g/t Au, 14.6 g/t Ag, 1.74% Cu. Further investigation of this pit was recommended.

5.1 Exploration History

Exploration history and ownership of the Bonanza King project and pertinent adjacent properties is summarized in the table below.

Timeframe	Location	Performed By	Work	Reference
1898-1910	Bonanza King lots	prospectors	Showings staked and fringe staked several times	YGS minfile 115I010
Canyonsalong westside ofYukon river		Prospectors	Numerous showings staked and worked	
1902-1908	Merrice	Prospectors	Staked and 47.2m of drifting and surface pits	YGS minfile 1151009
1910	Bonanza King lots	prospectors	Copper discoveries and eventual smelter shipment from veins in the canyons of Merrice and Williams Creek.	YGS minfile 115I010
1917	1917 Bonanza King lots		5.9 tonnes of ore from the Bonanza King shafts shipped to Anyox Smelter in Granby BC	YGS minfile 115I010
1920			Work ceases on the leases.	YGS minfile 115I010
?	Bonanza King lots	I. Goulter	Bonanza King Claims surveyed and taken to lease.	YGS minfile 115I010
1943	Bonanza King lots	Yukon Consolidated Gold Corp	Investigated the property, no work done	YGS minfile 115I010
1960s	regional		Staking rush in the Dawson Range following discovery of Casino deposit.	

Table 5-1 Work history of mineral occurrences on and adjacent to the Bonanza King project

Timeframe	Location	Performed By	Work	Reference
1971	Bonanza King	Arsenault and associates	Optioned property and surrounded the leases with claims but no work done.	YGS minfile 115I010
1971	Bonanza King	Hudson's Bay Oil and Gas	Soil sampling (Cu, Mo, Pb, Ag) and magnetometer survey over NW part of current Bonanza King claims.	Mitchell, 1971
1970-1973	Carmacks	Dawson Range Joint Venture	Discovery of Carmacks deposit and extensive exploration	Archer, 1971
1974	Bluff (DEL)	United Keno Exploration	Discovered and staked	Minfile 1151095
1974-1989	District	United Keno Hill Mines Ltd.	Work on the area between Minto and Carmacks including ground that is now part of the property or adjoining.	Watson and Joy, 1977; Newman and Joy, 1980; Leblanc and Joy, 1980; Coughlan and Joy, 1981; Joy 1981
1982	Toot	United Keno Hill Mines Ltd.	DIGHEM and magnetic airborne survey, soil sampling, mapping	McFaull, 1982
2006	Bonanza King	Western Copper Holdings	Staked REM claims around lots. GPS survey	YGS minfile 115I010
2007-2008	Bonanza King	S.Ryan and BCGold	Sleep claims staked adjacent to REM claims. Regional airborne magnetic and radiometric survey.	Not publicly released
2007	LED claims	Minto Explorations Ltd., Northern Tiger	LED claims staked to north of leases/lots. Soil sampling and prospecting program.	YGS minfile 115I010 Schultze, 2008a
2007	Bonanza King	Western Copper	HIP claims staked.	
2007	DEL claims	Minto Explorations, Northern Tiger	DEL claims staked immediately north of current Bonanza King project. Geochemical survey	
2007 - 2020	Minto		Commercial production at Minto mine.	
2008	Bonanza King	Western Copper	Soil sampling on HIP and REM claims. Transferred to Carmacks Copper ltd.	Casselman, 2008
2008	DEL claims	Northern Tiger	Mapping, geochemical sampling	Schultze, 2008b
2010	DEL claims	Northern Tiger	Geochemical sampling and mapping adjacent to Bonanza King on the north side.	Ouellette and Pollries, 2011
2011	DEL claims	Northern Tiger	Staked 10 claims, soil sampling, Zone D discovered	Ouellette and Pollries, 2011
2012	DEL claims	Northern Tiger	Ground IP, resistivity and magnetic survey	Ouellette and Pollries, 2011
2014	Bonanza King	B Harris	SLEEP claims restaked as KOO and added to Stu Property along with WCF claims	YGS minfile 115I010

February 1, 2021

Timeframe	Location	Performed By	Work	Reference
2015	Bonanza King	B Harris	Lapsed LED claims incorporated into Stu property	YGS minfile 115I010
2016-2017	Bonanza King	Carmacks Mining Corp.	KING claims staked over lapsed LED claims, BEE and WASP claims added to north and south of HIP and KING.	YGS minfile 115I010



Figure 5-1: Compilation map of work done on or adjacent to Bonanza King prior to 2020.

6 Geological Setting and Mineralization

6.1 Regional geology

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

The Minto Copper Belt, a chain of intrusion hosted Cu (+/- Au-Ag-Mo) deposits and occurrences extends from the Yukon and Pelly Rivers confluence southeast to the community of Carmacks. The belt is hosted in the Stikinia Terrane, separated from the Quesnellia Terrane on the east by the Teslin Fault and bounded by the Yukon Tanana Terrane (YTT) on the west. Mineralization is hosted in, or close to the contacts of, intermediate to felsic intrusive and meta-intrusive rocks of the Early Jurassic Minto Suite. Minto Suite plutons are of biotite-hornblende granodiorite to quartz monzonite composition and intrude into the Stikinia, Quesnellia and YTT terranes and the contacts between them.

The Upper Triassic Lewes River Group overlies the Stikinia-Quesnellia fault contact in the valley of the Yukon river. The Lewes River group is composed of augite phyric basalts, basaltic andesites and volcaniclastics of the Povoas Formation and overlying epiclastic rocks and limestones. The Hoocheekoo Fault runs northwest from near Minto to south of the town of Carmacks, parallel to the regional strike slip Teslin Fault which forms the valley of the Yukon River. The Hoocheekoo Fault positions Minto Suite intrusive rocks against upper the Lewes River Group (Figure 6.1).

The predominant northwest structural trend is represented by the major Hoocheekoo, Tatchun and Teslin faults on the east side of Stikinia 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 Deposit and numerous creek valleys.

Minto Suite members the Granite Mountain Batholith (GMB) and the Minto Pluton host the Carmacks and Minto deposits respectively, along with multiple occurrences between the two deposits. The GMB is composed of two different igneous suites: The Early Jurassic Long Lake Suite (EJgL) on the western side and the late Triassic Minto Suite (LTrEJgM) on the east side, where the deposits occur. Younger volcanic rocks of the Carmacks Group and Selkirk Group overlie the GMB. To the west the GMB intrudes Paleozoic metamorphic rocks of the Yukon Tanana Terrane. To the east the batholith is in fault contact with upper Triassic or older mafic volcanic rocks of Stikinia. South of Williams Creek the GMB is in normal fault contact with more Carmacks Group basalts along the Miller Fault.

The Minto and Carmacks deposits are the same type, informally classified as "Minto-type" alkalic porphyries that formed at deep (~20km) crustal levels. Recent work on the Minto and Carmacks Copper deposits classifies the host rocks of the hypogene copper mineralization as metamorphic rocks. Kovacs' recent work on the Carmack Copper deposit suggests that mineralization is hosted in foliated, folded and variably migmatitic metamorphic inliers (Kovacs et al., 2017) derived from previously mineralized Povoas Formation slabs torn up during emplacement of the GMB (Kovacs, pers. comm).

The resources and reserves listed in the tables below are proof of the mineral endowment of the Minto Copper Belt.

Zone	Resource domain	Class	Tonnage (t)	Total Cu (%)	Acid- soluble Cu (%)	Au (g/t)	Ag (g/t)	Sulphide Cu (%)
Total	Oxide and	Measured	6,484,040	0.86	0.69	0.414	4.235	0.17
Mineral Resource for zones 1, 4, 7, 7A, 12, 13 and 2000S	resources	Indicated	9,206,343	0.97	0.77	0.357	3.796	0.20
		ME + IN	15,690,383	0.94	0.74	0.379	3.971	0.20
		Inferred	912,614	0.45	0.30	0.119	1.900	0.15
	Sulphide Mineral resources	Measured	1,381,329	0.64	0.05	0.185	2.166	0.59
		Indicated	6,686,922	0.69	0.04	0.172	2.344	0.65
		ME + IN	8,068,252	0.68	0.05	0.178	2.332	0.65
		Inferred	8,406,835	0.63	0.03	0.150	1.994	0.61

Table 4-1: Mineral Resources at Carmacks Cu-Ag-Au Project as of March 10, 2016*.

*<u>www.coppernorthminingcom</u> Viewed on April 16, 2020).

The Minto mine is located 34 km north of the Carmacks deposit. The mine started development in February 2006 as an open pit operation and added underground development in September 2012. Production to date is approximately 471 million pounds of contained copper. Estimated mineral reserves and resources as at December 31, 2017 are listed in the tables below. As of October, 2019, the Minto mine had restarted production and started a new exploration program in January. (www.pembridgeresources.com/the-media viewed on April 13, 2020).

Table 4-2: Mineral Reserves at Minto Mine as of December 31, 2017.

Classification	Tonnes (kt)	Copper (%)	Silver (g/t)	Gold (g/t)	Contained Copper (kt)	Contained Silver (koz)	Contained gold (koz)
Proven	469	1.02	3	0.25	5	46	3.8
Probable	2,975	1.69	5	0.63	50	507	60.7
Total Mineral Reserves	3,444	1.60	5	0.58	55	553	64.4

Table 4-3: Mineral Resources at Minto Mine as of December 31, 2017.

Classification	Tonnes (kt)	Copper (%)	Silver (g/t)	Gold (g/t)	Contained Copper (kt)	Contained Silver (koz)	Contained gold (koz)
Total Measured Resources	3,904	1.19	3	0.38	46	422	47.9
Total Indicated Resources	12,644	1.48	5	0.60	188	2,080	424.4
Total Measured + Indicated	16,548	1.42	5	0.55	234	2,502	290.3
Total Inferred Resources	6,147	1.42	5	0.51	87	962	100.4

Mineral Resources are reported as at December 31, 2017 above a 0.5% Cu cut-off grade for potential open-pit scenarios and above a 1.0% Cu cut-off grade for underground mining scenarios. Stockpiles are treated as Measured Mineral Resources. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Mineral Resources are presented inclusive of Mineral Reserves. Total may not sum exactly due to rounding.

6.2 District Geology

Bonanza King lies within the Minto Copper Belt, a linear stretch of intrusion hosted Cu (+/- Au-Ag-Mo) mineralization in the Dawson Range, south-central Yukon Territory. Centered on the Minto Mine the belt extends from north of the Yukon/Pelly River confluence southeast to the community of Carmacks. The occurrences are hosted in, or close to the contacts of, intermediate to felsic intrusive and meta-intrusive rocks of the Early Jurassic Minto Suite. Minto Suite plutons are of biotite-hornblende granodiorite to quartz monzonite composition and intrude between Stikinia and the Yukon Tanana Terrane (YTT). The Hoocheekoo Fault runs northwest from near Minto to Carmacks Copper parallel to the regional strike slip Teslin Fault which forms the valley of the Yukon River. The Hoocheekoo Fault positions Minto Suite intrusive rocks against upper Triassic Povoas Formation.

6.2.1 Layered Rocks

The youngest layered rocks are Tertiary-Quaternary Selkirk basalts (TQS) outcropping north of the Minto Mine and in pockets west of the Yukon River. Upper Cretaceous to early Tertiary Carmacks Group volcanics (uKC) are dominantly mafic flood basalts and andesites with lesser felsic flow and tuffaceous unit and local basal clastic strata.

The Upper Triassic Povoas Formation (uTrP?) of basaltic to andesitic composition, includes andesitic ash through lapilli tuffs, with lesser clastic sedimentary units ranging from coarse conglomerate to mudstone and shale. It is in fault contact with Minto Suite plutons along the Hoocheekoo Fault and locally overlain by Jurassic age Laberge Group sediments (JKT).

6.2.2 Post Accretionary Intrusions

Early Mesozoic plutons intrude Stikinia, Quesnellia and YTT suturing the terranes together. Prolific arc magmatism associated with the collision of the Intermontane terranes with ancestral North America in the Late Triassic to Jurassic is associated with the copper, gold and molybdenum porphyries of B.C and related precious metal-rich veins and stockworks (Nelson et al, 2013). Examples include: Highland Valley, Red Chris, Galore Creek, KSM, and Mt. Milligan in BC. The most prolific period of porphyry formation was around 205 mya, the age of the Minto Intrusions.

Minto Suite members the Granite Mountain Batholith (GMB) and the Minto Pluton host the Minto and Carmacks Copper deposits and the Stu Property occurrences. The GMB is composed of two different igneous suites: The Early Jurassic Long Lake Suite (EJgL) on the western side and the late Triassic Minto Suite (LTrEJgM) on the east side, where the deposits occur. Younger volcanic rocks of the Carmacks Group and Selkirk Group overlie the GMB. The south end of the Minto pluton is separated from the GMB by an east-west normal fault, south of which lie Carmacks Group rocks.

On its west side the GMB intrudes Paleozoic metamorphic rocks of the Yukon Tanana Terrane. To the east the batholith is in fault contact with upper Triassic or older mafic volcanic rocks of Stikinia. South of Williams Creek the GMB is in normal fault contact with more Carmacks Group basalts along the Miller Fault.

6.2.3 Metamorphic Rocks

Recent work on the Minto and Carmacks Copper deposits classifies the host rocks of the hypogene copper mineralization as metamorphic rocks. Kovacs recent work on the Carmack Copper deposit suggests that mineralization is hosted in foliated, folded and variably migmatitic metamorphic inliers (Kovacs et al., 2017)

derived from previously mineralized Povoas Formation slabs torn up during emplacement of the GMB (Kovacs, pers. Comm). Hood's 2012 study on the Minto deposit postulates that the host rocks were emplaced into an actively deforming environment, producing sheared host rocks separated by non-sheared barren granodiorites.

6.2.4 Structure

The dominant structural direction in the area is northwest, parallel to the Teslin Fault along the boundary of Stikinia and Quesnellia. Foliation, fractures, structural zones and contacts tend to parallel this direction which appears to control mineralization. The Hoocheekoo Fault trends northwest through the Bonanza King Project.

Easterly to north-easterly trending younger, post-mineralization brittle faults such as the DEF fault north of Minto, the unnamed normal fault south of Minto and the Miller Fault south of Carmacks Copper have down dropped and rotated large blocks of ground. This block faulting may have caused the difference between flatter ore zones at Minto and steeper zones at Carmacks. Block faulting can cause large degrees of rotation within a short distance as shown by younger sedimentary units at Minto that have been tilted up to 60° (Tafti and Mortensen, 2004). Close to Bonanza King, the NE oriented fork of Hoocheekoo Creek and Camp and Nancy Lee Creeks could be surface expressions of these structures, which show as lineaments on magnetic surveys.

Limited mapping to date on the Bonanza King Project indicates a northwest trend to mineralization which is located along the contact between the Minto Intrusion and Povoas volcanics. Rocks mapped during the 2020 program show strong foliation, alignment of phenocrysts and are locally schistose. In some locations the structure obscures the original rock type.



Figure 6-1: Geology of the Minto Copper Belt. Source Yukon Geological Survey. See legend in next figure.

Figure 6-2: Legend for preceding map.

	Bonanza King Project
Geol	ogy
*	Minfile Occurence
Bedro	ck Polygons
TERTIA	ARY(?) AND QUATERNARY
	TQS: SELKIRK: columnar jointed, vesicular to massive basalt flows
LOWEF	R TERTIARY, MOSTLY(?) EOCENE
1	ITR2: ROSS: rhyolite flows, tuff, ash-flow tuff and breccia
MID-CI	RETACEOUS
UPPER	CRETACEOUS
orr bit	uKC:: CARMACKS: augite-olivine basalt and breccia
- + -	uKC5: CARMACKS: gabbro and monzonite bodies
UPPER	JURASSIC AND LOWER CRETACEOUS
1	JKT: TANTALUS: chert pebble conglomerate and gritty quartz-chert-feldspar sandstone
MID-JU	JRASSIC
1	MJqB: BRYDE SUITE: leucocratic monzonite, syenite and granite
	MJgB: BRYDE SUITE: Hbl monzodiorite, Hbl-Bt quartz monzodiorite, minor hornblendite
LOWER	RAND MIDDLE JURASSIC, HETTANGIAN TO BAJOCIAN
EARIV	122: Introduct COCT: arkosic sandstone and minor snale, pebble and boulder conglomerate
LAKLI	ElgL: LONG LAKE SUITE: massive to weakly foliated Bt-Hbl granodiorite
	EJqL2: LONG LAKE SUITE: Bt, Bt-Ms and Bt-Hbl quartz monzonite to granite
LATE T	RIASSIC TO EARLY JURASSIC
1	LTrEJgM: MINTO SUITE: foliated Bt-Hbl granodiorite; Bt-rich screens and gneissic schlieren
	ETrEJgbM: MINTO SUITE: Hbl gabbro
UPPER	TRIASSIC, CARNIAN TO NORIAN
1	uTrAK2: HANCOCK: massive to thick-bedded limestone
UPPER	TRIASSIC, CARNIAN AND OLDER (?)
LIPPER	u i rP?: POVOAS: augite or leidspar-phyric andesitic basalt flows, breccia, tuff, sandstone, argilitte TRIASSIC TO I OWER IIIRASSIC
	uTrIS1: SEMENOF: augite-phyric basalt flow and agglomerate. andesite
UPPER	CARBONIFEROUS, LOWER AND MIDDLE PENNSYLVANIAN
	uCB1: BOSWELL: siliceous argillite, siltstone, sandstone, chert conglomerate, volcanic breccia
1	uCB3: BOSWELL: micritic limestone, bioclastic limestone, marble
1	PngK: KELLY SUITE: strongly foliated Hbl \pm Bt tonalite, Hbl diorite to granodiorite
CARBO	NIFEROUS TO PERMIAN
	CPSM4: SLIDE MOUNTAIN: brown weathering, variably serpentinized ultramafic rocks
MISSIS	SIPPIAN MaCD: SIMDSON DANCE SUITE: Hall having matagementionity, matadianity and matatanality
DEVON	Mask: SIME SON KANOE SOTTE: HOPbearing metagranotione, metautorite and metatonance
///	uDMM1: MOOSE: massive and pillow basalt, amphibolite and greenstone
NEOPR	OTEROZOIC AND PALEOZOIC
l	PDS1: SNOWCAP: quartzite, psammite, pelite and marble; minor greenstone and amphibolite
1	PDS2: SNOWCAP: light grey to buff weathering marble
	<all other="" values=""></all>
Yuko	n Faults
_' '	normal, , approximate
	normal, , covered
<u> </u>	normal, , defined
	normal, , inferred
	strike slip, dextral, approximate
:	strike slip, dextral, covered
	strike slip, dextral, defined
:	strike slip, dextral, inferred
	tnrust, , approximate
_~	unrust, , inierred
	unknown, , approximate
	MIRIOWIN ; HIRCING

408000E 410000E 412000E 416000E 420000E 414000E 418000E Bonanza King Project 6928000N 6928000N 父 adit ŏ pit Minfile Occurence * **Rock Types** Carmacks Volcanics 6926000N 6926000N 115I 095 * Carmacks Mafic Intrusive BLUFF 1 15I 013 H Minto Suite Foliated to Gneissic (Cul-Ag-Au) (Cu-Ag-Au) granodiorite Minto Suite Granodiorite Long Lake quartz monzonite Long Lake granitoid 6924000N 6924000N 115I 012 × Diorite (Minto or Whitehorse -MAUD (Cu) Suite) Povoas volcanics Migmatized Povoas Povoas sedimentary rocks 6922000N 6922000N 115I 126 BUTTER * (Au-Cu 6920000N 6920000N 115I OID BONANZA CREEK (Cu-Ag-Au) 6918000N 6918000N 115I 128 GRAN (Cu) 6916000N 6916000N 115I 009 MERRICE 115I 008 (Cu-Ag-Au) CARMACKS COPPER 6914000N (Cu-Au-Cu-Cu-Cu-Ag) 6914000N CARMACKS 2 Kilometers Will 6912000N 410000E 412000E 420000E 408000E 414000E 416000E 418000E

Figure 6-3: Bonanza King Geology Map

6.3 Property Geology

The Bonanza King project straddles the boundary between the Granite Mountain batholith to the west and Povoas volcanics to the east. The Granite Mountain batholith in the vicinity of the claims is composed of foliated and unfoliated Minto suite granodiorite. The right lateral Hoocheekoo fault separates the intrusive rocks from Upper Triassic Povoas formation augite-phyric andesitic to dacitic volcanic flows and volcaniclastics. The protolith to the metamorphic inliers that host mineralization as Minto and Carmacks are postulated to be the Povoas Formation which has raised the profile of Povoas rocks as exploration targets (Kovacs et al., 2017). See figure 6-3.

Bonanza King has not been mapped in detail, but property scale mapping has occurred on the DEL claims to the north, and in the area surrounding the leases (LED claim). Bostock visited the leases in 1909 and noted that the granitic rocks were highly foliated with coarse phenocrysts of pink microcline and green hornblende. Outcrop over the claims ranges from 10-50% except along the strike of the contact of the GMB and Povoas Formation which is recessive and not exposed (Casselman, 2008).

Pollries and Ouellette (2016) describe the geology of the DEL claims.

"... underlain by the Povoas Formation, consisting primarily of andesitic basalt amygdaloidal to vesicular flows with lesser basaltic augite porphyry flows, minor basaltic agglomerate and a central andesitic feldspar ±augite porphyry flow with tuffaceous horizons, possibly representing the oldest member of the Povoas Formation (Paulter, 2011). The area along the Yukon River was not visited in 2008. However, 2011 mapping agreed with geological observations made in 1974 by United Keno Hill Mines stating that the area is underlain by an equigranular, coarse-grained hornblende diorite (Beavan, 1974). Probable related diorite dykes were also mapped in the northwestern and southeastern property areas, intruding the andesitic basalt amygdaloidal to vesicular flows (Pautler, 2011). Minor interflow sedimentary horizons, generally red or green siltstone, with limestone clasts and marble were also noted within the volcanic package in 2011. Sedimentary and limy volcanic horizons locally exhibited calc-silicate alteration with epidote, local garnet and pyroxene, and quartz ±carbonate stringers (Pautler, 2011).

(Schulze 2008b) mapped similar geology on the LED claims.

"Preliminary geological mapping indicated most of the property is underlain by Povoas Formation basaltic flows in northern areas and coarse conglomerate in southern areas. Evidence for basaltic flows arises from a single sample obtained from a pit excavated near the west property boundary of a showing of malachite staining within foliated, weakly biotitic basalt. Coarse conglomerate, with boulder-sized clasts and weak to moderate epidote alteration, is revealed at a steep slope in eastern areas, as well as cliff-like exposures south of the property. A single northwest-southeast trending vertical foliation measurement was obtained within the conglomerate. "

Potential outlying apophyses from the GMB outcrop east of the GMB-Povoas contact (Schulze 2008b). Abundant granitic float from a soil pit on the LED claims areas suggests a small granite stock may occur locally (Schulze, 2008a). Abundant limonitic monzonite float on the DEL claims may have been transported by glaciers during the Reid glaciation from a source to the southeast, perhaps the granitic stock on the LED claims?

The area is structurally complex with three north to northwest trending right lateral strike slip faults intersecting and offsetting each other. Indications from mapping suggest multiple shear zones and the mineralization is hosted in en echelon quartz lens.

Schulze (2008a,b) mapped at both the DEL and LED and recorded an east-northeast extending, steeply southsoutheast dipping foliation measurement in western areas on the DEL, and a single northwest-southeast trending vertical foliation measurement from conglomerate cliffs on the LED claims. Coates (1970) measured northwest trending structures in both Povoas and the granitic intrusion.

6.4 Mineralization

The dominant and productive style of mineralization are quartz lenses or veins with copper, gold and silver mineralization hosted at the contact between the GMB and Povoas formation. The best example is the 5 km long series of workings on the leases; each claim hosting mineralization. A smelter shipment from the Bonanza King adit produced an average grade of 5.26% Cu, 66.9 g/t Ag, 4.4 g/t Au from 5.9 tonnes of ore (YGS minfile).

The mafic rocks of the Povoas are chemically reactive and have a strong rheological contrast to the granodiorites. Alteration and fracturing has created fertile ground for mineralization which is best summed up in a description from Bostock (Atlas Explorations, 1970 contains copies of his description from Memoir 284, p.339).

"The granites have invaded the amphibolites [Povoas] to such an extent that the outcrops of the two formations appear to be about equally extensive: tongues dikes, and irregular-shaped mases of the former being found everywhere, where rock, in place, is to be seen.

The only apparent reason for the quartz being always so near the contact is, that the mineralizing solutions which have deposited the ores have found easier places for circulation in these some-what decomposed and fractured zones. The ores are apparently genetically connected with the granites, the ore-bearing solutions being an after effect of the intrusion of the granite mass. "

A secondary style of mineralization noted by Schulze (2008b) on the DEL claims are volcanic-hosted skarn occurrences that originated from distal fluids emanating from Minto-suite intrusions, including outlying dykes. He believed that small copper +/- gold soil and silt geochemical anomalies on the DEL likely had similar origins, although further geological mapping is required to confirm underlying lithologies.

Abundant limonitic monzonite float on the DEL claims may have been transported by glaciers during the Reid glaciation from a source to the southeast. The float is commonly weakly pyritic; one returned an elevated copper value. Descriptions of YGS minfile occurrences within or near the Bonanza King follows. The occurrences are listed from north to south (figure 6-3).

6.4.1 Bluff

The Bluff showing was first staked in 1974 by United Keno Exploration to cover copper mineralization discovered during construction of a winter road to the Minto deposit, causing a minor staking rush. Mineralization consists of veinlets containing copper oxide, minor chalcopyrite and pyrite exposed in andesitic volcanics and cut by diorite dykes. Traces of chalcocite containing silver also occur as fractures in altered felsite dykes. The present day DEL claims encompass the Bluff showing.

6.4.2 Maud

Maud is located 1.8 km due south of Bluff in a canyon on Hoocheekoo Creek and was first staked in 1899. It is now part of the DEL claims. Little is known about the occurrence and a 3m long adit following an unmineralized 0.6m wide shear zone in highly altered volcanics reputed to be at this location was not found during exploration programs on the DEL claims.

6.4.3 Butter

The Butter showing is located adjacent to the Hoocheekoo Fault on the west boundary of the Bonanza King Project on the Stu Copper property. It is a 450m long copper in soil anomaly correlated with a northwest trending magnetic anomaly attributed to the presence of amphibolite (Coughlan and Joy, 1981).

6.4.4 Bonanza Creek

The Bonanza Creek minfile occurrence is located close to the confluence of Nancy Lee Creek with Williams Creek, approximately 1 km southwest of the Yukon River. It includes all the occurrences on the lots, a 5 km long series of claims all hosting mineralization and numerous workings and pits.

Mineralization consists of bornite and chalcopyrite in en echelon lenses of quartz at the contact between GMB and Povoas. In some workings the quartz lenses are joined giving the appearance of a continuous vein. There is a minor amount of copper along foliation planes in granite near the contact and particles of free gold have been reported. The veins trend northwest and dip steeply east. The main outcrop on the Bonanza King No. 1 (Lot17), grades 3.29% copper over a 1.8 m width. The drifted vein ranged from 1.5 m to about 10 cm in width. A sample over the 1.5 m width assayed 1.45% copper, 10.3 g/t silver, and 0.69 g/t gold. The smelter shipment averaged 5.26% copper, 66.9 g/t silver and 4.4 g/t gold.

The vein on the former Dawson claim, (lot) is reported to be similarly mineralized with widths ranging from 5 to 45.7 cm. The vein on the War Eagle claim (Lot 34) was reported to be 0.6 m wide and to visually grade 1 to 2% copper. Only traces of copper were located in the Bunker Hill Copper claim (Lot 35) cross-cut.

6.4.5 Merrice

The Merrice occurrence is located on claims belonging to BCGold south of the Bonanza King Project. It was first staked in 1902, and 47.2 m of drifting and surface pits were completed by 1908. It was restaked in 1971 and again in 1974. The showing is reported as being along the GMB/Povoas boundary although the mapped location shows it being hosted entirely by granitic rocks 1.5 km west of the Hoocheekoo Fault.

Mineralization consists of disseminated chalcopyrite and bornite in quartz veins cutting metamorphosed volcanics near the contact with the granodiorite. The veins trend east, dip 50° north, and vary from 0.3 to 1.4 m wide. Surface samples collected on the property assayed from 0.28% copper for average samples to 0.92% copper for high grade ore samples. Both types of samples returned trace amounts of gold and silver.

6.4.6 Crossing

The Crossing occurrence is located on Little Salmon Carmacks Settlement Lands, 5 km to the southeast of the Bonanza King boundary. Mineralization is described as minor copper oxide with trace chalcopyrite for 15m along a bluff of Mt. Nansen volcanics along the Yukon Crossing tote trail. Average visual grade estimate is <0.5% with some higher grade up to 2% Cu. There is an old 3m adit but no records of when it was first staked. It was later staked in 1972 by P. Versluce and optioned in 1973 by B.A. Copper ML which cared out several days prospecting and reconnaissance soil sampling in 1974.

6.4.7 Toot

The Toot occurrence is located on the east side of Merrice Lake on Little Salmon Carmacks Settlement lands. Mineralization is the same style as Carmacks Copper and there are multiple zones. The best one is 50m wide and 250 m long and McFaull (1982) describes a subparallel quartz vein with copper located 900m to the east which places it close to the mapped location of the Hoocheekoo Fault.

Showing	year	Cu (%)	Au (g/t)	Ag (g/t)	Description	comments
Bonanza King lease	1909	3.29	Tr	Tr	mineralized vein in shaft near surface	
Bonanza King lease	1909	4.21	Tr	Tr	Mineralized vein in shaft 3m from surface	
Bonanza King lease	?	1.45	0.69	10.3	Sample over 1.5m width of vein in drift	
Monte Cristo lease	1909	1.0		6.9	Average surface sample of 1.5m vein	Gold value 20 cents
Homestake Lease	1909	0.28		Tr	Average surface sample of 2 m on vein above the drift	Gold value \$1.00
Homestake Lease	1909	0.92		44.6	Average sample from large pieces fo higher grade area from different surface exposures	Gold value \$1.00
Bonanza King lease	1917	5.26	4.4	66.9	5.9 tonne ore shipment sent to Granby smelter	
LED claims	2008	1.74	0.399	1.46	Composite rock grab sample from an old pit	
Merrice	?	0.28	Tr	Tr	Average sample of surface material	
Merrice	?	0.92	Tr	Tr	High grade surface material	

Table 4-4: Table of selected results from occurrences.

7 Deposit Types

7.1 (Deposit type) Exploration Model

Since their discovery, the Minto and Carmacks deposit has been classified as a metamorphosed or digested redbed copper deposit metamorphosed volcanogenic massive sulphide deposit, deformed copper-gold porphyry, magnetite skarn, iron oxide copper gold and a shear-hosted deep porphyry. Regardless of the label,

there is a consensus that the deposits formed at crustal levels deeper than 20 km, within the ductile deformation zone, that there is a strong structural control on mineralization and that the deposit is a variant of the porphyry model.

Nelson et al, 2013 describe Minto and Carmacks copper as probably representing the deeper levels of the BC porphyries or an IOCG system. Recent thesis work by Nikolett Kovacs on Carmacks Copper assigns the deposit to the same deepseated BC alkalic porphyry model, although complicated and enriched by ingestion of a previously mineralized protolith at high temperatures (Kovacs et al., 2016).

Hood's thesis on Minto (Hood, 2012) stays with a deep porphyry model, but he believes that deformation of the intrusion as it was emplaced is the cause of the foliated host rocks. Deformation caused grain size reduction and left space for deposition of hydrothermal mineralization. The increase in biotite caused continued deformation of the shear zones and remobilization of sulphides.

Mineralization on Bonanza King is narrow quartz veins/lenses with bornite and chalcopyrite at the contact between GMB and Povoas. There is a minor amount of copper along foliation planes in granite near the contact and particles of free gold have been reported. The veins trend northwest and dip steeply east. The mineralization may have been formed at a shallower depth than the metamorphosed porphyries at the deposits, but has been subjected to similar structural controls and favours lithological contacts.





8 2020 Program

8.1 Overview



Figure 8-1: 2020 Work areas on the Bonanza King Project.

Between July 25 and 31, 2020 TruePoint Exploration carried a work program on the Bonanza King Project. The work was done in conjunction with a program on the neighbouring Stu Copper Project. The work was carried out by True Point Exploration and contractors and funded by Granite Creek Copper with assistance from YMEP. The program consisted of prospecting, mapping, soil and rock sampling and clearing helicopter pads. A total of 15 rock samples and 22 soil samples were collected. The program took 7 days of field work and 45 person days. A Bell Jet Ranger 206 helicopter was used to access work areas. The average number of people in camp was 7 and the cost was \$52,393.44 based on YMEP rate guidelines. Figure 8-1 shows the areas worked on.

Originally a longer program was planned, lasting up to 3 weeks and including 600 soil samples along contour and ridgelines. However, following an aerial survey of the site it was determined that traversing and sampling would be slow and difficult because the vegetation was thick, and openings limited. To assist with access, helipads were cut at strategic locations and plans were changed daily to accommodate ground conditions. Additionally, 2020 was a wet year which made work more difficult and reduced flight visibility, requiring crews to be returned to camp early to avoid leaving them out in the field.

8.2 Mapping, Prospecting and Sampling

Work was concentrated along the contact between granodiorite of the Minto Batholith and the Povoas rocks. The first site visited was the Bonanza King adit on privately owned leases in order to become familiar with and sample mineralized rocks.

8.2.1 Bonanza King Adit

A series of six samples were collected from the Bonanza King adit spanning from the hanging wall across the vein to 1.5m into the footwall. From the adit, prospecting and mapping continued northwest along the contact and to the southeast where it was possible to traverse and find outcrop. Outside of samples collected at the adit no significant results were recovered. The samples are listed in the table below and full results are in Appendix B. See figure 8-3.

Sample ID	Location	Description	Cu ppm	Ag ppm	Au ppb	Mo ppm	W ppm
1810676	footwall	feldspar phyric mafic. 1.3-1.5m away from vein. Contains zones of more strongly foliated augite phyric mafic.	193	Trace	Trace	Trace	5
1810677	footwall	feldspar phyric mafic. 0.65- 1.3m away from vein. Contains zones of more strongly foliated augite phyric mafic.	547	0.8	11.9	Trace	4
1810678	footwall	feldspar phyric mafic. 0.65- 1.3m away from vein. Contains zones of more strongly foliated augite phyric mafic.	302	Trace	21.1	Trace	Trace

Bonanza King Project February 1, 2021

Sample ID	Location	Description	Cu ppm	Ag ppm	Au ppb	Mo ppm	W ppm
1810679	footwall	Adjacent to vein - feldspar phyric mafic. 0-0.65m from vein. Feldspar phenos. Contains zones of more strongly foliated augite phyric mafic.	4567	3.1	34.4	3	Trace
1610680	Vein	Mineralized quartz vein. Oriented 128/78 S. Vein is weakly potassic with Cu oxide mineralization parallel to foliation. Abundant azurite and malachite and veinlets of coarse grained bornite and chalcocite(?).	3.973	47.3	2484.4	147	>200
1810681	Hanging wall	Vein hanging wall - feldspar phyric mafic with mineralized quartz stringers.	1.291	13.2	549.9	131	>200



Figure 8-2: Map of 2020 results in the Bonanza Creek adit area. See property geology map for rock type legend.

8.2.2 Southern End

A day was spent prospecting off the southern end of the Bonanza King claim block. Two rock samples were collected. Originally, this area was a staking target, but thick forest blocked efficient access and this activity has been put off until more work has been done to improve access. A sample with anomalous copper (255 ppm) was collected from a diorite sample on the GMB side of the contact.



8-3 Results from the southern end of Bonanza King.

8.2.3 Northern End

A day was spent soil sampling at the northern end of the Bonanza King claim block along the boundary with the DEL claims. Twenty-two soil samples were collected at 100m intervals along 3 lines spaced 200m apart. Thick forest and wet weather made working in this area difficult and slow. Results from the sampling were promising with 11 of the samples running >30 ppm Cu which is indicative of mineralization on the Carmacks property



8-4 Results from the northern Bonanza King Project. The 2020 sampling is in shades of purple and sampled are labelled with copper values in ppm.

9 Interpretation and Conclusions

The Minto Copper Belt has been proven productive, with one operating copper mine and one deposit advancing towards production. Over the last decade, exploration of Triassic-Jurassic porphyry targets in the northern Cordillera has taken significant new directions. The discovery of deep, structurally controlled porphyry roots at the New Afton mine near Kamloops and at Red Chris in northern B.C. and expansion of reserves at Minto, has created new mining opportunities and a shift in focus from broad, low-grade, shallow targets to much higher grade, albeit less accessible resources (Nelson et al, 2013).

The surprisingly high tungsten values (>200 ppm) in 2 mineralized samples from the Bonanza King adit suggest that the mineral identified as chalcocite in the vein may have been wolframite.

The lack of outcrop along the granodiorite-volcanic contact increases the importance of soils as a consistent layer of information over the property. The difficulty of traversing in the area will require cutlines for soil sampling or collecting samples in more open areas. As further soil sampling programs are carried out on the property, more information should be collected until a consistent methodology and nomenclature is developed.

There is a mixed glacial history on the property due to its position at the at the limit of Cordilleran Pleistocene glaciation. Valley glaciers extended along major valleys and tributaries depositing glacial drift on lower slopes and valley bottoms, while steep slopes and uplands remained unglaciated but are covered with a blanket of colluvium. Grus (decomposed bedrock that looks like sand or silt) is common and an indicator of nearby or buried outcrop. A surficial geology map should be produced prior to sampling to assist in consistently identifying the material being sampled. Soil profile pits in the vicinity of soil sampling will help in refining the surficial geology map and increase understanding of what is being sampled and which horizon to sample.

A systematic QAQC program should be carried out on soil samples consisting of blanks, field and sample duplicates and if feasible, an unmineralized, multi-element standard reference material.

10 Exploration Recommendations

The Bonanza King Project merits continued work, although a new approach is needed to work in the dense forest and steep terrain. Aerial surveying using drones and helicopters is one approach that will pinpoint accessible areas and allow for aerial prospecting. A program of extensive line cutting is another approach and overgrown roads and trails leading towards the Bonanza King project from the Carmacks Property should be investigated and brushed out to facilitate access.

An exploration program of access management combined with aerial surveying is recommended. If possible, the open area along the GMB-Povoas contact to the south should be staked.

11 References

Atlas Explorations Limited, 1970. Correspondence relating to Property Examination of the I. Goulter Crown grants. ARMCO 012202.

Mitchell, D.C., 1971. Report on Geochemical Soil and Magnetometer Surveys. Report for Hudson's Bay Oil and Gas Company Limited. Assessment report #061111

Casselman, S.G., 2008. 2008 Assessment Report for the Carmacks Copper Project. Report for Western Copper corporation. Assessment report #095060. Pp.42

Casselman, S. and Arseneau, G., 2011. 2011 Qualifying report for the Carmacks Copper Deposit, Yukon Territory. Report for Copper North Mining Corp. and Carmacks Mining Corp. SEDAR.

Coughlan, L.L. and Joy, R.J., 1981. 1981 geological and geochemical report on the NOON claim group, Hoocheekoo Creek area. Report for United Keno Hill Mines Ltd. Assessment report #090929.

Deklerk, R. and Traynor, S. (compilers), 2004. "Yukon Minfile 2004 – a database of mineral occurrences", Yukon Geological Survey (website and CD-ROM).

Gordey, S. P. and Makepeace, A.J., 2000. "Yukon Digital Geology", Geological Survey of Canada, Open File D3826, and Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 1999-1(D).

Hood, S. et al., 2009. High-grade hydrothermal copper-gold mineralization in foliated granitoids at the Minto mine, central Yukon. *In*: Yukon Exploration and Geology 2008, L.H. Weston et al. (eds), Yukon Geological Survey, p. 137-146.

Huss, C. et al. 2012. Carmacks Copper Project, NI 43-101 technical report, feasibility study, Vol. 1, Yukon Territory, Canada. Report for Copper North. SEDAR.

James, D. and Davidson, G.S., 2018. National Instrument 43-101 Technical Report on the Stu Copper Property, near Carmacks, Yukon, Canada. Report for Granite Creek Copper. SEDAR.

JDS Energy & Mining Inc., 2016. NI 43-101 Preliminary Economic Assessment technical Report on the Carmacks project, Yukon, Canada. Prepared for Copper North.

Joy, R.J., 1981. 1981 geological and geochemical report on the MOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Ltd. Assessment report #090930.

Kovacs et al., 2017. New geological insights into the Carmacks Copper Cu-Au-Ag deposit, central Yukon. *In*: Yukon Exploration and Geology 2016, K.E. MacFarlane and L.H. Weston (eds.), Yukon Geological Survey, p.117-140.

Leblanc, E. and Joy, R.J., 1980. 1980 geological and geochemical report on the MOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Limited. Assessment report #090771.

McFaull, J. A., 1982. 1982 geological and Geochemical Report on the Toot Claim Group. Report for united keno Hill Mines Ltd. Assessment report #091085.

McNaughton, K. 1994. Carmacks Copper Project 1994 Exploration Program. Report for Western Copper Holdings Limited. YMIP 94-029.

Milton, Jack, 2017. 2016 Technical Assessment Report on the Geology and geophysics of the Carmacks copper Project, Yukon. Report for Copper North Mining Corp. YMEP 2016-097.

Mitchell, D.C., 1971. Report on geochemical soil and magnetometer surveys. Report for Hudson's Bay Oil and Gas Company Limited. Assessment report #061111.

Mortensen, J. K. and Tafti, R., 2002. "Nature and origin of copper-gold mineralization at the Minto and Williams Creek deposits, west-central Yukon: Preliminary investigations", in Yukon Exploration and Geology 2002, D. S. Emond and L. L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 165-174.

Newman. D. and Joy, R.J., 1980. 1980 geological and geochemical report on the NOON claim group, Hoocheekoo Creek area, Whitehorse mining district. Report for United Keno Hill Mines Limited. Assessment report #090775.

Newton, G., 2008. 2008 geochemical report on the BUTTER property. Report for BCGold Corporation. Assessment report #095209.

Olsen, D.P., 1974. Geophysical and geochemical report on the Bay claims, Hoocheekoo Creek area, Yukon Territory. Report for Hudson's Bay Oil and Gas Company Limited. Assessment report #061099.

Ouellette, D. and Pollries, B., 2011. Geological and Geochemical Surveying on the DEL Claim Block. Report for Northern tiger Resources Inc. Assessment report #095349.

Pearson, W. N. and Clark, A. H., 1979. "The Minto copper deposit, Yukon Territory: A metamorphosed orebody in the Yukon Crystalline Terrane". Economic Geology, vol. 74, p.1577-1599.

Pollries, B. and Ouellette, D., 2013. Target Evaluation Report for the DEL Claims. Report for Noerthern tiger Resources Inc. YMIP report 2012-016.

Schulze, Carl., 2008a. Geological and Geochemical Surveying on the LED Claim Bloc. For Northern Tiger Resources Inc. Assessment Report #095062.

Schulze, Carl., 2008b. Geological and Geochemical Surveying on the DEL Claim Block. For Northern Tiger Resources Inc. Assessment Report #095064.

Smith, C.A.S., Meikle, J.C., and Roots, C.F. (editors), 2004. Ecoregions of the Yukon Territory: Biophysical properties of Yukon landscapes; Agriculture and Agri-Food Canada, PARC Technical Bulletin No. 04-01, Summerland, British Columbia, 313 p.

Shives, R.B.K, et al., 2002. Airborne multisensor geophysical survey, Minto, Yukon. GSC Open File 4333, EGSD 2002-20D.

SRK Consulting, 2008. Technical Report Minto Mine, Yukon. Report for Minto Explorations Ltd. SEDAR.

Tafti, R. and Mortensen, J. K. 2003. "Early Jurassic porphyry (?) copper (-gold) deposits at Minto and Williams Creek, Carmacks Copper Belt, western Yukon", in Yukon Exploration and Geology 2003, Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 289-303.

Tempelman-Kluit, D. J., 1984. "Geology of the Laberge and Carmacks map sheets", Geological Survey of Canada Open File 1101.

Watson, K.W. and Joy, R.J., 1977. "1977 Geological, geochemical and geophysical report on the STU claim group, Hoocheekoo Creek area, Whitehorse Mining District", Assessment report # 090248.

Websites

Capstone Mining Corp. www.capstonemining.com

APPENDIX A: Date, Signature and Certificate of Author

I, Deborah Ann Rachel James of 11-3194 Gibbins Road, Duncan, British Columbia, do hereby certify the following:

- I am a Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of B.C.
- I graduated from the University of British Columbia with a B.Sc. degree in Geological Sciences in 1988
- I have been employed continuously in the mineral exploration and mining industry since 2006 and have been practising my profession as a geologist continuously since 2006.
- I have worked in the Yukon Territory in 1988-1989 and from 2006-present. During that time I have worked in the field on the Mt. Skukum Au-Ag vein deposit near Carcross, YT, the Nucleus and Revenue Cu-Au Porphyry deposits at the Freegold Mountain Property in the Dawson Range, Ni-Cu-PGE occurrences in the Kluane Ranges in southwest YT, Ag-Pb veins in the Keno Hill District, and the Carmacks deposit. I have participated in technical fieldtrips at the Minto mine and the Carmacks Copper Property led by company geologists.
- I supervised the Bonanza King Project work described herein;
- I wrote a Technical Report for Granite Creek Copper on the Stu Copper Property (November 15, 2018).

Deborah James

APPENDIX B: Sample Descriptions and Analysis

See digital files

APPENDIX C: Statement of Expenditures

See YMEP expense claim and digital invoices