NI 43-101 TECHNICAL REPORT

on the

Chuchi South Project

Central British Columbia

Latitude: 55° 13’ 3”**N, Longitude:** 124° 31’ 14” **W**

UTM Zone 10: 403256 E, 6120055 N, NAD83

for

Cirrus Gold Corp.

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by

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Effective Date: July 7, 2021

Frontispiece

Photo looking east in a deep linear ravine through the Coho Zone on the Chuchi South Property. The ravine may follow a fault or fracture zone that has been excavated by glaciation.

Photo by Ron Bilquist, 2018

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1. Summary

The Chuchi South Property (the “Chuchi South Property” or the “Property”) is located about 100 kilometers (‘km”) north-northwest of Fort St James in central British Columbia. It constitutes 13 contiguous mineral claims with details shown in Table 1 and amounting to 3118.7 hectares in the British Columbia Mineral Title Online cell system which lists Ronald John Bilquist as the sole (100%) owner of each. The center of the Property, located at a cell claim corner, is at latitude: 55° 13’ 3”N, Longitude 124° 31’ 14” W, or in UTM Zone 10 at 403256 E, 6120055 N, in the NAD83 coordinate reference system. The most southerly of the Chuchi South claims is near the north shore of Chuchi Lake, the easternmost of the Nation Lakes. A large block of claims adjoin to the Property on the north and west sides. The area is a remote, but readily accessible region that has a strong logging industry and large scale mining at Mt Milligan only 32 kilometers to the southeast. The terrane on the Property and its vicinity is moderate in relief and underlain by tills and glacial gravels suitable for mining infrastructure development. The nearest communities are Fort St James, Vanderhoof, and Prince George.

The Property is the subject of a Property option agreement between Cirrus Gold Corp. (“Cirrus” or the “Optionee”) and Ronald Bilquist (the “Vendors”) dated January 24, 2020 (the “Property Option Agreement”). This technical report is written for the purpose of supporting an Initial Public Offering (“IPO”) by Cirrus.

The Chuchi South Property lies within the prolific Quesnel Terrane, which hosts clusters of alkalic porphyry copper-gold deposits along its 1000 km north - south extent in east central British Columbia. The Property lies within one of these clusters known as the Nation Lakes Porphyry Camp, which included the recently operational Mount Milligan copper-gold alkalic porphyry. At the latitude of the Property the Terrane is about 100 km wide and fault bounded on both sides by major dextral fault system separating it from the Cache Creek Terrane in the west and ancestral North America on the east. The Nation Lake Camp is dominated by a myriad of Late Triassic and Early Jurassic plutons of the composite alkalic Hogem Batholith, which intrude volcanic arc strata of the Upper Triassic Takla Group and the overlying Pliensbachian age Chuchi Lake Succession that underlies the Property. Metamorphic grades are in the prehnite pumpellyite facies with local increases to lower greenschist facies and contact metamorphic hornfelses.

Previous exploration work on the Property dating back to 1967, identified extensive copper soil geochemical anomalies that are developed in tills deposited by east moving ice sheets. Rock outcrops are mainly confined to east-west oriented lineaments that may be faults excavated by the glaciers, and recently incised creek ravines, but many copper and gold showings were located on the Property. Potassic alteration in the monzodiorite intrusions was also identified and associated with chalcopyrite mineralization. The most active period of exploration occurred after the discovery of Mount Milligan in 1987 and included airborne magnetometer surveys over most of the Property and Induced Polarization surveys over the southern half. Diamond drilling in 1991 amounting to 1500 meters in 6 holes which, targeted coincident magnetic and IP chargeability highs as well as copper and gold geochemical anomalies with generally negative results. On the adjacent property to the north similar coincident magnetic and chargeability highs were found associated with copper soil anomalies, which drilling in 1990 and 1991 confirmed as a sizeable porphyry copper-gold system. Little exploration work has been attempted on the Property since the early 1990s.

Whole rock analyses from rocks collected by Cirrus have confirmed a shoshonitic composition for both the augite-plagioclase phyric volcanic of the Chuchi Lake Succession and the intrusive “dioritic” plutons of the central part of the Property. Crowded feldspar porphyry

textures were observed in the volcanics, which are a key texture associated with copper-gold porphyries throughout British Columbia.

An extensive zone of chalcopyrite mineralized monzodiorite has been mapped in an area of the north central Property called the Coho Zone. Twenty one rock samples in variably veined and altered monzodiorites have average copper grades of 1.95 wt% with a median value of 1.3 wt% and a range from 0.0309 % to 10.25 %. Gold in the same rocks averages 2.88 g/t with a median for the 21 rocks of 0.3 g/t and a range from 0.006 g/t to 16.15 g/t. Silver grades are also impressive with an average of 15 g/t, median of 20.5 and a range from 0.25 to 66.7 g/t Ag. The average gold grade is skewed by 3 high grades samples with 16.15, 8.72 and 7.57 g/t gold that resides in quartz pyrite-chalcopyrite and galena chalcopyrite veins. High arsenic values above 1 wt% suggest the presence of sulphosalt minerals, which may be an indicator of an epithermal like zone, potentially peripheral to porphyry mineralized systems observed at Mount Milligan. Lead and zinc are also high associated with the arsenian samples. The Coho Zone lies on the flanks of a complex high contrast magnetic high defined in a new airborne magnetic survey commissioned by Cirrus. The Coho Zone also lies within a previously delineated copper soil geochemical anomaly that continues to the west for a 2 kilometres.

A two phase exploration program is recommended. Phase 1 would include a 20 line kilometer IP survey over the Coho Zone coupled with detailed mapping of the Property and recompilation of existing soil geochemistry and geophysics. Lithogeochemistry and petrographic work on thin sections should be done at selected sites to establish the range of lithologic units. A budget of $110,657 is estimated for Phase 1. Contingent on positive results of Phase 1, which would include delineation of high priority IP chargeability anomalies spatially related to the magnetic highs and soil geochemical anomalies, a second phase would be proposed that is diamond drilling intensive. A budget for Phase 2 is estimated at $837,850 to cover the remainder of the Property with IP surveying and to target the coincident anomalies defined in phase 1 with up to 3000 meters of diamond drilling.

2. Introduction

The Chuchi South Property is a mineral claim group in central British Columbia located on maps in Figures 3 and 4. The Property is an early stage exploration, copper-gold alkalic porphyry prospect in the Nation Lakes Porphyry Camp of Nelson and Bellefontaine (1996). The Chuchi South Property is adjacent to the BP-Chuchi deposit, and about 32 km NW of the Mt Milligan Mine, which are classified as alkalic copper-gold porphyries in the Quesnel Terrane shown in Figure 2.

The Chuchi South Property is subject to the Property Option Agreement, dated January 24th, 2020, between Cirrus Gold Corp. ("Cirrus" or the "Optionee") and Ronald Bilquist (the "Vendor), whereby Cirrus can acquire 100% of the interest in to certain mineral claims comprising the Property. The author was retained by Cirrus to prepare a National Instrument 43-101 *Standards of Disclosure for Mineral Projects* and National Instrument Form 43-101 F1 Technical Report ("NI 43-101" and "Form NI 43-101 F1", respectively) compliant Technical Report on the Chuchi South Property (the "Technical Report" or the "Report"). Ronald John Bilquist is the sole owner of the Chuchi South mineral claims northwest of Fort St James, British Columbia in the Quesnel Mining Division. The author is an independent qualified person as defined in Section 1.5 of NI 43-101. This Report has been prepared in the form and content specified in Form NI 43-101 F1.

Figure 1: The author examining showing at the Chuchi South claims September 9, 2020.
Photo by Katarina Bjorkman, Ph.D. geologist, September 9, 2020.

The author has relied on a personal field inspection of the Property and a variety of information sources available in the public domain and from Cirrus's exploration programs in preparation of this Report. Regional geological information was sourced from British Columbia Geological Survey reports (e.g. Nelson and Bellefontaine, 1996) and maps available from government websites (Mapplace.ca), as well as papers published in refereed international journals. Information was also obtained from the web-based British Columbia government

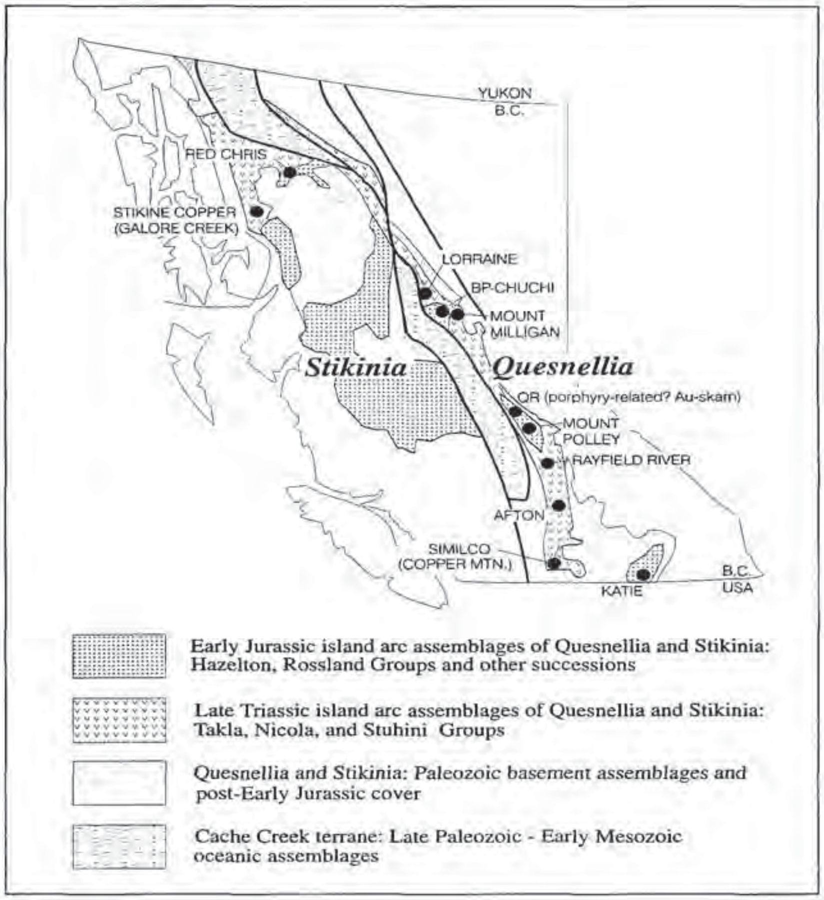


Figure 2: Quesnellia Porphyry Belt The Chuchi South Property is located adjacent to the BP-Chuchi deposit within the main belt of alkalic type copper-gold porphyry deposits in the Quesnel Terrane. It lies between Mt Milligan and Lorraine, both developed porphyry copper-gold deposits.
The map is from Nelson and Bellefontaine (1996) a significant reference on the geology of the district.

website “Mineral Titles Online” for claim information. Historical information was gathered from the assessment reports on file in the British Columbia Assessment Report Information System (ARIS) describing exploration on the Property and on adjacent properties since about 1938.

The author has referred to the work of various geological experts in the preparation of this Report who are authors of geological papers and maps on the region where the Property is situated. While it is not always easy to verify early results or to make representations regarding their accuracy or applicability, based on a review of this work and knowledge of the companies and two of the individuals involved, the author believes this earlier work was carried out to high industry standards of the time. The author has also relied on the work of various other sub-contractors including ALS Global Laboratories for analysis of check samples.

In order to prepare this report, the author personally visited and examined the Chuchi South Property on September 9th, 2020 to investigate the geology of the Property (Fig. 1). The author made personal inspection of the two important Minfile showings (the Coho Zone, and the Rig Breccia) and many outcrops in the vicinity of known mineralization on the Property and in the local area to observe and understand the relevant geology of the area. The author also collected mineralized rock samples from the showings to compare with results from current exploration on behalf of Cirrus. All UTM coordinates referred to in the Report are in the North American Datum of 1983 (“NAD 83”) and in UTM Zone 10. The author believes the information in this Technical Report remains accurate and is unaware of any material change in the scientific and technical information prior to the filing date. The author reserves the right to review public releases by Cirrus that quote this Report and the work of the author.

Table 1: Abbreviations
Measurement Units, Element Abbreviations and Acronyms used in this report.:

Measurement Units:

C	Celsius
cm	centimeter
g/t	g/t
ha	hectares
Hz	Hertz
km	kilometer
kg	kilogram
m	meter
mm	millimeter
Ma	Million years ago
Mt	Million tonnes
ppb	parts per billion
ppm	parts per million
t	tonnes
wt%	weight percent

Element Abbreviations:

Ag	Silver
As	Arsenic
Au	Gold
Cd	Cadmium
Ce	Cerium
Cu	Copper
Eu	Europium
La	Lanthanum
Mo	Molybdenum
Mn	Manganese
Pb	Lead
Sb	Antimony
Yb	Ytterbium
Zn	Zinc

Minerals:

bn	bornite
cc	chalcocite
cpy	chalcopyrite
po	pyrrhotite
py	pyrite
sp	sphalerite

Geological Terms

Fm	Formation
Gp	Group
SW	southwest
NW	northwest

Acronyms:

AAS	Atomic Absorption Spectroscopy
ARIS	British Columbia Assessment Report Index System
BCGSB	B.C. Geological Survey Branch
EM	Electromagnetic
MEMPR	Ministry of Energy Mines and Petroleum Resources
FA	Fire Assay
GIS	Geographic Information System
GPS	Geographic Positioning System
Mag	Magnetometer
NTS	National Topographic System
QA	Quality Assurance
QC	Quality Control
REE	Rare Earth Element
RGS	Regional Geochemistry Survey
TMI	Total Magnetic Intensity
UTM	Universal Transverse Mercator
VLF	Very Low Frequency

3. Reliance on Other Experts

The author is not relying on the opinion of any other experts.

4. Property Description and Location

The Chuchi South Property is located about 185 km NW of Prince George, BC (Fig. 3) and 100 km NNW of Fort St James, British Columbia in the Omineca Mining Division straddling NTS 1:50,000 topographic maps sheets 93N/01 and 02 in UTM Zone 10. It constitutes thirteen (13) mineral claims numbered in Table 1 and amounting to 3118.7 hectares in the British Columbia Mineral Title Online cell system which lists Ronald Bilquist as sole owner of each. The center of the Property, located at a cell claim corner, is at latitude: 55° 13' 3"N, Longitude 124° 31' 14" W, or in UTM Zone 10 coordinates at 403256 E, 6120055 N, in the NAD83 datum. Other large claim blocks adjoin on the north and west boundaries of the Property.

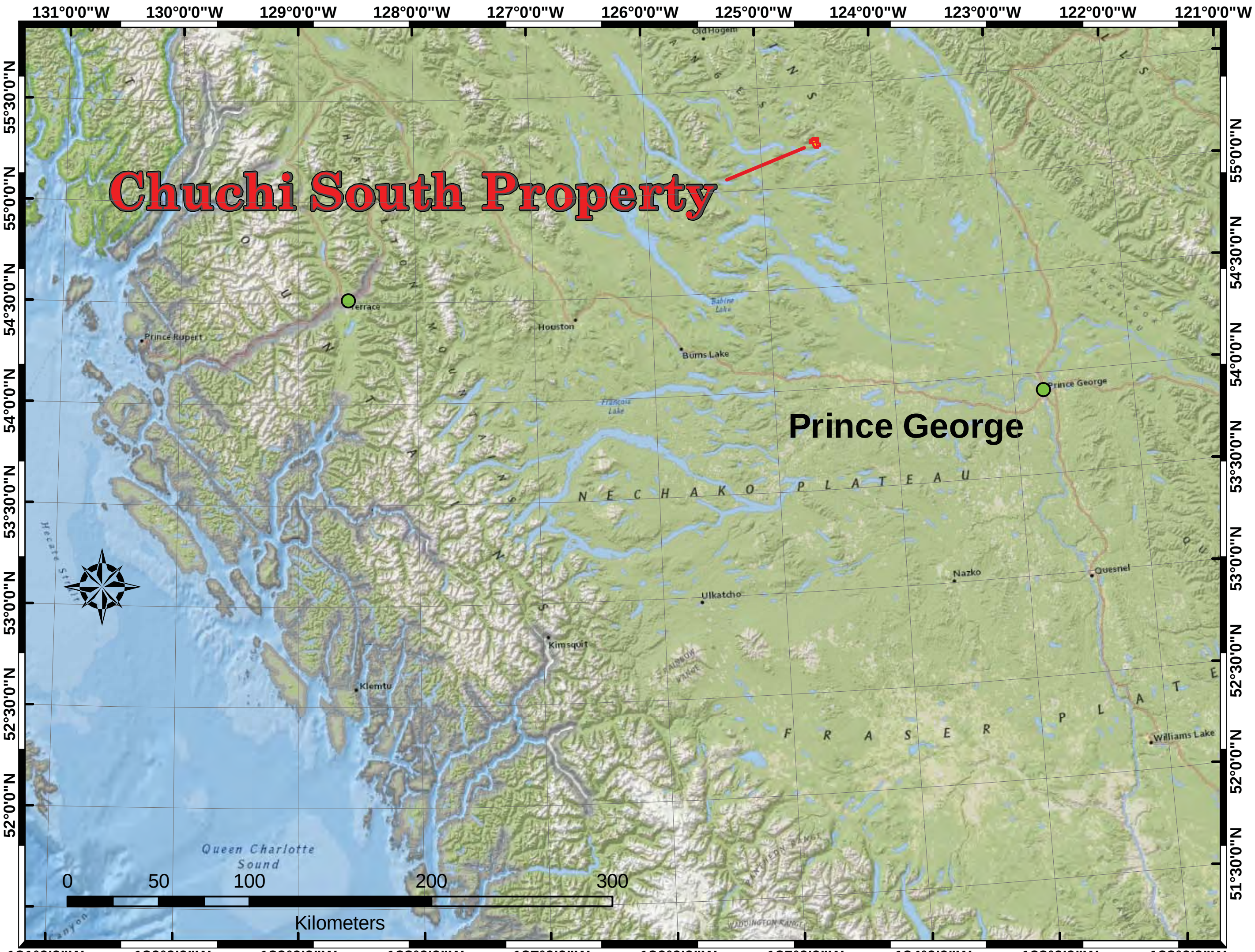


Figure 3: Location of the Chuchi South Claims in north central British Columbia.
Map drawn in ArcGIS by the author using National Geographic Topographic base map and current Mineral Titles files for October 20, 2020.

The claims establish subsurface rights to the owner for minerals (base and precious metals) as outlined in the *Mineral Tenure Act* of British Columbia (the "*Mineral Tenure Act*") Ronald J. Bilquist's South Claims are listed in the British Columbia Mineral Titles On-line system (http://www.mtonline.gov.bc.ca/), the boundaries of which are predetermined by geographically defined cells conforming to a provincial mineral titles grid system. Neither the claims nor the Property boundary have been surveyed or marked on the ground, nor is this required for resolution of Property issues. The claim boundaries are shown on a physiographic

Tenure No.	Claim Name	Issue Date	Good to Date	Hectares	FMC No.	OWNER
1063139	CHUCHI 9	2019-09-16	2022-07-15	276.7	102389	BILQUIST, RONALD JOHN
605066	CHUCHI 1	2009-05-28	2022-07-15	406.1	102389	BILQUIST, RONALD JOHN
605545	CHUCHI 3	2009-05-28	2022-07-15	129.2	102389	BILQUIST, RONALD JOHN
605546	CHUCHI 4	2009-05-28	2022-07-15	92.3	102389	BILQUIST, RONALD JOHN
1018115	CHUCHI 7	2013-03-26	2022-07-15	55.4	102389	BILQUIST, RONALD JOHN
1018074	CHUCHI 6	2013-03-26	2022-07-15	147.6	102389	BILQUIST, RONALD JOHN
1070119	CHUCHI 10	2018-08-05	2022-07-15	221.4	102389	BILQUIST, RONALD JOHN
1057288	CHUCHI 8	2017-12-30	2022-07-15	129.1	102389	BILQUIST, RONALD JOHN
605070	CHUCHI 2	2009-05-28	2022-07-15	276.9	102389	BILQUIST, RONALD JOHN
699944	CHUCHI 5	2010-01-15	2022-07-15	276.8	102389	BILQUIST, RONALD JOHN
1048262	SRM 093.028	2016-12-04	2022-07-15	36.9	102389	BILQUIST, RONALD JOHN
1078066	CHUCHI 11	2020-08-17	2021-08-17	240.0	102389	BILQUIST, RONALD JOHN
1078065	CHUCHI 12	2020-08-17	2021-08-17	830.3	102389	BILQUIST, RONALD JOHN
			Total Area	**3118.7**		

Table 2: Bilquist tenures in the Chuchi South claim group as of October 15, 2020.

map in Figure 4.

Retention of the Property requires filing Statements of Work with the British Columbia Mineral Titles System reflecting expenditures on qualifying exploration and development work. On the basis of the *Mineral Tenure Act* the required work must amount to a minimum of $5/ha/year for the first 2 years the claims are held, and then $10/ha/year for the next 2 years, $15/ha/year for the next 2 years and finally $20/ha/year for each subsequent year. Technical reports (assessment reports) must be filed and accepted after review by the British Columbia Ministry of Mines describing the applicable work with cost statements justifying the exploration expenditures.

For advanced exploration work, Notice of Work (NOWs) applications will be necessary to permit future mechanically assisted exploration (diamond drilling, trenching, etc.) and certain types of geophysical surveys (IP). The Nation Lakes are within the Arctic watershed in an area of prolific salmon, Arctic char, and trout fishing lakes and subject to considerable environmental interest and regulatory oversight. However, the Property is moderate in relief, mantled in stable and permeable till and gravels and is not traversed by any known fish-bearing streams or sensitive wildlife habitats, all of which mitigate any risk of environmental damage from exploration activities. In addition the Property has an existing dense system of industrial roads built for logging and previous mineral exploration programs that will allow reasonable access for exploration drilling, which would facilitate approval of required permits requested from the British Columbia mines regulatory authorities, by minimization of new disturbances. The author is unaware of other liabilities, environmental or otherwise, on the Chuchi South Claims.

The Property is underlain by Crown land with no known adverse claims to mineral rights, including by aboriginal groups. However, aboriginal rights and land title are complex and evolving areas of liability for resource projects in British Columbia and proponents of projects are advised to consult with and maintain relations with local indigenous groups. Logging rights are maintained under Timber Farm Licenses (TFLs) and roads are considered part of the provincial Forest Service Road network and thus not subject to closure by the TFL owner, except locally during logging operations for safety reasons. Future access via the road system may be affected by eventual cessation of logging activity in the area and maintenance of the roads. However, the main forest service road, which lies 20 kilometers to the east of the claims is a main access route from Fort St James north to Germansen Landing. This road also connects with a mainline road from MacKenzie farther to the east.

There are no known environmental liabilities, significant factors and risks that affect access, title, or the right or ability to perform work on the Property.

The current and previous mineral tenures were all staked after the expiry of previous claims, and, thus, there are no inherited royalty or Net Smelter Returns attached to the Property except as provided in the Property Option Agreement between Cirrus and the Vendors, which is further discussed below.

4.1 Property Option Agreement

Optionor hereby grants to Optionee the sole and exclusive right and Option to acquire a one hundred percent (100%) interest in the Property free and clear of any Encumbrance for and in consideration of Optionee agreeing to incur at least $350,000 in Expenditures; pay $510,000 in cash; issue 1,500,000 Shares; and reimburse the Optionor for $20,000 in Expenditures, all in accordance with the terms of this Agreement.

In order to maintain the Option in good standing and to earn a one hundred percent (100%) interest in the Property, Optionee must:

(a) within five (5) calendar days of the Effective Date, pay to or at the direction of the optionor a sum of $5,000;

(b) within 30 calendar days of the Effective Date:

(i) pay to the Optionor a sum of $20,000, representing repayment of recently incurred Expenditures on the Property; and

(ii) issue to or at the direction of the Optionor 150,000 Shares;

(c) on or before the first anniversary of the Effective Date:

(i) pay to or at the direction of the Optionor $25,000;

(ii) issue to or at the direction of the Optionor 150,000 Shares; and

(iii) incur Expenditures of not less than $100,000; and

(d) on or before the second anniversary of the Effective Date:

(i) pay to or at the direction of the Optionor $30,000;

(ii) issue to or at the direction of the Optionor 200,000 Shares; and

(iii) incur additional Expenditures of not less than $100,000; and

(e) on or before the third anniversary of the Effective Date:

(i) pay to or at the direction of the Optionor $50,000;

(ii) issue to or at the direction of the Optionor 1,000,000 Shares; and

(iii) incur additional Expenditures of not less than $150,000; and

(f) on or before the fourth anniversary of the Effective Date, pay to or at the direction of the Optionor $50,000; and

(g) on or before the fifth anniversary of the Effective Date, pay to or at the direction of the Optionor $350,000.

5. Accessibility, Climate, Local Resources, Infrastructure & Physiography

5.1 Accessibility

The Chuchi South Property is located in north central British Columbia (Fig. 3) about 185 km northwest of Prince George. The region is active in industrial forestry and mining as well as tourism activities, hunting and fishing. The Property is accessible by all-weather logging roads from Fort St James and MacKenzie. Large lakes of the Nation Lake chain are accessible by float planes and by ski equipped aircraft in winter.

5.2 Climate and Vegetation

The climate is typical of the central areas of the British Columbia Intermontane region with an extreme range of temperatures from summer highs in the 30 Cs to winter lows near -30 C. Precipitation in all seasons in the intermontane is moderated by mountain ranges on both sides, the Rockies to the east and the Coastal Ranges far to the west.

The Property is subject to variably heavy snowfall from December through April, and the length of the surface exploration season is typically 8 months between April and November in the lower elevations and approximately 7 months on the ridge crest. Road based drilling operations can proceed year round where adequate water sources are available.

The Property and surrounding land are all below tree line and forests include balsam fir, spruce, Jack pine, larch, poplar and alder (Fig. 5). As much of the area was clear-cut logged in the 1980s, original tree species are potentially restricted to small enclaves between disturbed areas, swamps, and water courses. White spruce and lodgepole pine are the dominant species on the well drained flats in the central Property. In the creek valleys some old growth black spruce, balsam poplar and trembling aspen are common. In the clear-cut areas, and along old roads, vegetation is dominated by pioneer shrub species like mountain alder and willow, which form dense thickets between the old resource roads.

5.3 Local Resources

The main local resources are logging infrastructure in the form of active, well maintained logging roads, and aggregate sources from the extensive till and glaciofluvial deposits of the area. Water is available in many large lakes in the Nation Lakes as well as many smaller lakes and streams.

5.4 Infrastructure

There is no existing infrastructure on the Property apart from the logging road system.

5.5 Physiography and Surficial Geology

The Property is located north of Chuchi Lake, the easternmost of the 60 kilometer long Nation Lakes chain (Fig. 4). The area is within the Omineca Mountains a broad elevated region of mainly rounded hills with moderate relief and elevations ranging from about 900 to locally over 1800 meters above sea level in isolated massifs. The Omineca Mountains form a plateau about 110 kilometers wide between two dominant NNW trending major valley systems that are defined by major crustal scale dextral faults; the Pinchi Fault on the west and the Manson-Ingenika Fault on the east. The Nation Lakes originate in the valley systems aligned along the Pinchi Fault and flow eastward draining through the Nation River towards the east and into the

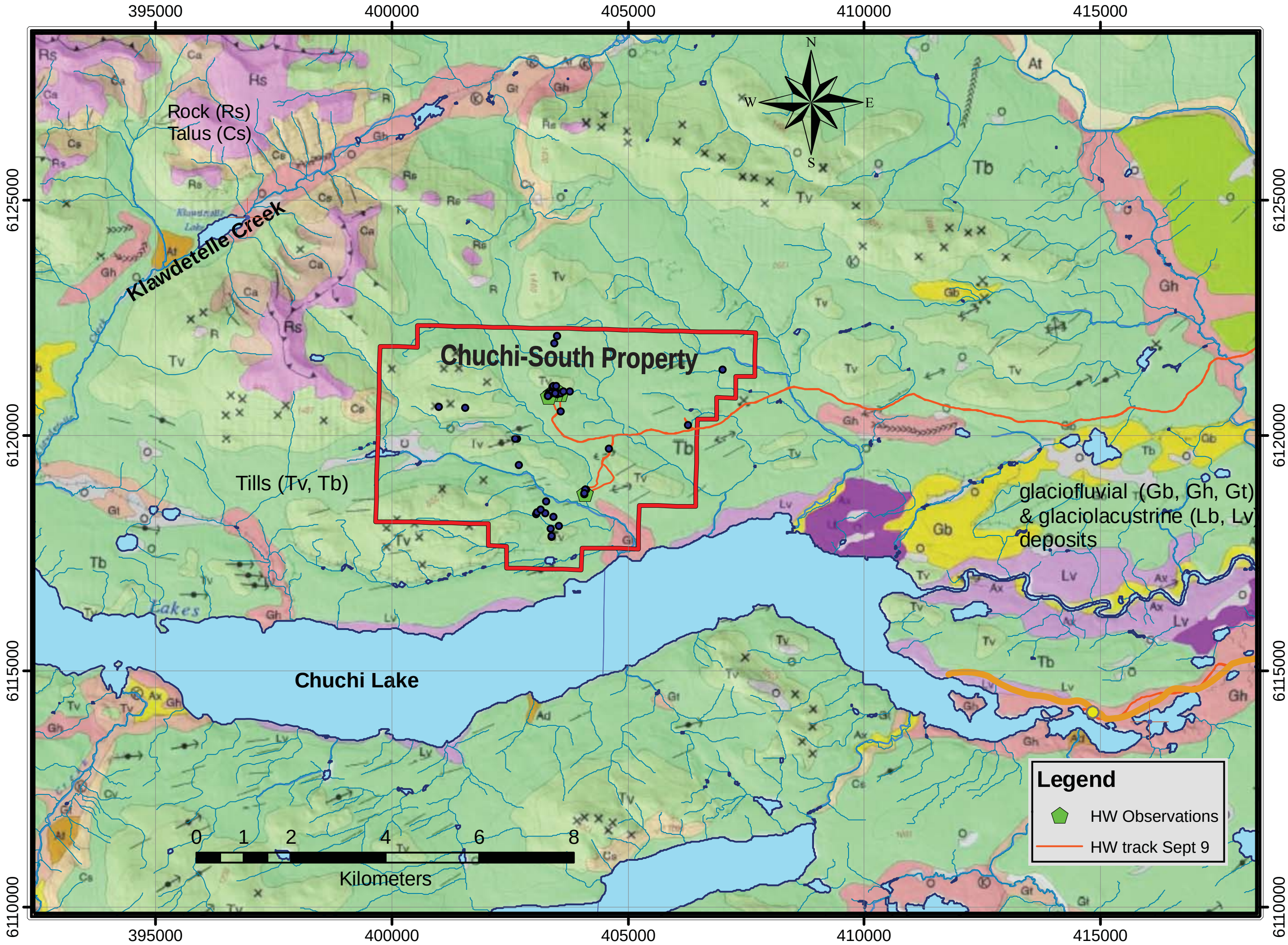


Figure 4: Surficial Geology and Physiography of the Chuchi Lake Area.
Geology from GSC Open File 2842 (Plouffe, 1994). Chuchi Lake covers a major east flowing outwash channel filled by glaciofluvial gravels (Gb blankets, Gh ice contact deposits (e.g. kames), Gt terraces) and glaciolacustrine sands and clays (Lb blankets, Lv veneers), which appear at the outflow of the present lake. Tills (Tb blankets > a few meters thick, Tv veneers < a few m) cover much of the area except the rugged high ground NW of the Property. Ice flow indicators, flutings, drumlins, and striae show a consistent easterly ice flow. Meltwater channels and deposits (eskers) also indicate easterly flow. Geology is draped on a shaded relief map to show topography. Modified from Plouffe in ArcGIS by the author November, 2020.

Manson and Ingenika River system which flows north into the Arctic Watershed. The Property lies about midway between the major fault-defined valleys.

Continental glaciation has had a major effect on the terrane both in reshaping the bedrock surface and depositing tills and moraines. The last continental ice sheet advanced from the Coast Mountains in a general east-northeast direction towards the Rocky Mountains and overrode all of the hills in the region. When the ice sheet ablated, cirque glaciers became active in the higher peaks, which are above 1200 meters in current elevation. These included peaks in the higher ground with 10 kilometers north of the Property. The lakes resulted from the scouring direction of the continental ice flow and subsequently became meltwater channels filled by glacial deposits that formed as the ice sheet ablated and large glaciofluvial systems dumped gravels in the valley that is now occupied by the lakes. As the volumes of ice melt

Figure 5: View looking south towards Chuchi Lake from the Property
The main part of the Property is low relief terrane. Logging has cut large areas as long ago as the 1970s. Some areas remain in old growth spruce and fir, but are commonly in a decrepit state full of deadfall.

water declined, the glaciofluvial deposits were incised by rivers no longer carrying gravels. The down-cutting resulted in terraces evident in parts of the Chuchi Lake area flanking the original glacial outwash valleys. Farther east major glaciolacustrine deposits formed under glacial lakes that were dammed by stagnant ice and bedrock promontories (Fig. 4). The Mt Milligan Mine was discovered under glaciolacustrine deposits by geophysical and geochemical methods.

Within the Property overburden varies in thickness from a few meters to tens of meters and comprises basal tills, glaciofluvial gravels, and subglacial features such as drumlins. Several deep ravines incise not only the tills, but also bedrock and these may represent abandoned glacial-lake drainage channels. Elevations range from 850 meters near Chuchi Lake to 1000 meters in the north of the Property.

5.6 Suitability for Mining

The Property area is generally only moderately rugged with local relief of less than 300 meters across its full extent. Roads are readily constructed in the variable thickness of glacial tills and gravels and there are many low slope areas suitable for mining infrastructure. Till blankets and veneers (Fig. 4) may provide resources of clean fill for construction of mining facilities such as tailings dams and eventually covers.

The Fort St James to Germanson Landing road is about 15 kilometers east of the Property and the Indata FSR runs west from it to the Property.

The electrical power grid currently extends to the Mt Milligan mine site 32 kilometers to the southeast.

6. History

6.1 Sources

The history of mineral exploration and development on and in the vicinity of the Property dates back to the 1960s and is recorded in several publicly available sources including: 1. Assessment reports on exploration and development work archived in the British Columbia Assessment Report Information System ("ARIS") and indicated on Mapplace, a Geographic Information System ("GIS") based reference to mineral exploration reports dating back to the 1960s and providing links to pdf copies of the reports; 2. Minfile records also shown on Mapplace and available as GIS files with links for descriptions of mineral showings and occurrences of significance as determined by assessment report reviewers and British Columbia Geological Survey Branch geologists and 3. Geological Survey reports and Bulletins.

The current Minfile showings in the vicinity of the Property are shown on Figure 6. Names of the showings have changed over time and on the map the current nomenclature is used. In the text below various additional historical names are mentioned in their historical context.

Previous mineral tenures do not correspond to the present Property boundaries and the provincial claims system changed in 2004 from ground based, variably-oriented two post and perimeter staked claims to the present geographically predefined cell claims that facilitates online staking. Consequently, many historical descriptions in assessment reports are either for small fractions of the present area or for overlapping and adjacent areas. Where possible maps of the old claims are included with descriptions of the exploration work for all of the former properties in the location of the current Property tenures, as well as for adjacent properties, which are disclosed in Item 15: Adjacent Properties.

The Chuchi South Property lies in the Nation Lakes alkalic porphyry camp, which includes the large Mt Milligan deposit discovered in 1987. The Mt Milligan Mine is about 32 km SE of the Chuchi South Property and the BP-Chuchi deposit is immediately to the north. Historical property names have commonly included the use of the Chuchi and this is a source of potential confusion, which the author has attempted to mitigate, of which the reader should be aware. Many historical reports of a comprehensive nature pertain to adjacent former properties variously utilizing the name "Chuchi" (e.g. BP-Chuchi, Chuchi-A, Chuchi-B, Chuchi Lake) and the reader is cautioned to distinguish these from the present Chuchi South Property.

One of the most authoritative accounts of the geology and exploration and development of the region is the British Columbia Geological Survey Bulletin 99 by Nelson and Bellefontaine published in 1996 after the discovery of Mt Milligan by geologist Mark Rebagliati. The Mt Milligan discovery prompted renewed porphyry copper exploration in the Nation Lakes camp including the present Property and the areas immediately to the north. Rebagliati was involved in exploration of the BP- Chuchi Property in the early 80s to the north of the Chuchi South Property that is the subject of this report, and his geological reports on the area including a Summary Report for High Ridge Resources in 2005 (Rebagliati, 2005) are both thorough and insightful into the salient geological features of alkalic porphyry copper deposits like Mt Milligan.

The most significant exploration programs within the current Chuchi-South Property, other than those by owner Ron Bilquist between 2010 and 2019, date from 1968 to 2003 and are documented in assessment reports by Dirom (1968), Tegart (1972), Campbell (1988, 1989), Barrie et al. (1991), and Campbell (1995 and 2003). The most authoritative and comprehensive accounts are by Barrie et al. (1991) for the BP Resources option of the Skook claims, corresponding to the southeastern part of the Property, and the simultaneous Barrie et al. (1991) BP report on the adjacent Klawli claims optioned by BP from Noranda Exploration. These occurred in the period after the discovery of the Mount Milligan deposit which had demonstrated the importance of combined airborne magnetics, Induced Polarization, soil geochemistry in overburden covered areas. The adjacent Chuchi property owned by BP, had been intensively explored and drilled during the previous three years culminating in the definition of a copper-gold alkalic porphyry resource (Wong, 1991; Rebagliati, 2005)

The Mount Milligan discovery spurred a renewed phase of exploration of the Nation Lakes Camp that had not been seen since the 1960s when porphyry copper deposits were first recognized, as well as inspiring geological surveys of the region and scientific studies of effective geochemical exploration techniques in overburden covered terrane and the relationship between alkalic magmatism and copper-gold type porphyry deposits. The exploration history of the Chuchi South Property began during the early phase of world wide porphyry copper exploration spearheaded mainly by large mining companies including Noranda and Rio Algom who could afford to conduct regional reconnaissance program and stake vast areas. Small, junior mining companies followed.

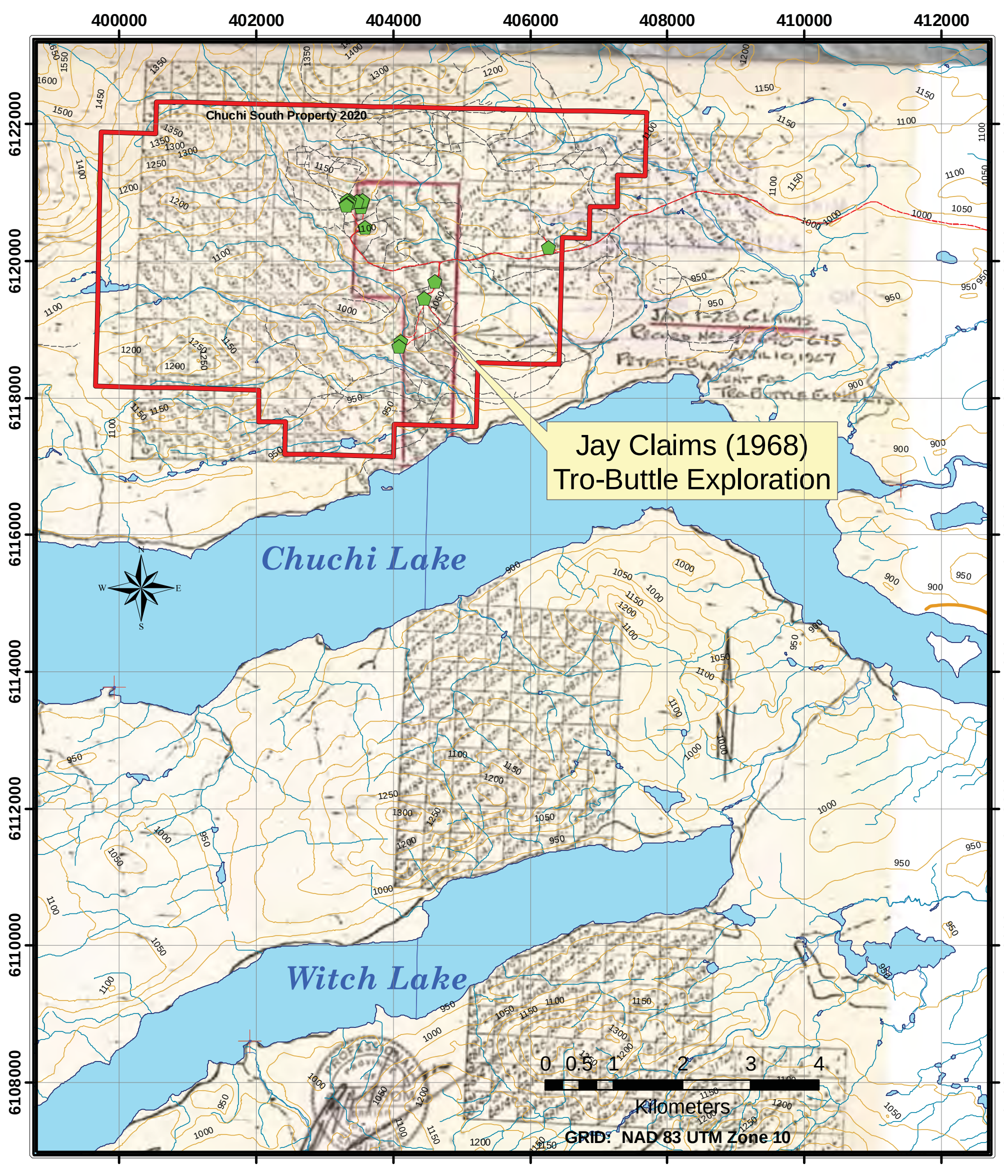


Figure 6: Claim Map of the Chuchi and Witch Lakes area in 1968
The area of the Jay claims was near the center of the Chuchi South Property and is highlighted in the matrix of old claims on the map. A large area of claims was also staked in the Witch Lake area. The author's traverse track is shown in red and observation points in green pentagons. The claim map is georeferenced from Dirom (1968).

6.2 Previous Exploration Programs

6.2.1 Tro-Buttle Exploration Jay Claims

One of the first assessment reports on the Property concerns the Jay claims on which Tro-Buttle exploration conducted a soil geochemical survey in 1967 (Dirom, 1968). At the time large claim blocks had been staked north and south of Chuchi Lake and south of Witch Lake by Serem to the NW, Noranda and others. The Jay claims are shown on Figure 6 relative to the present Property boundaries.

The soil geochemical survey analysed Cu, Mo and Zn only. Copper and Zn were analysed by Atomic Absorption Spectroscopy, which had a 1 ppm detection limit. Threshold values were determined by cumulative frequency logarithmic plots and judged to be 150 ppm for copper with 48 out of the 392 samples classified as anomalous and 180 ppm for zinc with 20 samples classified as anomalous. Molybdenum was measured by a colorimetric method involving a stannous chloride ammonium thiocyanate extraction, but all samples were below 6 ppm, with only a dozen above 3 ppm and considered by Dirom (1968) to be trivial.

On Figure 7 the author has highlighted copper values above 100 ppm and 150 ppm. Two distinct areas are highlighted as copper anomalies by the values above 150 ppm: One is near the Coho Zone and the other south of the Rig Breccia. No distinct pattern is revealed by values above 100 ppm Cu.

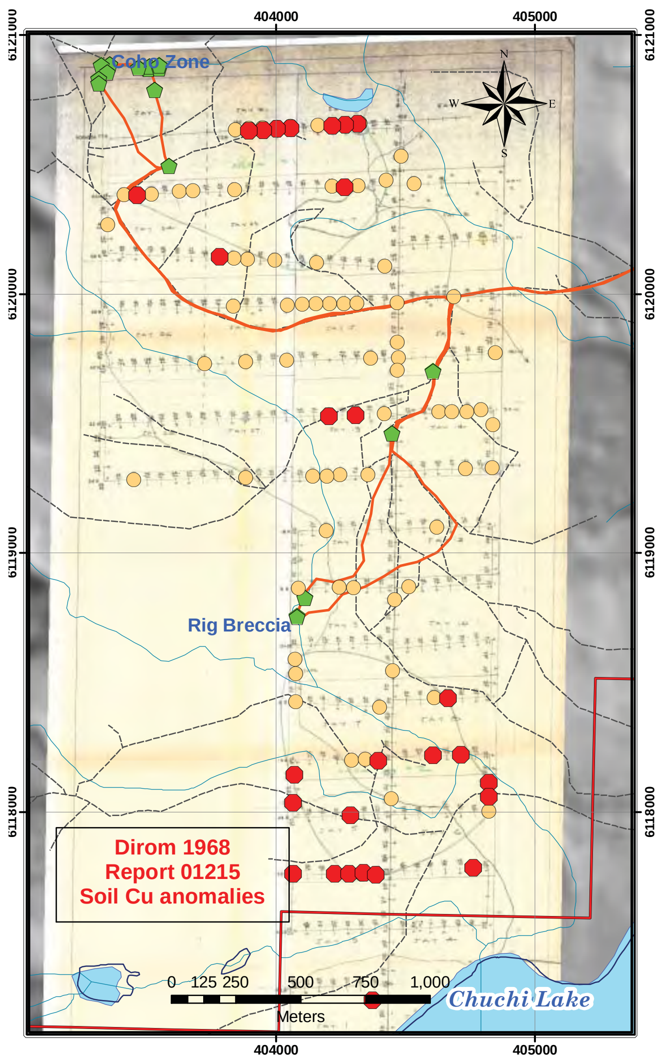


Figure 7: Copper soils anomalies in 1967 grid in SE part of Property
Soils samples with copper in above 100 ppm are highlighted in tan circles; above 150 ppm in red. Original map labels read top to bottom, Zn. Cu. Mo. Some high Zn occurs with the copper anomalies, but Mo is below 6 ppm in all analyses.
The SE border of the Property are shown in red line adjacent to the north shore of Chuchi Lake. The Jay Group claim block is covered by the grid and the claims shown in Figure 6.
The author's traverse track and observation stations are shown to the Coho Zone and the Rig Breccia.
Map drawn in ArcGIS 9.3 by the author November 2020.

6.2.2 Serem Limitee: S.R.M. Claims

NW of the Jay claims of Tro-Buttle (Fig. 6), Serem Ltee held the S.R.M. claims and in 1971 completed geological mapping, geochemical soil sampling, and a ground magnetometer survey on grid lines. The surveys reported in Tegart (1972)were instigated by prospecting finds of chalcopyrite in volcanic rocks. The results of the soil geochemical survey, shown in Figure 8, revealed a sinuous anomaly parallel to the strike of volcanic strata in the NW of the Chuchi South Property and other scattered anomalies in the central part. Only Cu, Zn, and Mo were analysed by methods similar to those employed by Dirom (1968) using AAS. Threshold values for copper of 111 ppm over syenite and 100 ppm over volcanics were calculated graphically. The author has highlighted values of copper symbolized for over 100 ppm and 150 ppm in Figure 8. A coincident molybdenum anomaly was observed in the sinuous copper anomaly with a threshold for Mo calculated at 47 ppm.

Magnetometer results showed little direct correlation with the geochemical anomalies, but magnetic highs appeared over ultrabasic rocks and diorites containing disseminated pyrrhotite. The geochemical anomalies lie downslope of the magnetic highs and below outcrops

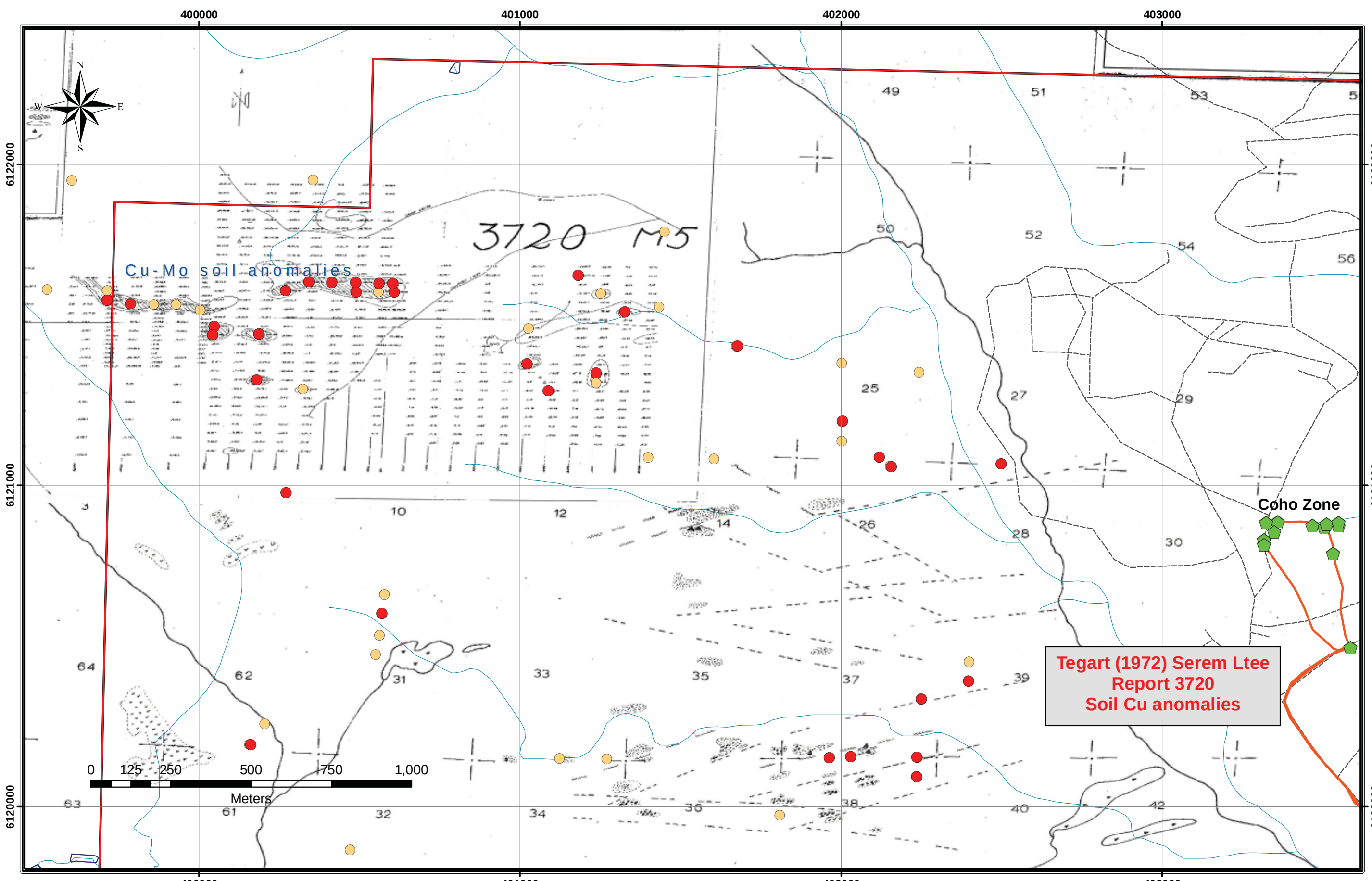


Figure 8: SRM Claim group Copper anomalies 1972
Georeferenced map of geochemical sampling grid in the northwestern part of the Chuchi Property. the boundary of which is shown in Red, is from Tegart (1972), assessment report number 3720 in the BC ARIS. Copper anomalies have been selected by the author as above 100 ppm in tan and above 150 ppm in red. Hand written annotations on the original map at the plotted sampling sites read Cu, Zn, Mo in ppm. Gold was not analysed. The author's September 9 track and stations at the Coho Zone are marked at the right of the figure. Drawn in ArcGIS 9.3 by the author November 2020.

below outcrops of tremolite-actinolite altered ultrabasics. Geological mapping showed that the claims straddle the contact between a syenite body to the north and volcanics to the south. Faults evident as lineaments on airphotos and breccia zones in ravines on the ground were assumed to break the volcanics into blocks forming roof pendants in the syenite. The syenite is described by Tegart (1972; also possibly after the Armstrong, 1949 GSC Memoir 252) as being zoned inwards from a dioritic composition to monzonite and syenite in the core. The diorite has a mesocratic hypidiomorphic granular texture consisting of 50% plagioclase, 20% orthoclase and 30% biotite, augite and hornblende with up to 4% apatite and 4% magnetite. The pluton becomes more leucocratic towards the core with increased orthoclase content, but also alteration of augite to actinolite and development of secondary chlorite and biotite. Syenite is described in the core having an orange colour and composed entirely of orthoclase and quartz. In the west of the claims the syenite hosts silicious dykes containing unspecified amounts of galena. It was concluded that the highest value prospect from the survey was the coincident Cu-Mo anomaly in the NW corner of the Chuchi South Property.

6.3 Exploration Programs in the 1980s

Following the work of Serem and Tro-Buttle in the 1960s and early 70s little exploration work was completed in the bounds of the Property until the late 1980s after the significant discovery of the Mount Milligan Cu-Au Alkalic porphyry deposit in 1987 and proximity to exploration work 5 km north on the Phil claims by Selco and BP in the mid-1980s. The present area of the Chuchi South Property was at that time mainly divided into two properties; the Skook claims in the southeast and the Klaw claims covering the westerly and northerly parts. The Skook claims were staked in 1987 by Nation River Resources who explored them in 1987 (Campbell, 1990) before optioning them to BP-Resources Ltd in 1991 who explored them by airborne magnetometer (Humphreys, 1991), IP, soil geochemistry, geological mapping and diamond drilling (Barrie et al., 1991).

The Klaw set of claims was called the Chuchi Property and was staked by Noranda Exploration Company Limited in the fall of 1987 and June of 1988 prompted by anomalous stream geochemistry. Initial soil geochemistry over a very large grid area in 1988 showed a large copper anomaly, and smaller scattered gold and copper anomalies (Campbell, 1989), which prompted follow-up geochemistry and ground magnetometers surveys on small grids (Campbell and Bradish, 1990). In the fall of 1989, six short diamond drill holes were cored yielding minor intersections of copper mineralization in one hole (Campbell, 1990). Also that fall Noranda contracted 23 line km of airborne EM and magnetometer surveying over parts of the claims bordering the Skook claim block. The following year BP Resources optioned the Klaw claims and explored them (Barrie et al., 1991) in concert with comprehensive work on the Skook option (Barrie et al., 1991).6.3.1 Skook Property; Nation River Resources: Campbell, 1988, AR 18073

In late 1987 and early 1988 Nation River Resources undertook the first significant work in the Skook claim area since the soil geochemical work reported by Dirom (1968). Figure 9 shows a summary of soil contours from the Dirom (1968), and the new work by Nation River, which outlined a new copper gold anomaly in soils and rocks about 1 km SW of the author's Rig Breccia field stations on the map. The report concluded that mineralization occurs in three zones associated with hypabyssal alkalic intrusions ranging from gabbro to trachyandesite cutting Takla volcanics and sediments near the southern margin of the Hogem batholith. Grab samples returned up to 13.4 ppm gold, 16.6 ppm silver and 2.3% zinc. Chip samples across one metre returned values of up to 4.3 ppm gold and 53 ppm silver (Fig. 9). Ten rock samples have petrographic reports

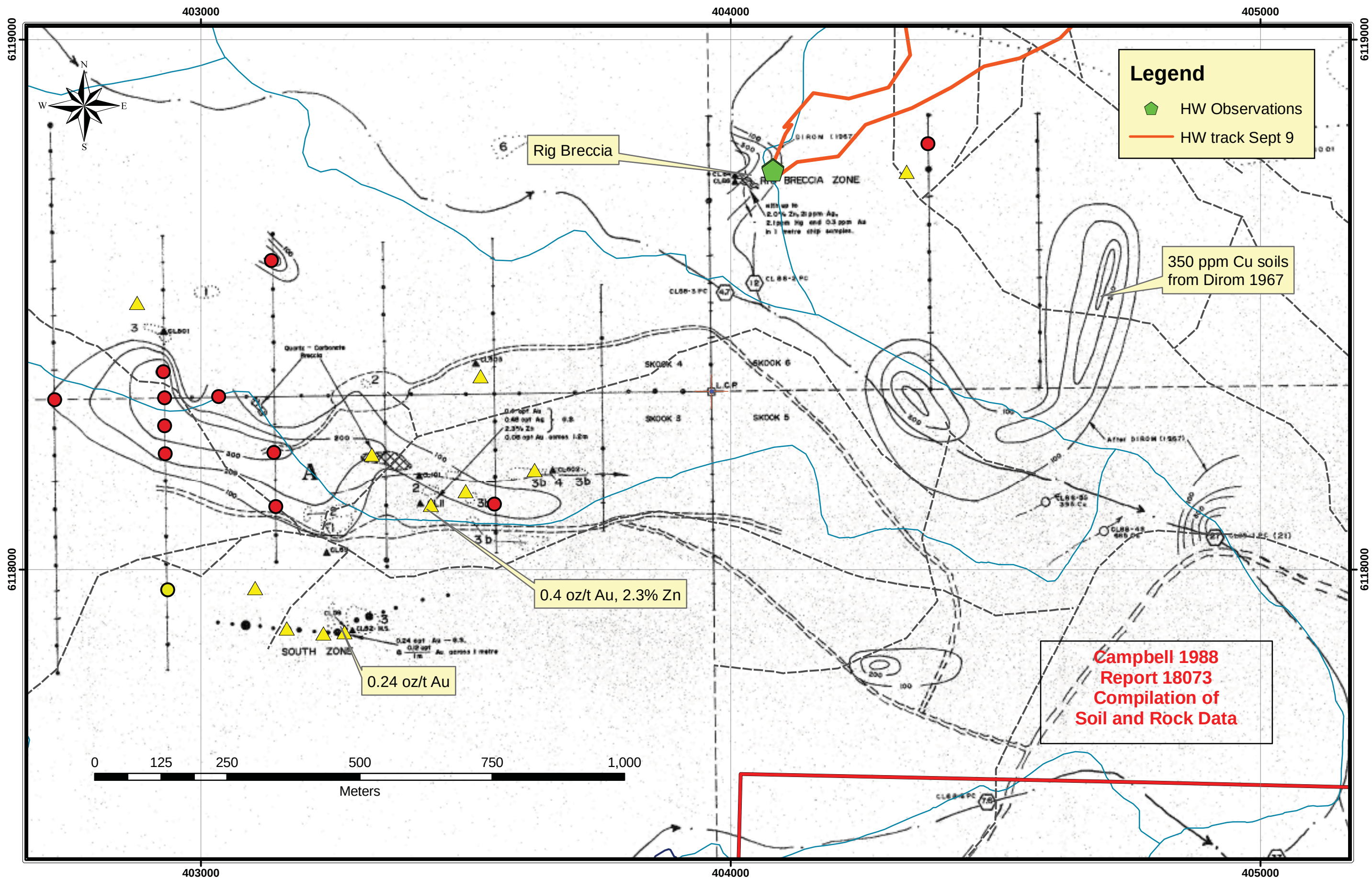


Figure 9: Compilation of Soil and Rock Data in Report 18073
This map georeferenced by the author from Campbell, (1988) shows results of 99 rock analyses at several prospects in the Skook Claims as well as 173 soil sample analyses on the soil grid. The area is in the southern part of the Property: for reference a segment of the boundary is shown in red and the author's traverse track and observation point at the Rig Breccia showing are indicated.
Anomalous Au or Cu in soils are highlighted by red circles (Cu > 500 ppm or Au > 40 ppb) and fall within contours drawn by Campbell (1988). Anomalous rock analyses are indicated by yellow triangles for Cu > 500 ppm or Au > 100 ppb. Contours for anomalous soils from the Dirom (1967) survey is located in the eastern part of the map. Several rock samples are anomalous in gold, copper, silver, arsenic and mercury at the sites indicated. Map drawn by the author by georeferencing Figures 4 a, b, and c from Report 18073 (Campbell, 1988) in ArcGIS, November 2020.

6.3.2 KLAW claims, Noranda

Noranda expanded its claims in the area after the 1987 discovery of Mt Milligan by staking the Klaw claims to cover several reconnaissance stream geochemical anomalies and a roadside geochemical anomaly detected earlier in the year. A mix of reconnaissance and detailed grid soil geochemistry amounting to 789 samples defined copper and gold anomalies in the area of the current Property (Campbell, 1988). The reconnaissance samples were analyzed by AAS for copper, zinc, lead, silver, arsenic and gold, whereas the tighter grid samples were only analysed for copper and gold all at the Noranda Lab in Vancouver. The originally mapped values for gold and copper were digitized from georeferenced map images by T.N. Setterfield for GIS use and symbolized in Figure 10 to show the distribution of anomalous results for both copper and gold. In one area around the present Coho Zone (Fig. 9) anomalous concentrations in soils ranged up to 2200 ppm Cu over an area roughly 2 km in east -west dimension. Anomalous gold values are more sporadic, but range up to 1000 ppm in and possibly peripheral to the copper anomaly.

Geological mapping was very limited in the 1988 survey work owing to a scarcity of outcrop on the property. Outcrops were generally found to be isolated in areas of high relief and major intervening areas are covered by glacial overburden. Rocks observed by Campbell (1989) were mainly andesites and siltstones, which have been intruded by several gabbro and diorite dykes. The andesites are typically pale qreen, massive to weakly porphyritic, moderately silicified and have minor epidote alteration. The siltstones are medium to dark grey, usually hornfelsed**,** mottled and highly fractured and contain up to 2% pyrite. The diorite and gabbro occur as small dykes cutting the strata and probably causing the hornfelsing and alteration. The diorite is vaguely porphyritic, shows minor saussuritic alteration and trace disseminated pyrite and chalcopyrite.

6.3.3 KLAW claims, Noranda

Work by Noranda continued on the Klaw claims in 1989 (Campbell and Bradish 1990) with more soil geochemistry and a grid based magnetometer survey on part of the Klaw property. The soil geochemistry program added 155 samples to the grid and analysed them for copper and gold, but only revealed spot anomalies throughout the new grid areas. Ten rock samples from outcrops found on the grid lines were also analysed but returned low values of copper ranging from 42 to 258 ppm and gold, ranging from 7 samples below detection of 5 ppb

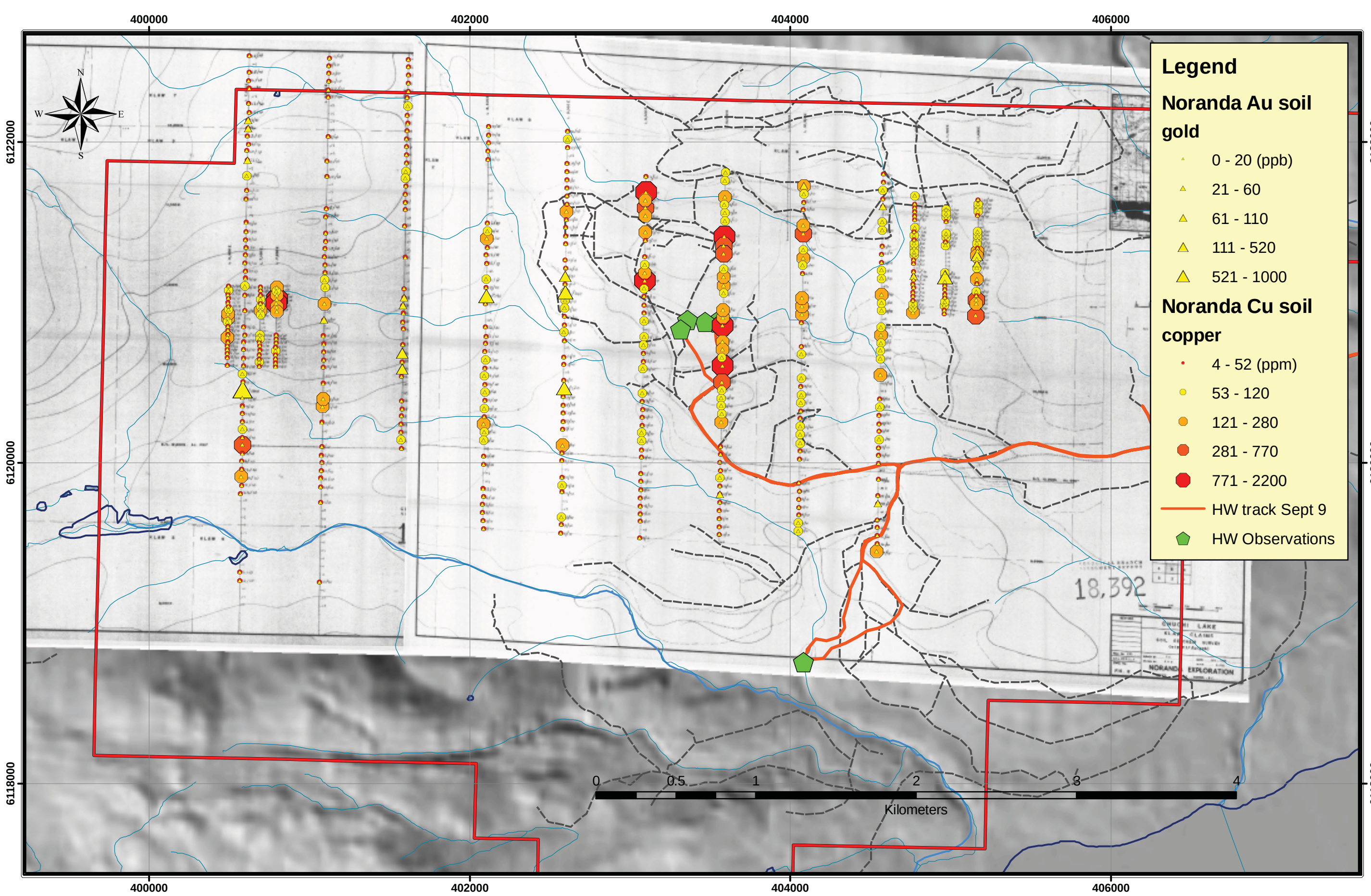


Figure 10: Noranda Soil Grid 1989 on the north half of the Chuchi South Property
Soil grid maps from assessment report 18392 have been georeferenced and values for gold and copper plotted thereon have been digitized as shown in the legend. Soils lines in the main property grid are at 500 m intervals. Copper is represented by graduated hexagons and gold by yellow triangles. The authors inspections track and geology stations are shown for reference as is the outer claim boundary. Map drawn by the author in ArcGIS 9.3 using a shapefile of Cu-Au data compiled from georeferenced maps by T.N. Setterfield, November 2020.

and the remaining 3 up to 170 ppb. Pyrite and pyrrhotite were observed in the rocks. The magnetometer survey was ground based and completed by company personnel on the two small grids over about 12 km of lines. An intensely magnetic feature with an E-W trend was revealed in the north-central part of the Klaw property, but the grid areas were too small to define any large bodies conclusively.

6.3.4 Klaw claims, Noranda

In the fall of 1989 Noranda drill tested some of the geochemical anomalies defined in the 1989 survey work (Campbell, 1990). Six holes with a total length of core of 619.9 meters were drilled near the northern boundary of the Chuchi South Property (Fig. 11). The drilling intersected zones of anomalous copper values but the highest grade section was only 3900 ppm Cu over 3 . 5 metres in hole CH-89-09. The first hole CH-89-01 intersected biotite-hornblende feldspar porphyritic diorite over its 100 meter length and showed variations in pyrite from trace to 10% in short intervals and trace chalcopyrite in the 66.35 to 73.95 m interval and some massive chalcopyrite in a 5 cm vein at 72.85 m. Hole CH89-02 and 03 cut the same rock type with perhaps lesser amounts of pyrite and alteration. The 3 southern drill holes CH89-09 to 11 intersected a mix of feldspar porphyritic diorite and more mafic diorite. The weakly mineralized interval in CH89-09 occurred at 84.2 to 87.7 (3900 ppm Cu) meters across a transitional increase in the mafic content of a dioritic rock and several chalcopyrite occurrences were noted in the mafic diorite. The report refers to the degree to which the drilling results explained the geochemistry and IP anomalies. No IP work prior to the BP option was found by the author, although it may have been only reported internally by Noranda. The report may, instead, have been considering a combined Dighem EM and magnetometer survey flown in the fall of 1989 for Noranda (Campbell, 1990).

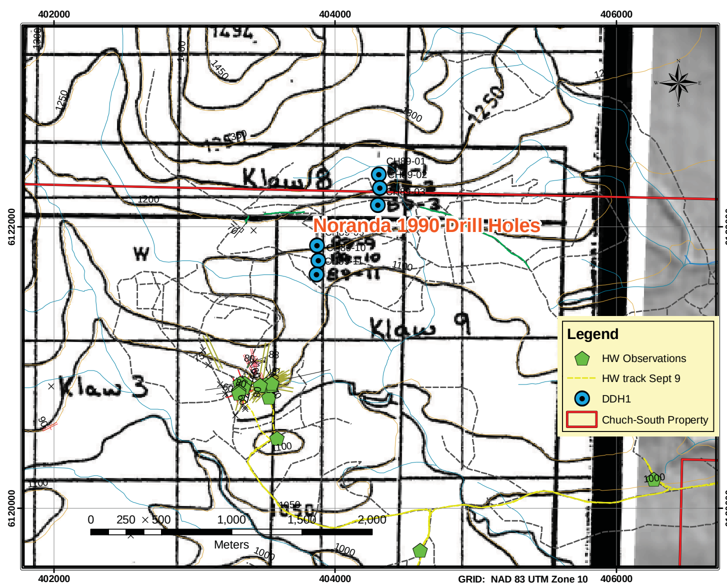


Figure 11: Noranda Drill Hole locations 1990
The northern boundary of the Property and the author's track and observation points are shown for reference. Drawn in ArcGIS 9.3 by the author November 2020.

6.3.5 Klaw claims, Noranda Airborne Geophysics

In the fall of 1989 Noranda flew a Dighem IV combined EM/resistivity/Magnetometer/ VLF survey along 23.2 line km of the Klaw claims including the Klaw 8 and 9 and Norn claims referred to the report as the Chuchi-B group of claims (Campbell, 1990). None of the HEM conductors identified in the survey were definitively interpreted as bedrock features. However, the EM responses associated with one highly magnetic unit merit investigation on the ground. The northern border of the area covered corresponds roughly to the six drill holes completed by Noranda in 1990 (Campbell, 1990), but it is not clear if this survey provided any criteria for selection of drill targets. The TMI image from the airborne magnetometer survey is shown overlaid with soil geochemical results and the locations of drill holes in Figure 12.

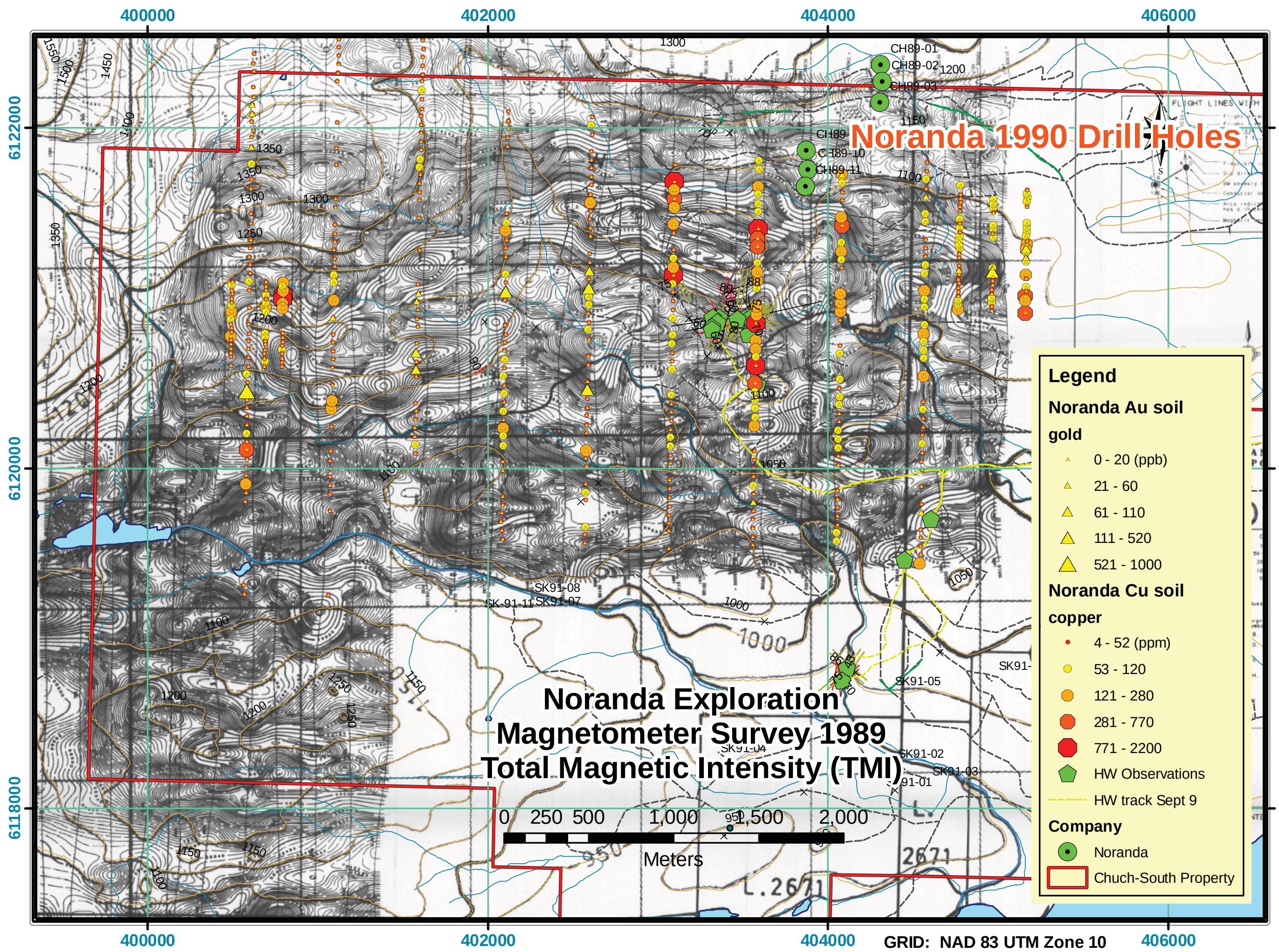


Figure 12: Noranda 1990: Combined Airborne Magnetometer TMI, geochemistry and drill holes. Drawn in ArcGIS 9.3 by the author November 2020.

6.4 The BP Resources Option

The major part of the Property was explored in a comprehensive exploration program in 1991. In late 1990 BP-Resources Ltd optioned the Skook Property from Nation River Resources and the Klaw Property from Noranda. Starting in the fall of 1990 they began a comprehensive exploration program on the Skook and Klaw (aka Chuchi-B claims). An airborne magnetometer survey was flown in late 1990 to cover the entire Skook Property and was reported by Humphreys (1991). Noranda had previously completed an airborne magnetometer survey of the optioned ground in a combined airborne Dighem® -Mag-VLF survey and the magnetometer data was presumably adequate (Campbell, 1990).

Then between March and September, 1991 on the Skook Property, BP carried out 76.8 line-kms of linecutting, 66.5 line kms of IP-resistivity surveying, soil geochemistry, geologic mapping and rock sampling, and 1,243 m of diamond drilling in eleven drill holes (Barnes et al., 1991). BP explored the adjacent Klaw Property in July and August 1991 and completed 24.5 line-kms of linecutting, 20.6 line-kms of IP-resistivity surveying, geologic mapping and rock sampling, and diamond drilling comprising one drill hole of 121.9 m length (Barrie et al., 1991).

Little new work has been conducted on the Property since the BP-Resources program in 1991. Subsequent work by Nation River Resources consisted of an excavator trenching program (Campbell, 1995) and a minor drilling program (Campbell, 2003). High Ridge Resources held claims over the area of the Noranda Klaw claims as an extension of the BP-Chuchi deposit area to the north, but the review by Rebagliati (2005) focused only on the northern area. Nation River Resources presumably forfeited the Skook claims sometime in the next several years before the ground was staked largely by Ron Bilquist in 2010.

The BP Resources Program on the Skook and Klaw Properties is reviewed below.

6.4.1 Skook Claims 1990

As a preliminary to their comprehensive exploration program on the Skook claims in 1991 BP flew (between December 2 and 6, 1990) 210 line kilometers of combined helicopter-borne magnetic, electromagnetic and VLF-EM Survey over the claims contracted to Aerodat Limited of Mississauga, Ontario (Humphreys 1991). The purpose of the survey was to find magnetite - bearing intrusions that may host alkalic porphyry copper-gold deposits. It is not clear how the EM data was utilized in the subsequent exploration since the main characteristics of the Mt Milligan discovery had been coincident mag highs, IP chargeability, and copper-gold soil anomalies. The Skook magnetic survey area has a high dynamic range of about 2000 nanoTeslas (nT) in magnetic amplitude from 57871 to 60166 nT. Three magnetic highs were noted by the interpretation report including a prominent domain over most of the northern portion of the survey (and the Skook claims) and two smaller elliptical bodies on the NW and SW corner of the block.

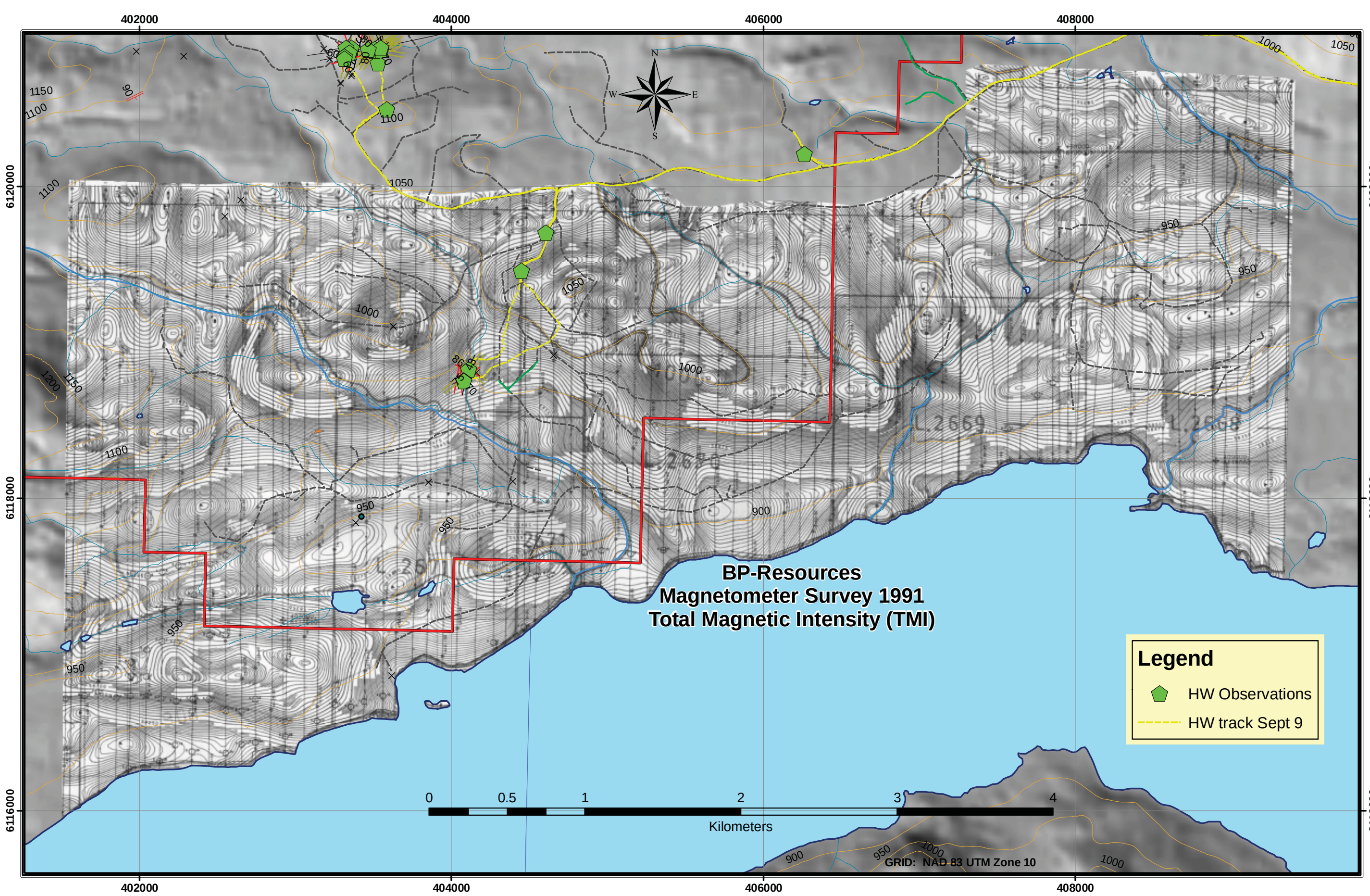


Figure 13: BP-Resources Airborne Magnetometer TMI map of the Skook claims
Drawn in ArcGIS 9.3 by the author November 2020.

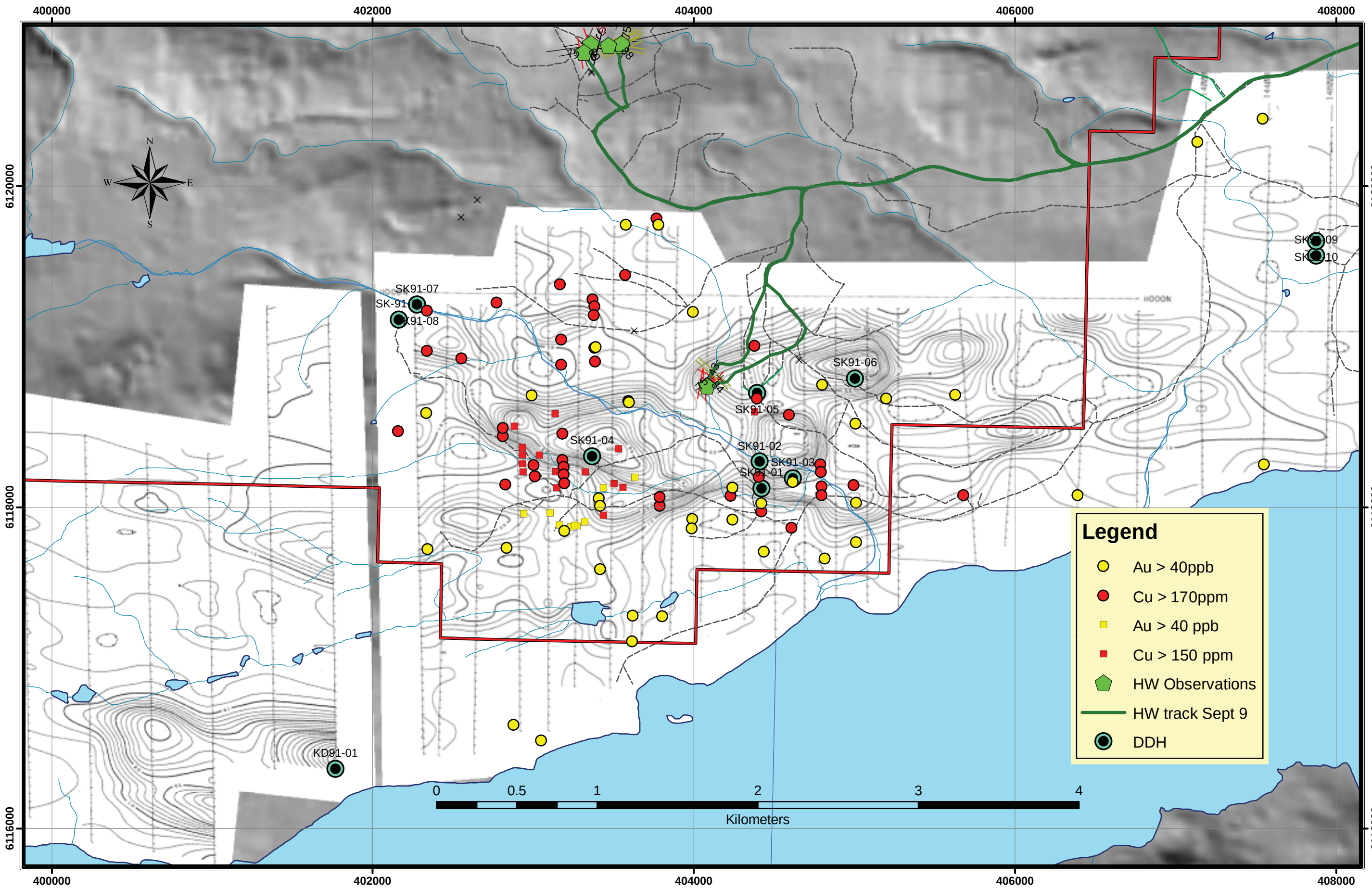


Figure 14: Geophysical and Geochemical Surveys by BP 1991
The map shows B&W contour plots of Induced Polarization surveys by BP on the optioned Skook claims, now the southern part of the Property, and to the west on the KLAW claims, which partly overlap the Property. The densely contoured areas are high chargeability anomalies. Overlaid on the IP map are anomalous Cu (red) and Au (yellow) in soil samples from the IP grid lines (BP survey in circles, and older geochem survey from report 18073 in squares). BP tested several of the coincident geophysical and geochemical anomalies by eleven diamond drill holes indicated by symbol in the legend. The southern claim boundary is shown as well as the author's traverse route and stations for reference. Drawn in ArcGIS 9.3 by the author November 2020.

6.4.2 BP Resources Option of the Skook Claims 1991

In 1991 BP surveyed the entire area of the Skook claims with IP (Fig. 14) and geochemistry to add to the airborne magnetometer survey completed the previous fall (Barnes et al., 1991). IP anomalies were classified by degree of chargeability and coincident resistivity to establish priority for exploration. The highest priority anomalies occur where high chargeability anomalies are coincident with high or moderate resistivity, which may be an indicator of disseminated sulphide in normally resistive igneous rocks. Low priority anomalies were classified by high chargeability anomalies accompanied by low resistivity, or high conductivity, that may be the result of natural conductivity from graphitic content such as in argillites which may also have high disseminated authigenic pyrite and no potential for porphyry type mineralization. Such a low priority anomaly occurs in the SW of the Skook claims and was classified by Barrie et al. (1991) as "formational". High priority IP anomalies combined with spatially coincident magnetic highs and soil copper anomalies might have high potential for porphyry copper mineralization and several occurrences in the BP work became drill targets.

The main exploration effort on the Skook claims by BP covered most of the Skook claim area within the Chuchi South Property with an IP - resistivity survey and soil geochemistry overlapping the previous partial geochemical coverage Nation River to determine drilling targets. Eleven drill holes totalling 1,243 m were completed on coincident magnetic, high priority IP chargeability anomalies and geochemical highs. Except for the magnetic survey, shown in Figure 12, the results of the BP soil geochemistry and the previous Nation River anomalies for Cu and Au are superimposed on the IP chargeability plan maps for the Skook and Klaw survey in Figure 13. Drill targets are also shown in Figure 13. The soil geochemical anomalies highlighted on Figure 13 indicate a broad area about 1 km SW of the Rig Breccia showing. Soil geochemistry yields anomalous (> 100 ppm) copper in the northwest and central portions of the grid. The northwestern anomalous zone corresponds roughly to a west-northwest trending creek in which quartz-chalcopyrite veins have been found. No corresponding source has been found for the central copper anomaly. Gold-in-soil values greater than 17 ppb are erratically distributed in the central-southern portion of the grid, an area predominantly covered by glacial till.

IP-resistivity surveys delineated a large chargeability anomaly, considered to represent a sulphide system, covering most of the northern and central portions of the grid. Diamond drilling tested a number of areas with coincident chargeability, copper-in-soil and magnetic anomalies. Drilling results indicate that much of the large chargeability anomaly is due to pyrite mineralization within Hogem monzonite and hornfelsed sediments. Drill holes SK91-07, 08 and 11 intersected narrow zones of structurally-controlled pyrite-chalcopyrite mineralization within K-feldspar - altered monzonite and sediments. The best intersection was 1.27% Cu and 706 ppb Au over 8 m.

Geological mapping was limited by a paucity of outcrop in the relatively low relief area of the Skook claims. Barrie et al. (1991) reported that the property is underlain by several phases of alkalic plutonic rocks, which comprise the southeastern extremity of the Upper Triassic-Lower Jurassic Hogem Batholith. They were able to observe that the intrusions cut co-magmatic alkalic to intermediate augite and plagioclase-phyric flows and tuffs and related fine-grained sediments of the Takla Group.

They concluded the exploration program on the optioned Skook claims by recommending additional work to test zones where lower order geophysical anomalies coincided with areas where geological evidence suggests that structural preparation and or intrusive centres exist.

6.4.3 BP Resources option of the Klaw Claims 1991

From early July to early August, 1991, BP carried out 24.5 line-kms of linecutting, 20.6 line-kms of IP-resistivity survey, geologic mapping and rock sampling, and diamond drilling comprising one drill hole of 121.9 m length (Barrie et al., 1991).

The property is underlain by a number of phases of alkalic plutonic rocks which comprise the southeastern extremity of the Upper Triassic-Lower Jurassic Hogem Batholith. Similarly to their survey of the Skook claims they observed that the intrusions in the Klaw claims cut co-magmatic alkalic to intermediate augite and plagioclase-phyric flows and tuffs of the Takla Group. Widespread fracture-controlled propylitic alteration, accompanied by pyrite, pyrrhotite and rare chalcopyrite mineralization, is present in Takla Group rocks along the southern contact of the batholith. As well, narrow, structurally controlled, high-grade occurrences of chalcopyrite with locally enhanced gold values, are present within an alkali gabbrodiorite phase of the Hogem in the northeastern portion of the claims.

IP-resistivity surveys in the southern portion of the claims delineated a large chargeability anomaly trending east-west over 1200 m with a north-south width of approximately 500 m. Drill Hole KD91-01, near Chuchi Lake and off the Property tested the eastern periphery of this chargeability anomaly and intersected plagioclase porphyritic monzonite with 1-3 % pyrite and 2-4% pyrrhotite. Barrie et al. (1991) suggest that a relatively high gold background of 10-40 ppb is evident in the drill core.

6.5 Exploration Since the 1991 BP Option

6.5.1 Nation River Resources 1995

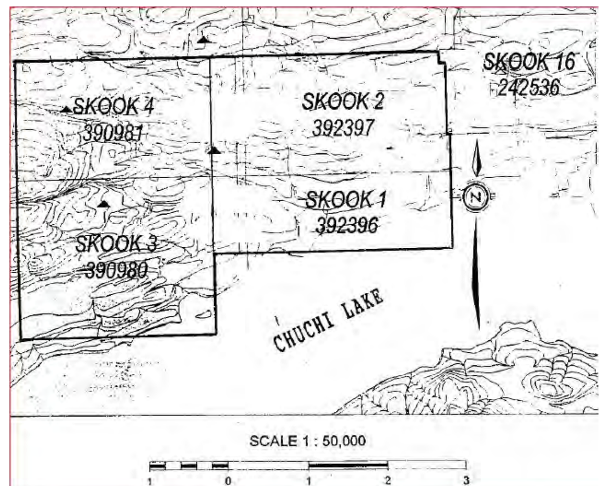


Figure 15: Skook 1-4 Mineral Claims 1995

After the return of the Skook claims (Fig. 15) to Nation River Resources in late 1992 from BP's option, additional exploration work had to be done to maintain the tenures. In 1995 Nation River carried out an excavator trenching program and minor geological mapping designed around geological similarities to the Red Mountain gold deposit near Stewart, BC. The similarities stated in Campbell (1995) included alteration assemblages, topology of plutons intruding volcanics, and silver, zinc, arsenic and cadmium geochemical anomalies in the rock. Part of the similarities were attributed by Campbell (2003) to the WIT showing on the east end of Nation Rivers Skook property, which was a discovery by Noranda drilled in the 1960s for which a small resource (Botel, 1965) had been calculated and which is considered an adjacent property and not within the Chuchi South Property.

The trenching program was located in the central Skook claims about 900 meters SW of the Rig Minfile showing. It opened up 268 linear meters of overburden covered rock along some existing roads, removing 2800 cubic meters of till and rock in the "South" and "CL11" area. Twenty three rock samples were obtained from the trenches of which 3 returned gold assay between 1 and 3 g/t gold and 4 others returned copper assays between 1000 and 2900 ppm Cu. One 0.45 m interval sample returned 3.03% Zn, 1900 ppm Cu, and a 0.25 m interval 852 ppm Cu, 1.69% Pb , 1212 ppm Zn and 1.48 g/t Au.

6.5.2 Nation River Resources Drilling 2002

In late 2002, Nation River Resources drilled about 202 meters of BQ core in two holes on the Skook 1 and 2 claims (Fig. 15) (Campbell, 2003). The work followed up on trenching in 1995 (Campbell, 1995). One hole was drilled to 100 meters in trench CL11 encountered 33 m of siltstone and 60 meters of lapilli tuff, crystal tuff and fine tuff, carbonate alteration and 2 to 5% pyrite. The best assay was only 83 ppb Au over 0.5 m. The other hole extended BP hole SK91-04 by 20 meters and encountered siltstones and tuffs and a maximum gold assay of 376 ppb over 1 meter at a depth of 112 meters. No other significant assays or geological information were obtained.

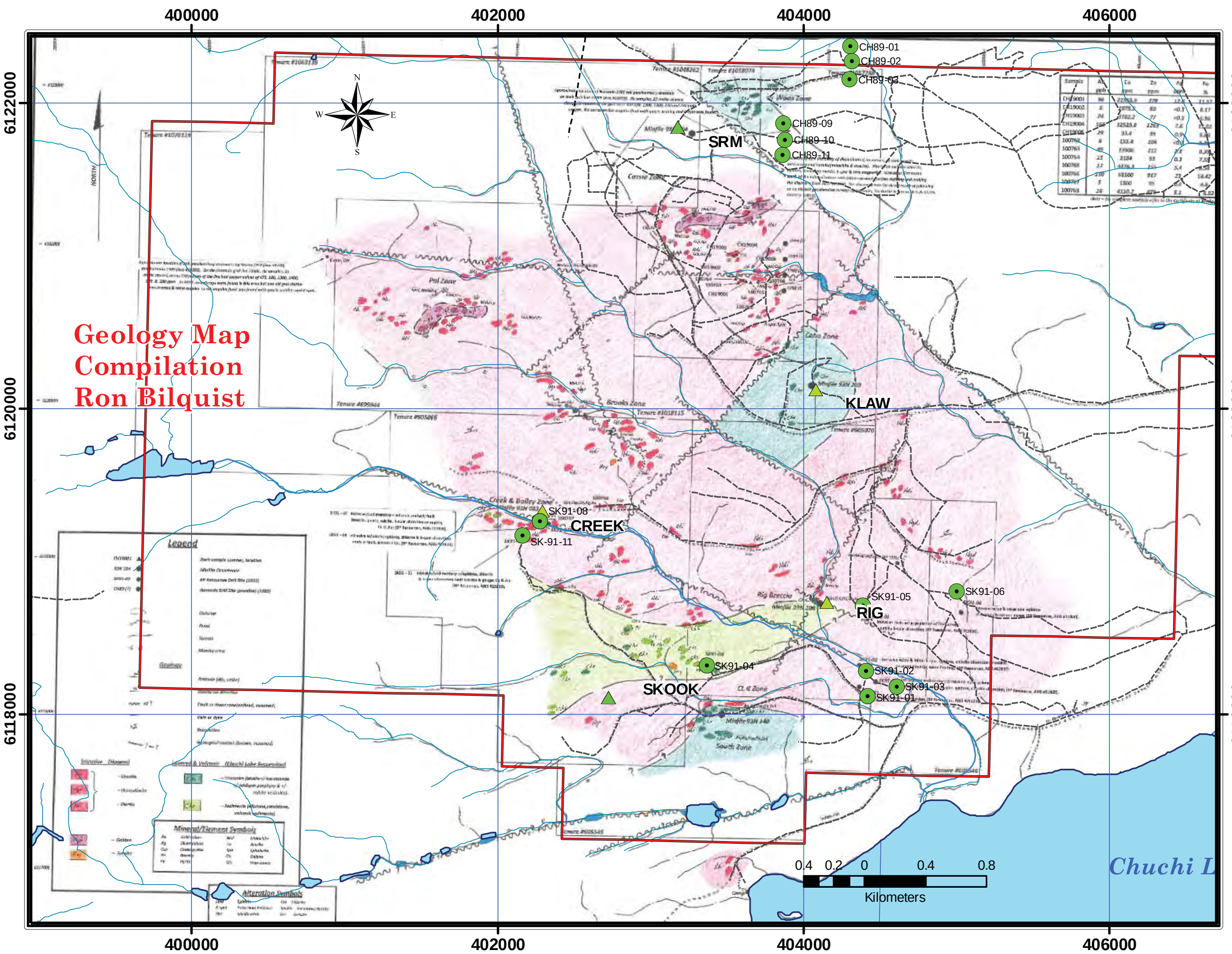


Figure 16: Geological Map of the Chuchi South Property by Ron Bilquist
The map represents the compilation of mapping projects by Bilquist between 2010 and 2019 presented in a series of annual assessment reports (Bilquist, 2010 - 2019).
Diamond drill locations from Noranda and BP Programs are shown as green circle-dots for reference.
Accumulated geochemical and geophysical data, reviewed above is not shown for clarity. Bilquist's map was georeferenced in ArcGIS. Figure drawn by the author in ArcGIS 9.3 December, 2020.

6.5.3 Bilquist Property Assessment Work

In 2008, prospector Ron Bilquist started staking the present Property and began a series of annual prospecting and mapping programs (Bilquist, 2010, 2011, 2012, 2013, 2014, 2015, 2017, 2018, and 2019) in the area eventually expanding the claims to the present configuration. His working geological map is shown in Figure 16.

There are 8 assessment reports filed by Bilquist in the ARIS system between 2010 and 2020: numbers 31649, 32584, 33403, 34770, 35417, 36951, 37713, and 38713. They progressively document different sectors of the property and employ rock sampling and assaying, K-feldspar staining of cut slabs, thin section descriptions and geological mapping. Evidence of the work from the 1991 BP program was found including drill core, but access throughout the area was impeded by regrowth in clear cut areas and especially along branch roads which had grown up in alders.

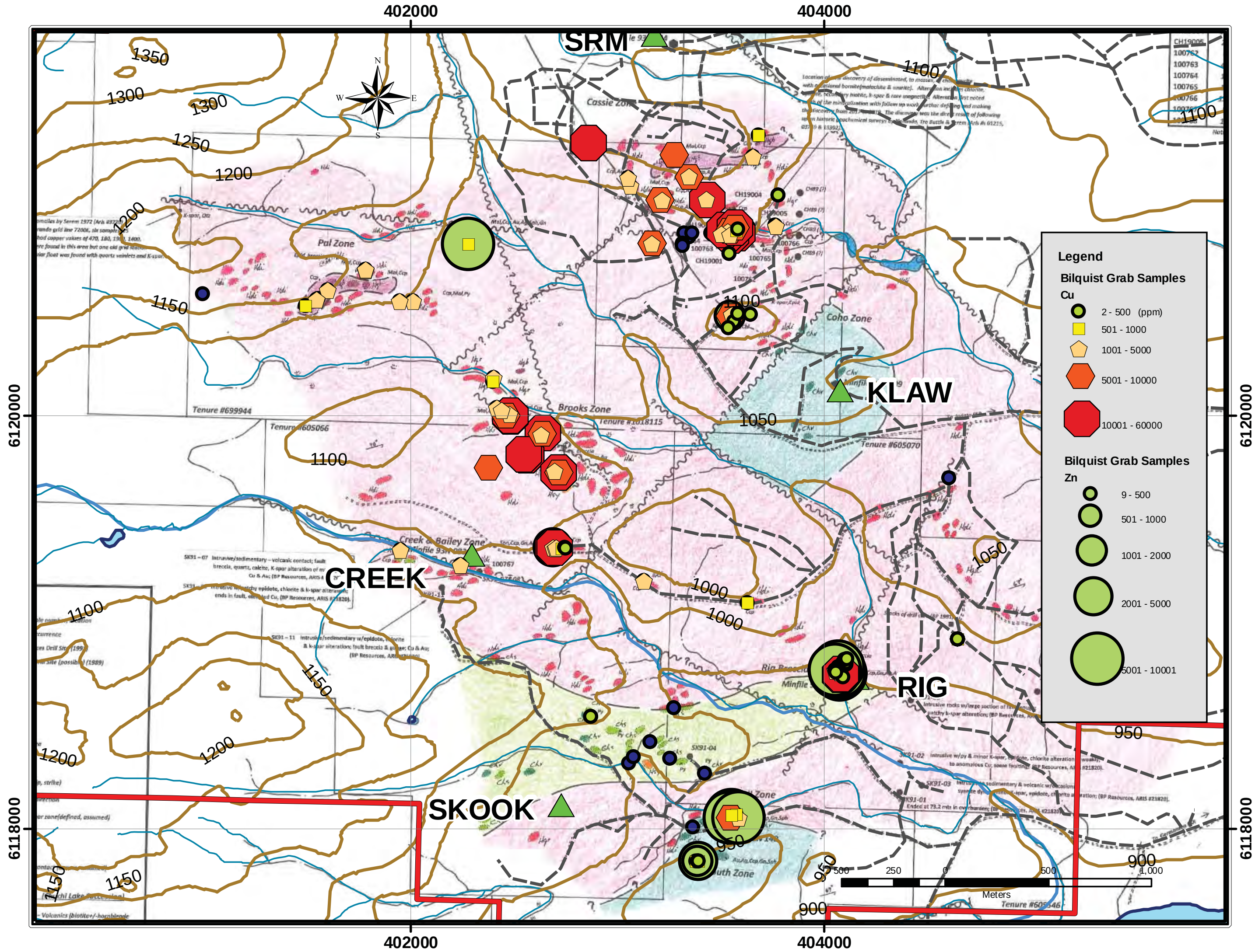


Figure 17: Copper and Zinc Assays in Rocks: Bilquist Prospecting

Copper assays for grab samples compiled from Bilquist records for prospecting between 2002 and 2019 are shown with the range of symbol shapes and sizes in the legend. Zinc values are shown in green circles in proportion to value and plotted beneath the copper symbols such that the zinc symbol only appears where gold is low or zinc very high. Minfile showings are shown for reference.

Map drawn by the author in ArcGIS 9.3 December, 2020, using geochemical database compiled by Bjorkman.

Bilquist collected and assayed 111 mineralized rock samples, which are plotted by symbolized values for copper-zinc and gold-arsenic in Figures 17 and 18, respectively. The Coho Zone between the SRM and KLAW Minfile sites has a generally high concentration of copper assays exceeding 10,000 ppm (or 1%), but fewer high gold assays possibly reflecting geochemical zonation. Areas with gold assays above 500 ppb (0.5 g/t) also do not always coincide consistently with the high copper assays. Calculated correlation coefficients for gold are low with copper (0.25) in this data set, but high for Sb (0.80) and Bi (0.92). Copper is more highly correlated with Pb (0.63), Zn (0.63), Ag (0.77) and Co (0.79) than with gold and moderately correlated with Bi (0.47).

General inspection of assay locations on the map shows that Pb and Zn are commonly high at the Rig showing accompanied by Ag and sporadically by Cu which distorts the correlation calculations for the whole data set. Gold is correlated with As and Sb at the CL11 showing in the southern sector of the map about 1 km east of the Skook showing and this is shown on Figure 18

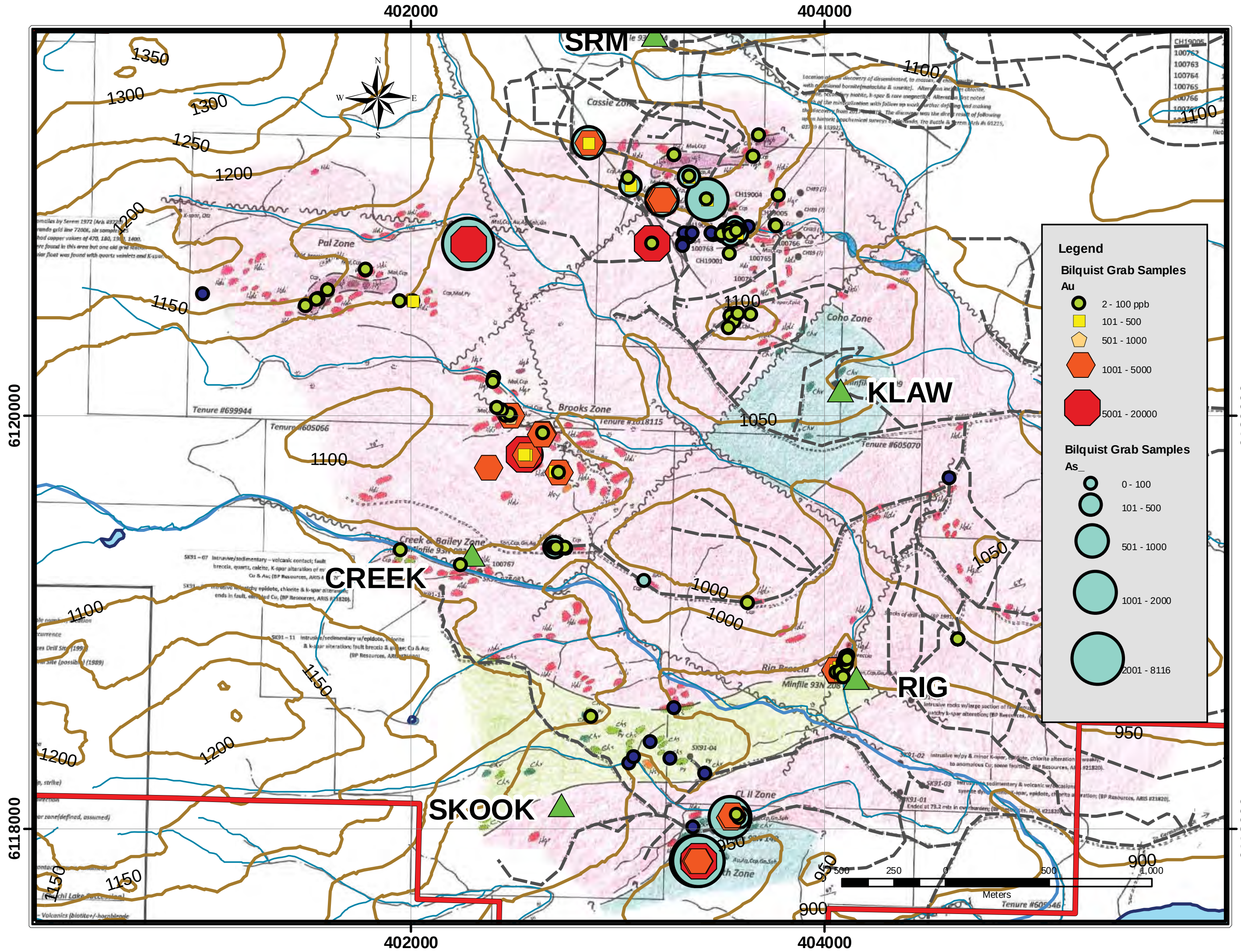


Figure 18: Gold and Arsenic Assays in Rocks: Bilquist Prospecting
Gold assays for grab samples compiled from Bilquist records for prospecting between 2002 and 2019 are shown with a range of symbols are gauged in the legend. Arsenic values are plotted under the gold symbols using proportional sized pale blue circles. Minfile showing are shown for reference.
Map drawn by the author in ArcGIS 9.3 December, 2020, using geochemical database compiled by Bjorkman.

by using larger symbols for As overlapped by the gold symbols.

Generally, Bilquist observed different mineral associations in the different mineralized zones and this is corroborated by the assays. The zone between the KLAW and SRM showings was characterized by chalcopyrite in fractures. The Rig and CL-11 zones at the south extent of the present claim block had observable sphalerite and galena.

Bilquist systematically recorded rock textures in photographs of slabbed rocks and obtained petrographic descriptions of many igneous rocks from the Property. These may be useful in establishing rock units for geological mapping.

7. Geological Setting and Mineralization

7.1 Regional Geology

The Chuchi South Property is a part of the Nation Lakes Porphyry Camp of Nelson and Bellefontaine (1996) (Fig. 22) and is located within the central Quesnel terrane, in the physiographic region known as the Intermontane Belt of the Canadian Cordillera. The Quesnel terrane is one of several allochthonous terranes that docked with the North America craton during the Mesozoic and that are composed of belts of volcanic arc strata, coeval plutons and derived terrigenous and marine sedimentary rocks. The Quesnel Terrane is fault bounded and wedged between highly deformed oceanic crustal domain known and the Wolverine Metamorphic Complex (WMC) on the east, and the Cache Creek Complex on the west (Fig. 19). The WMC is a narrow and limited body of gneissic rocks wedged between the Quesnel Terrane and thrust faulted sedimentary rocks of the cratonic margin. The Cache Creek Terrane or Complex is widely distributed and appears to be coupled with the Quesnel Terrane throughout the Province although it is generally of Permian age. It varies in character from ophiolitic complexes largely represented by seas of serpentinites, such as in the Turnagain district to the north and marine carbonates and siliciclastics in the region west of the Nation Lake Camp. The Nation Lakes Camp rocks are dominated by the Upper Triassic - Lower Jurassic Takla Group sedimentary and volcanic rocks, and coeval and younger intrusive rocks including the Hogem Batholith (Fig. 19). The Takla Group stratigraphy is broadly correlative with Nicola Group rocks in southern B.C. and Stuhini Group rocks in northern B.C. (Richards, 1976; Monger, 1977) and shares a common augite phyric character in their mafic members. The Takla Group strata north of Chuchi Lake and underlying the Chuchi South Property are informally named the Chuchi Lake Succession (Nelson and Bellefontaine, 1996) and are comprised of intercalated volcanic and sedimentary rocks. Throughout the region of the Nation Lakes Camp Nelson and Bellefontaine mapped several similar packages of volcanic strata, but considered that the diversity of rock types within each area made it tenuous to adequately correlate them despite the similarities so decided to use the term successions to distinguish packages of volcanic strata. Their rationale was that the differences in the strata reflected independent volcanic centers that may have been simultaneous or diachronous, but thick glacial overburden resulted in a lack of extensive outcrop.

The Takla Group volcanics of the region are comprised of basalts, andesites, and latites occur as augite porphyritic and/or plagioclase porphyritic flows and flow breccias with lesser tuffs. The basalts and to some degree the andesitic rocks are distinctive in being augite, plagioclase and in fine detail apatite porphyritic and having a general paucity of hornblende. The somewhat unusual modal mineralogy corresponds to a distinctly alkalic composition due to high potassium contents, which classifies them as absarokites (basaltic) and shoshonites (andesitic) of the shoshonite suite. There are mappable units of vesicular flows and flow breccias, with amygdule filling of calcite, epidote and probably altered zeolites. These flows and flow breccias are gradational with maroon and grey agglomerates that contain fragments of monzonite diorite, ash and ash-crystal tuff, siltstone, and black shale. The agglomerates have carbonate-rich fragments and a calcareous matrix locally. The sedimentary rocks are greywacke, siltstone, black shale and hornfelsed varieties of these rocks (argillite), all intercalated with ash and ash-crystal tuff beds locally. Macrofossils found in shales in the area have been identified as Pleinsbachian giving an age of 193-196 Ma for the strata (Nelson and Bellefontaine (1996).

The major intrusions of the region are the Hogem and Germansen Batholiths (Fig. 19, 20 and 22). The Hogem is dominantly alkalic in composition ranging from alkalic gabbros to alkali feldspar granites with monzonite and monzodiorites being volumetrically superior and spatially is a suite of separate intrusions. In contrast the Germansen is a nearly monolithic

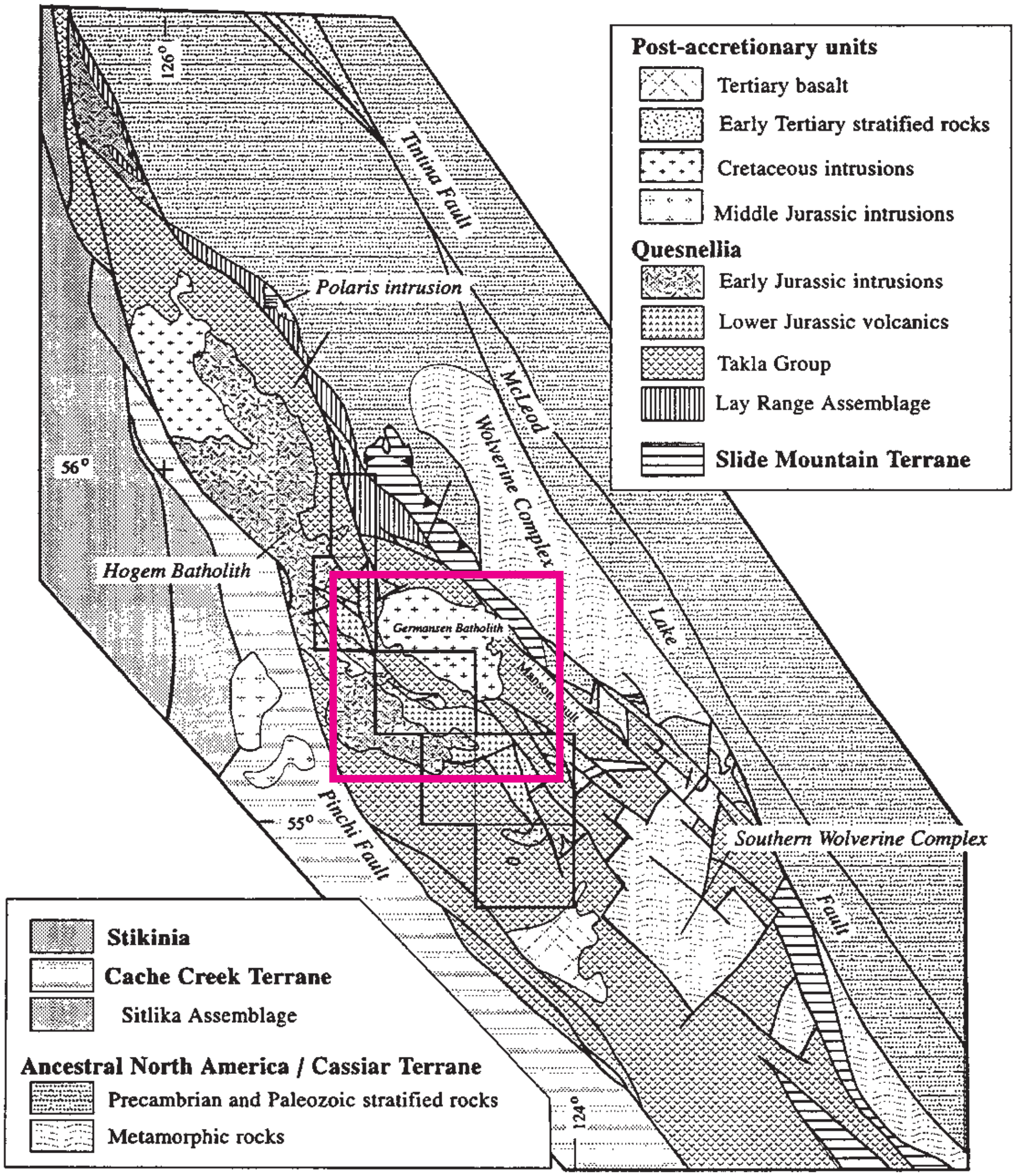


Figure 19: Regional Geology and Tectonic Setting for the Nation Lakes Camp
The Germansen Batholith at the center of the map lies north of the Chuchi Lake area. The outline of Regional Geology Map in Figure 20 (below) is shown in red. Scale is given by latitude and longitude reference marks. North is up.
Quesnellia is bounded by the Pinchi Fault and the McLeod Lake - Tintina Faults. The Cache Creek Terrane lie to the west of the Pinchi Fault. The Slide Mountain Terrane, the Wolverine Complex are metamorphic complexes thrust onto the east side of Quesnellia and separating it from cratonic North American strata,
Map from Fig. 2b in BCGS Bulletin 99 on the Nation Lake Porphyry Camp (Nelson and Bellefontaine, 1996).

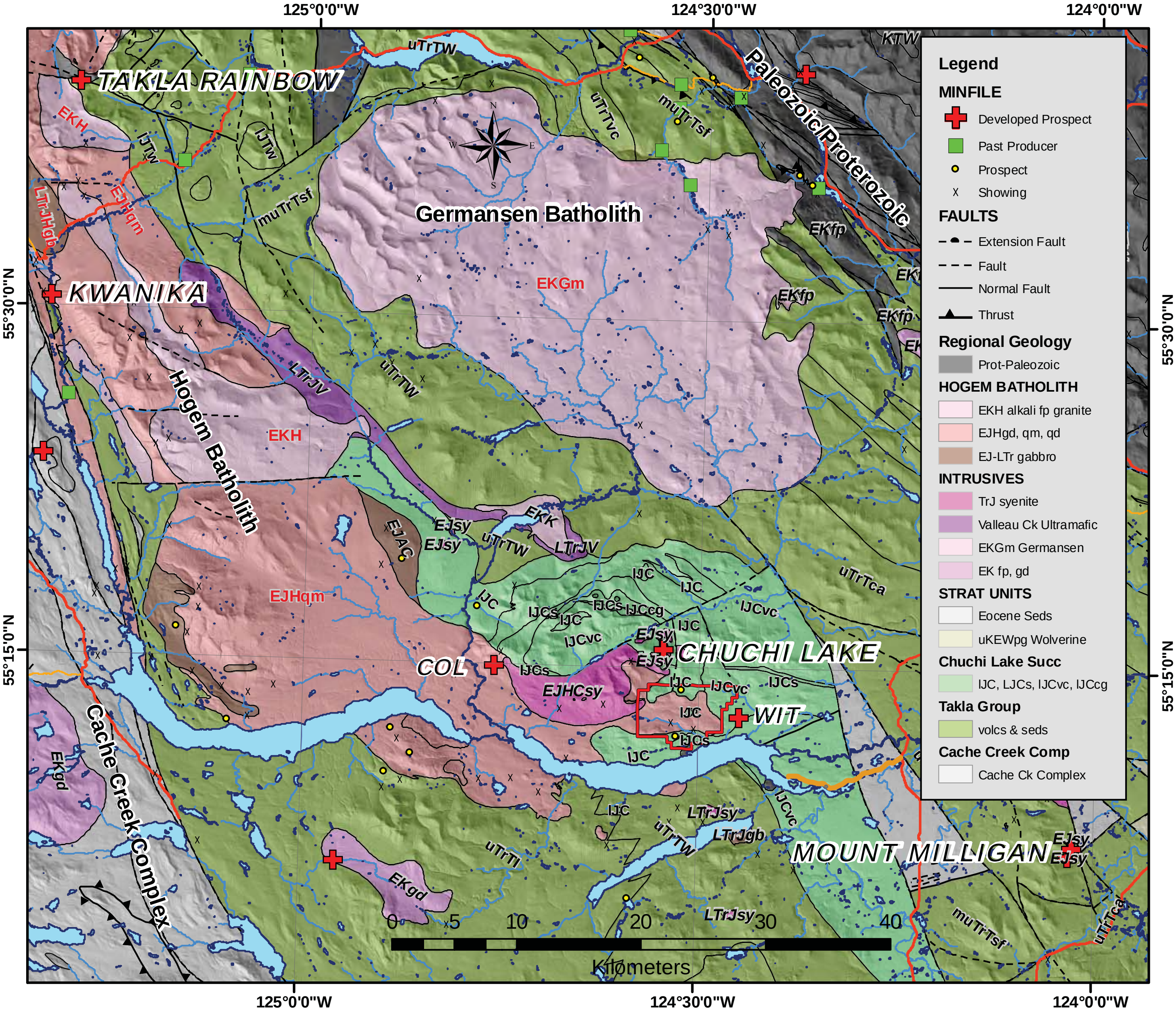


Figure 20: Regional Geology: Hogem Batholith region
Map shows main stratigraphic and intrusive units of the region subdivided into groups. Significant alkalic porphyry deposits at Kwanika, Takla-Rainbow, Col, Chuchi Lake, and the Mount Milligan Cu-Au Mine, are labelled. The Quesnel Terrane is truncated on both sides by major dextral faults, which juxtapose the Cache Creek oceanic crust terrane Complex on the west and the Slide Mountain oceanic crust and deformed continental crust on the east. The Hogem Batholith intrudes coeval volcanic strata of the Takla Group and defined younger volcanic successions. The Chuchi-South Property, Chuchi Lake deposit and Mount Milligan all lie at the southern tip of the Hogem batholith.
Map drawn from BCGS GIS files (downloaded from Mapplace) using ArcGIS 9.3 by the author November, 2020.

alkali feldspar granodiorite pluton. Hogem Batholith Intrusive Suite is generally hypidiomorphic granular in texture, but also contains aplitic, pegmatitic and K-feldspar porphyritic varieties. It is subdivided on the basis of modal mineralogy and phenocryst content into four groups: i) syenite, quartz syenite, alkali feldspar granite which cores the batholith in this area; ii) alkali gabbro - diorite, which underlies a significant part of the area north of Chuchi Lake; iii) K-feldspar monzonite, locally porphyritic, and surrounding the more syenitic core phase;

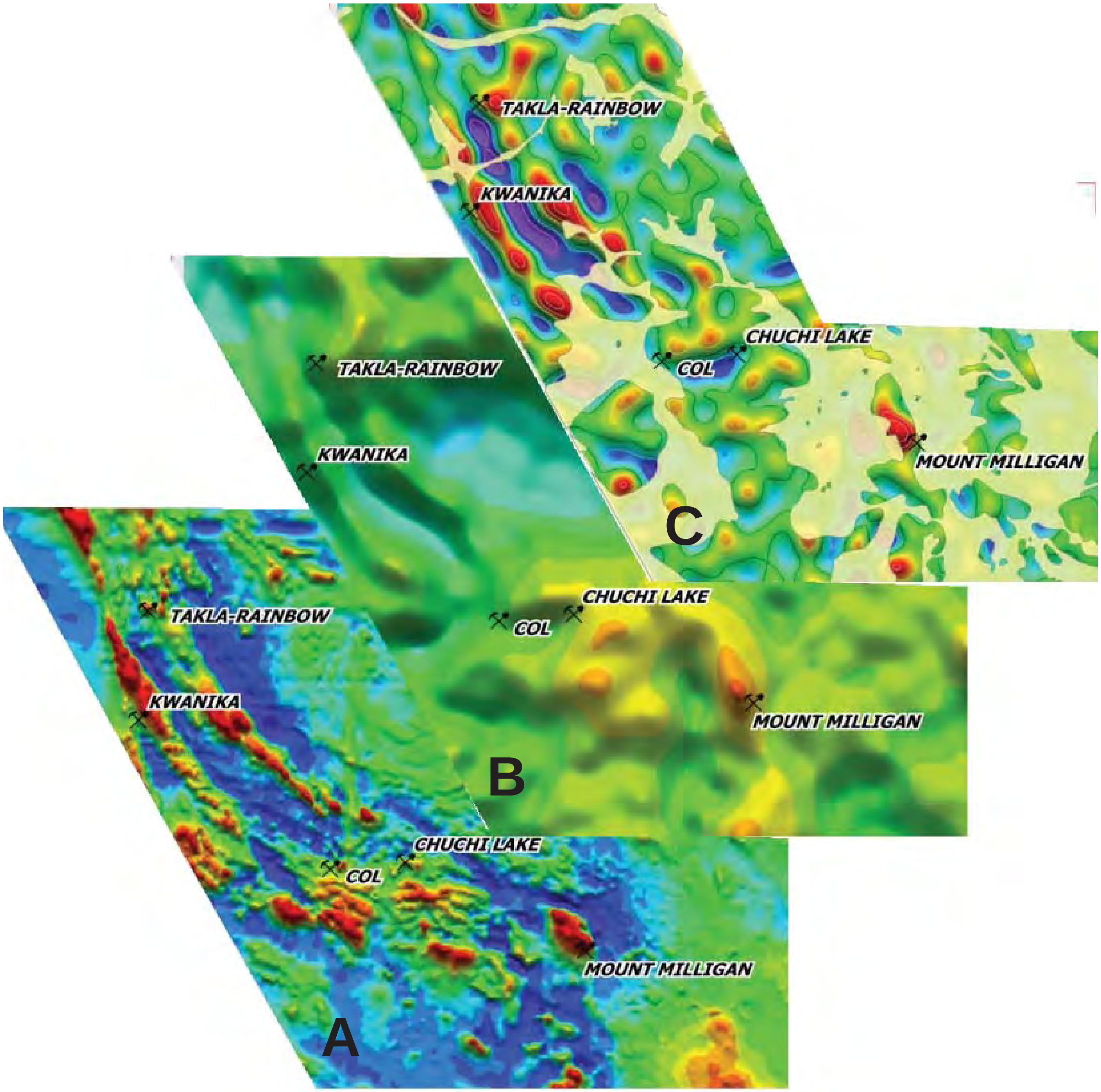


Figure 21: Geoscience BC Quest Geophysics of the Quesnel Terrane: Nation Lakes Area
Images from the Bedrock geology of the QUEST map area, Central BC (Logan et al., 2010) showing continuity of plutonic complexes under cover to the southeast of the Hogem Batholith towards Mount Milligan. A: NRCAN Total field Airborne Magnetics; B: Geoscience BC QUEST Bouguer Gravity Image; C: Unconsolidated Quaternary till and gravel mantling Geoscience BC Second Vertical Derivative of the Bouguer Gravity Image.
Figure is adapted from Logan et al. (2010) by the author in ArcGIS 9.3 November, 2020.

and iv) monzodiorite, which surrounds, and may be a fractionated equivalent to the alkali gabbro-diorite. Probably the most important or key porphyritic textural rock types in relation to porphyry-type mineralization are the crowded feldspar porphyritic monzonites, which contain large, closely spaced, plagioclase phenocrysts. The plagioclase monzonite diorite porphyry rocks are further subdivided on the basis of the presence of significant (>2%) primary and or deuteric magnetite content. The magnetite-rich variety, characteristic of the MBX intrusion at the Mt Milligan Mine and the core of the BP-Chuchi copper-gold system north of the Property, contains augite and biotite. Both plagioclase porphyries are believed to be hypabyssal, and genetically

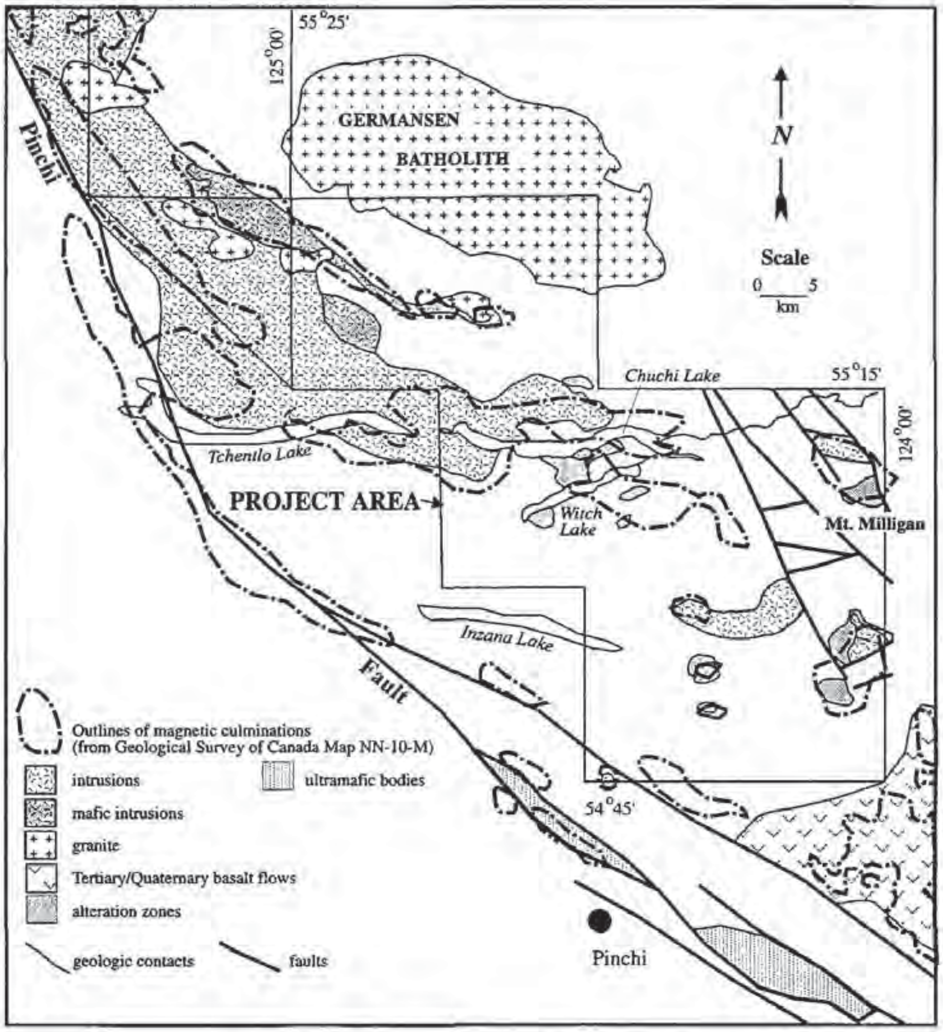


Figure 22: The Nation Lake Porphyry Camp
The project area noted on the map is the area mapped by Nelson and Bellefontaine (1996) in the period 1990 to 1993. That geological mapping project was a response to the increased exploration activity spurred by the the discovery of Mt Milligan in an overburden covered area in 1987.

related to the compositionally identical plagioclase and augite porphyritic flows and breccias of the Chuchi Lake Succession described above. Nelson and Bellefontaine (1996) also describe distinctive augite-plagioclase porphyritic flows in a ridge south of the BP-Chuchi deposit in which the plagioclase crystals are up to 1 cm in length. The phenocrysts are commonly clusters or bundles of synneused (i.e. welded along common crystal faces) crystals resulting in a ragged termination of the phenocrysts. Blocky augite phenocrysts up to 8 mm across accompany the plagioclase megacrysts.

The full extent of the Hogem Batholith is obscured at its southern end by widespread and in places thick glacial tills, glaciofluvial and glaciolacustrine deposits. Airborne geophysical surveys under the auspices of the Geological Survey of Canada and Geoscience BC have covered the extent of the Quesnel terrane to help understand the intermittent clustering of porphyry deposits along it 1000 km length from Copper Mountain in the south to Kemess and Lorraine in the north (Logan et al., 2010). Airborne magnetometer was completed by the GSC and airborne gravity under the QUEST BC project funded by Geoscience BC in 2008. Sections of these surveys from the map publication by Logan et al. (2010) at their northern end are shown juxtaposed in Figure 20 to illustrate the inferred continuation of elements of the Hogem batholith under the Mount Milligan copper gold porphyry deposit, which lies some 32 kilometers

SE of the Property.

Regionally the stratigraphy has 20° - 45° dips to the south. There are two notable exceptions: in the Chuchi deposit area to the northwest, dips are 30° - 50° to the east and southeast, and in the central Skook area to the south dips are 20° - 30° to the east. The east-trending dips may be attributed to the emplacement of adjacent intrusions that postdate sediment deposition. Faults generally follow creeks or other physiographic linear features (Bilquist, 2019). The sense of displacement is usually difficult to discern due to the discontinuous nature of the volcanic and sedimentary stratigraphy.

7.2 Stratigraphic Units of the Nation Lakes Camp

The Nation Lakes Camp includes the areas around the BP-Chuchi deposit, the Chuchi South Property and the Mt Milligan deposit. The original stratigraphic group defined for the region is the Upper Triassic Takla Group and is made up of dominantly volcanic strata and related reworked volcanics and sedimentary rocks. Nelson and Bellefontaine recognized several distinguishable and somewhat mappable volcanic sections or units, which had very similar sets of lithologies, but too much diversity between them to directly correlate under the requirements for strict formational status and not enough outcrop to map out facies changes between them. Instead they termed them, less formally, “Successions” under the names Slate Creek, Plughat Mountain, Inzana Lake, Chuchi Lake, Twin Creek, Witch Lake, Willy George, and Lay Range. Of these most were retained in the broad regional Takla Group except for the Chuchi Lake Succession and the Twin Creek Succession which they separated from the Upper Triassic Takla Group on the basis that they were seen to stratigraphically overly the other successions (the base of the Twin Creek succession overlies has a well-exposed unconformity on Upper Triassic volcanics) and by their demonstrably Lower Jurassic age fossils (Chuchi Lake Succession has Pliensbachian ammonites that are younger than the youngest known Takla Group in the region) and geochronological evidence. The Chuchi Lake Succession was demonstrated to overly the Witch Lake Succession south of Chuchi Lake and Nelson and Bellefontaine’s recognition of the close spatial relations of intrusive and extrusive units at Mount Milligan in stocks connecting to sills that grade into texturally recognizable extrusive pyroclastic units shows the importance of detailed geological mapping. The Chuchi Lake Succession underlies all of the ground in the vicinity of the Chuchi South Property and the description below is adapted from Nelson and Bellefontaine (1996):

7.2.1 Chuchi Lake Succession

The Chuchi Lake succession defined in Figure 22, is named for excellent exposures on the north shore of Chuchi Lake where it is subdivided into map units lJC, lJCs, lJCvc, lJCag on Figures 20 and 24 (current BCGS digital map files). It also outcrops extensively in the mountains between Klawdetelle Creek and the Klawli River. Although some dark green, augite phyric basalt flows within it resemble the Triassic augite porphyries, as a whole the Chuchi Lake succession has a distinctive character. Unlike the underlying Witch Lake succession (uTrTW on Fig. 24), it is compositionally and texturally heterogeneous, with feldspar-phyric volcanic lithologies predominant. In further contrast, it shows evidence of deposition in a partly subareal environment: maroon colours and large, irregular amygdules are common and lahars form part of the section. One such lahar in a roadside exposure north of the east end of Chuchi Lake is a grey-green to maroon, highly heterolithic, but plagioclase-dominated, matrix-supported volcanic conglomerate breccia. It directly overlies a thin volcanic sandstone bed that contains abundant wood fragments on bedding planes, further evidence of near-shore deposition. Black, remnant cores of carbonaceous material with reaction rims denote wood fragments caught up in the hot lahar along with brachiopods that show it was deposited in a shallow marine setting.

The Chuchi Lake succession includes heterolithic volcanic agglomerates and lapilli tuffs, plagioclase and plagioclase augite-phyric latites and andesites, lesser augite (minor olivine) - phyric basalts and trachytes. Internal facies variations from flow to fragmental occur within individual eruptive units. Local flow packages show consistency in rock textures and even in the shapes of phenocrysts. They grade laterally into heterolithic agglomerates and lahars, which represent much broader textural and compositional parentage. Flows are especially prominent from the north shore of Chuchi Lake to Klawdatelle Creek and northwestwards towards ‘Adade Yus Mountain.

Considerable overall facies variation is characteristic. A sedimentary marker horizon, unit lJCs on Figures 20 and 24, provides a convenient reference line 20 kilometres long. This marker horizon dips moderately south and extends northwestwards from the roadside lahar exposure discussed above through the BP-Chuchi alteration halo, where sediments outcrop minimally but are intersected in many drill holes. North of Klawdetelle Creek, the sediment

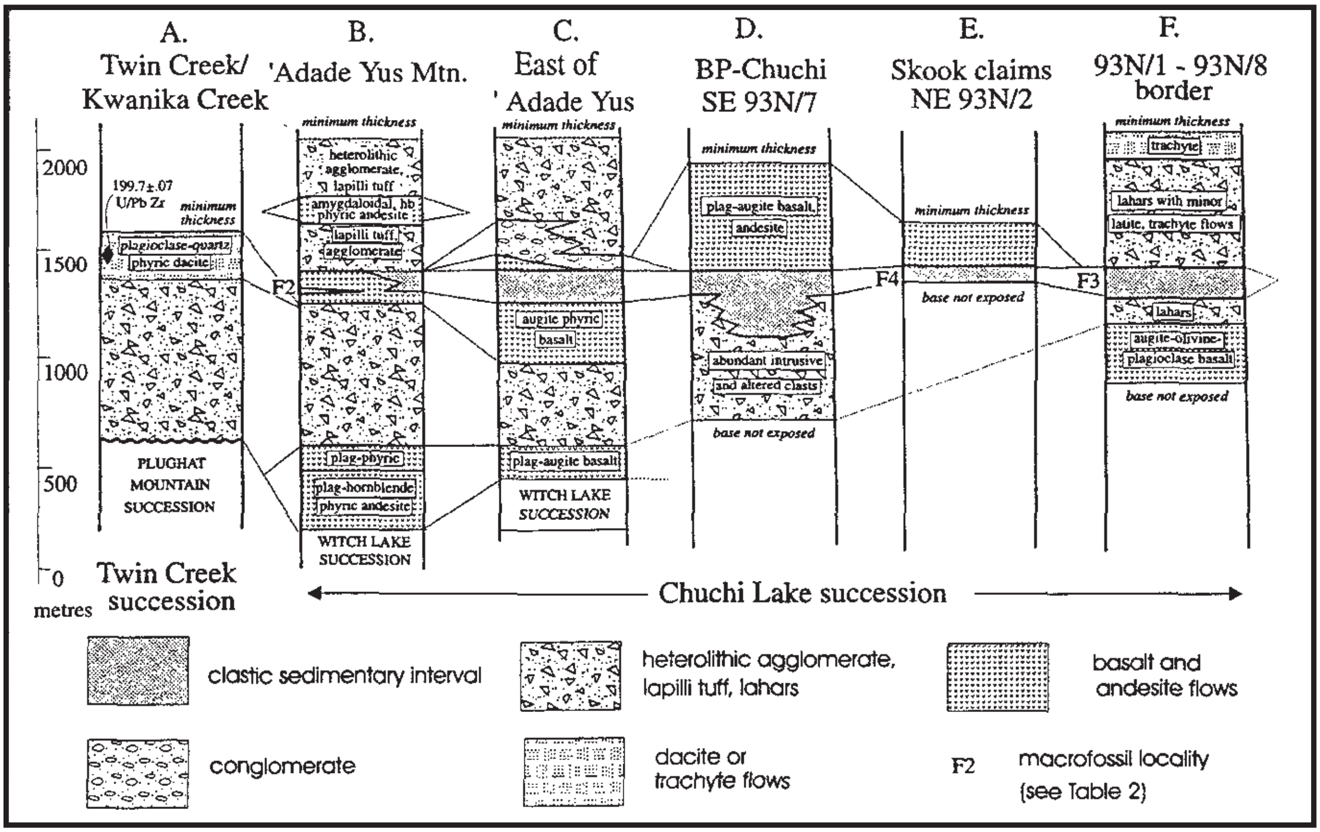


Figure 23: Stratigraphic Columns for the Nation Lakes Camp
The diagram is from Figure 5 in Nelson and Bellefontaine, (1996). Columns D and E represent the Chuchi South Property.

horizon is exposed in the cirques of ‘Adade Yus Mountain, where it dips gently south and strikes nearly east-west with an estimated thickness of 250 metres. It pinches out into volcanic flows toward the west. The sediments include brown-weathering sandstone, siltstone, dark grey shale and variable amounts of cherty, pale green dust tuff. The external relationships of the sedimentary marker illustrate the petrologic and lithologic variability of the Chuchi Lake succession shown by the stratigraphic columns on Figure 23. On ‘Adade Yus Mountain, a lower sedimentary interval, 10 metres thick, is interbedded with green and maroon amygdaloidal clinopyroxene - plagioclase-phyric and aphanitic basalt flows 150 metres below the main sedimentary unit. The major interval of sediments is overlain by heterolithic agglomerates with plagioclase -augite, augite+plagioclase, plagioclase + acicular hornblende porphyry clasts

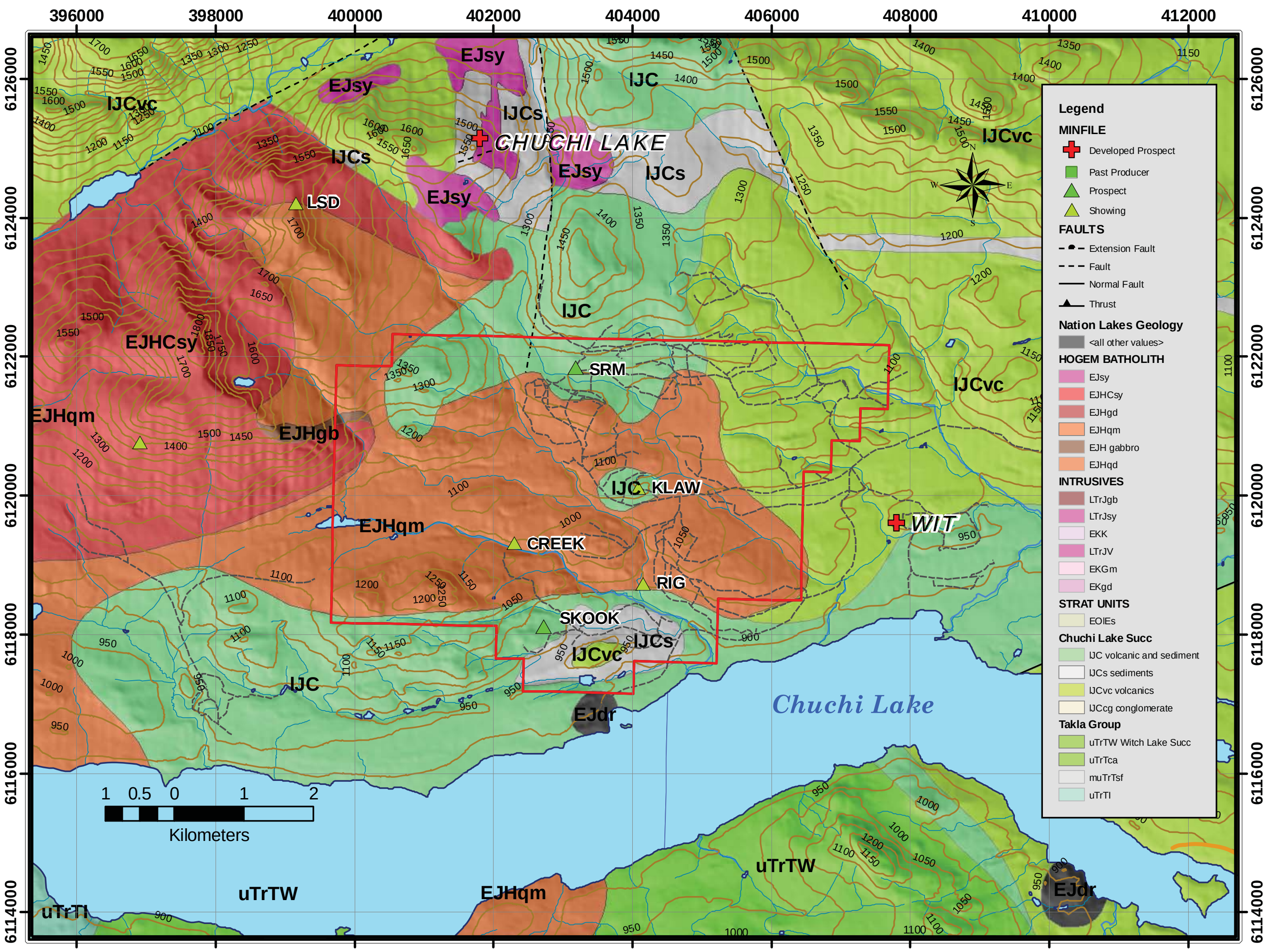


Figure 24: Geology of the Chuchi South area
Minfile showings and developed prospects in the vicinity of the Property are labelled with names referred to in this report. Geological information is from GIS files downloaded from BC Government websites. Unit labels are described in the text. Drawn by the author December, 2020, using BC Geological Survey GIS data for geology.

and locally altered and pyritized monzonite fragments. This unit is indistinguishable from the heterolithic agglomerate that lies below the sediments. East of ‘Adade Yus Mountain (a 1900 meter peak 10 km N of the west end of Chuchi Lake, Fig. 20), the sediments contain abundant fine-grained tuff and overlie a green porphyritic agglomeratic flow unit with plagioclase laths, up to 1 centimetre in size, and lesser augite. The sediments coarsen upwards into thick sandstone beds with abundant rip-up clasts of shale. These are overlain by pebbly grit and conglomerate with clasts of pink glassy flow-banded trachyte, welded trachytic tuff, quartz-jasper veins, subvolcanic intrusions and strongly epidotized volcanic rocks which represent both local and exotic source rocks. These conglomerates are overlain by heterolithic agglomerate.

East of the “elbow” in Chuchi Lake (Fig. 24), the sedimentary interval lJCs lies between identical heterolithic lahars. This package overlies an augite-olivine phyric basalt flow that outcrops on the prominent ridge along the southern border of NTS 93N/08, just north of the mapped area. The basalt may correlative with the flows below the sediments on ‘Adade Yus Mountain. On the BP-Chuchi property, the sediment package overlies and also interfingers with heterolithic agglomerates and lapilli tuffs that contain abundant crowded porphyry intrusive clasts. As well, it is intruded by crowded monzonite porphyry. Textures indicative of intrusion into soft sediments are seen in drill core: these are discussed further in the property description. The age of the monzonite at BP-Chuchi is 188.5+2.5 Ma by uranium-lead dating of zircons (Mortenson et al. 1993).

The sedimentary interval is capped by a distinctive suite of plagiclase and augite-phyric intermediate flows with large phenocrysts. The flow unit continues south, interrupted by an apophysis of the Hogem batholith, to the Skook claims. There volcanic flows overlie an inlier of the marker horizon, consisting of sandstones, siltstones and white weathering cherty tuffs with limy nodules.

The Chuchi Lake succession (units lJC, lJCs, lJCvc, lJCag on Fig. 24) overlies the Witch Lake succession (uTrTW) south of Chuchi Lake, along a northwesterly trending, unexposed contact that parallels the regional strike (Fig. 20). Maroon, large-plagioclase phyric latite outcrops on the south shore of the lake and in the lower canyon of the Witch Lake outlet creek. Farther south, heterolithic, green to slightly maroon agglomerate and lapilli tuff are assigned to the Chuchi Lake succession.

Figure 25: Crowded feldspar porphyritic shoshonite
From outcrop at the eastern edge of the Property

The total thickness of the Chuchi Lake succession north of Chuchi Lake is about 1650 metres (Fig. 23). Its top is eroded and its basal contact is only exposed on one ridge 5 kilometres north of Klawdatelle Lake (Fig. 24) There, augite-porphyry lapilli tuffs pass upwards, apparently in a transitional contact, into dull maroon, heterolithic plagioclase -augite phyric agglomerates. At this locality there is no suggestion of unconformable relationships between the two successions. However, between western Chuchi and Witch lakes, a few outcrops of maroon plagioclase porphyritic flows and fragmentals occur within an area otherwise underlain by dark green augite porphyritic agglomerates and volcanic sediments of the Witch Lake succession. The maroon rocks are archetypical of the Chuchi Lake succession (Fig. 25 and 26) and may represent its base. If this interpretation is correct, then the base of the Chuchi Lake succession here is morphologically irregular and lithologically abrupt and thus may be a unconformity. This interpretation agrees with the clearer basal contact relations of the Twin Creek succession to the north.

The sources of Chuchi Lake pyroclastic and flow deposits were evidently large magma chambers in which considerable differentiation occurred. Mafic to felsic, and alkalic to subalkalic lithologies are intermixed, with no clear stratigraphic evolution from one to the other. The plagioclase (-augite-hornblende) porphyries contain from 70 to 80% plagioclase and from zero to 15% matrix potassium feldspar. They range from andesites and dacites to latites. The flows between Chuchi Lake and the BP-Chuchi property contain large, isolated plagioclase phenocrysts. They are interbedded with large-augite - phyric basalts. By contrast, clasts in the lahars tend to be more crowded with smaller plagioclase phenocrysts: their textures most resemble the high-level intrusions. Perhaps the intrusions and the lahars were associated with more explosive volcanic events.

The most felsic flow and fragmental units occur in the uppermost exposed part of the Chuchi Lake succession east of the “elbow” in Chuchi Lake. Dark maroon felsic latite to trachyte flows, some plagioclase phyric and others very fine grained to nearly glassy, contain a high percentage of matrix potassium feldspar and large, irregular, amygdules partly filled with calcite and albite. A single large-plagioclase intrusion and flow unit, with individual phenocrysts averaging several centimetres long, is exposed north of Chuchi Lake. Although megacrystic intrusions are fairly common near Heidi Lake and elsewhere, this is the only documented volcanic occurrence of megacrystic feldspar porphyry in the map area. Farther north and down-section, a partly welded trachyte tuff-breccia, unique in the map area, is cut off by the Hogem batholith. It contains a few clasts of coarse grained syenite.

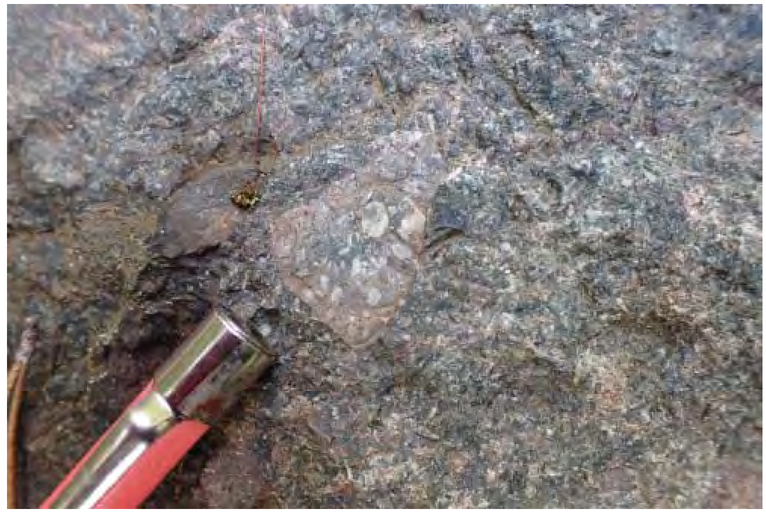


Figure 26: Chuchi Lake Succession
Crystal Lithic tuff at the eastern boundary of the Property.

Hornblende porphyry with acicular phenocrysts occurs as clasts in polymictic breccias at the base of the Chuchi Lake succession between Witch and Kutcho Lakes, and also up-section north of Chuchi Lake. This textural variant is also seen in dykes. In some exposures the acicular hornblende porphyries, whether dykes or clasts in fragmental deposits, contain small inclusions of hornblendite, clinopyroxenite (strongly actinolitized), and amphibolite.

Three collections of ammonites and two collections of brachiopods were made from the sedimentary marker unit in the Chuchi Lake succession by Nelson and Bellefontaine (1996). The ammonites were identified by Howard Tipper of the Geological Survey of Canada as Early Pliensbachian and Late Pliensbachian from 3 different sites in the area, and probably equivalent to each other indicating that the intravolcanic sedimentary marker is Pliensbachian. The volcanic rocks above it represents the youngest volcanism in Quesnellia so far documented (late Pliensbachian or possibly younger). The monzonite intrusion on the BP-Chuchi property appears to have intruded the sedimentary interval prior to lithification. Its age, 188.5 ± 2.5 Ma. provides a possible absolute date on the Pliensbachian.

7.3 Igneous Intrusive Units of the Chuchi Lake Area and the Nation Lakes Camp

The Takla Group (Fig. 20) and associated Lower Jurassic volcanic units, including the Chuchi Lake Succession (Figs. 20 and 24), in the region extend south from the main exposure of the Hogem Batholith and are cut by a myriad of igneous intrusions ranging in size from metre-wide dykes to composite bodies of more than 10 square kilometers in extent. The intrusions are largely recognized as sources of the mafic to felsic volcanics of the Chuchi Lake Succession (Nelson and Bellefontaine, 1996). The intrusions are extremely variable in composition, texture and size, but are predominantly alkalic in the range of monzonites and monzodiorites. Textures range from sparsely porphyritic with large phenocrysts to the “crowded porphyries”, a texture that has been linked to alkalic-suite porphyry copper-gold systems throughout British Columbia.

The main compositional subdivisions of the intrusive igneous units have been mapped, geochemically and petrographically analysed, and described by Nelson and Bellefontaine (1996) and their definitions and descriptions from the Chuchi Lake area are adapted in sections 7.31 to 7.39 below. Geographic references in the original descriptions are located on maps in this report where known, or on OF1992-04 map from Nelson et al. (1992), but some unknown references have been removed. Property names referred to by Nelson and Bellefontaine (1996) are dated to the 1990s, and many no longer exist.

7.3.1 Syenite:

Coarse-grained, equigranular syenites contain sparse to moderately abundant 5 to 8 mm plagioclase phenocrysts in an interlocking mafic-poor matrix of orthoclase and plagioclase. They form small intrusions west of Dem Lake (30 km south of the Property), within the Dem alteration halo, and 6 kilometres south of Witch Lake (Fig. 20). They are also found as inclusions in a welded trachyte tuff breccia of the Chuchi Lake succession. In one dyke south of Witch Lake, large, centimetre-sized, tabular white plagioclase and pink orthoclase phenocrysts occur in a felsic matrix. North of Heidi Lake (in the Mt Milligan area (see Figs. 20 and 36), orthoclase megacrysts are present in a dyke which occurs in a swarm with sparsely porphyritic monzonites and latites. This dyke is late in the intrusive sequence. Dykes of similar texture and composition post-date mineralization in the MBX stock (Fig. 36), as observed in core.

7.3.2 Monzonite:

In general, coarse-grained monzonite is restricted to the Hogem intrusive suite, the intrusion on Mount Milligan (Fig. 36) and the Max pluton, where it underlies extensive areas and commonly grades in to more mafic compositions. A very small plug or dyke of equigranular, medium-grained, grey-green hornblende monzonite is exposed 3.5 kilometres southeast of ‘Adade Yus Mountain (4 km south of Klawdetelle Lake west edge Fig. 24).

7.3.3 Crowded Plagioclase Porphyritic Monzonite:

This lithology is key to porphyry copper-gold deposits in the Nation Lakes area, as it is throughout Quesnellia (Nelson and Bellefontaine, 1996). It makes up the MBX and Southern Star stocks at the Mt. Milligan deposit (Fig. 36) and is also seen north of Heidi Lake, at BP-Chuchi, the Tas (37 km SSE of the Property), and in the Witch alteration halo south of Chuchi Lake. Farther north, a small, pink, crowded plagioclase-acicular hornblende porphyritic monzonite crops out in a glacial gully 4 kilometres north of Klawdetelle Lake (Fig. 24). Its margins are composed of intrusive breccias with clasts of monzonite and volcanic lithologies. In general the crowded porphyritic monzonites are quite felsic and poor in mafic minerals. Plagioclase phenocrysts 1 to 2 mms in size predominate, loosely touching each other to create a fine grained intrusive texture in hand sample. Hornblende, clinopyroxene and biotite may also be present. The MBX and Southern Star stocks (Fig. 36) and the intrusion on the BP-Chuchi property are plagioclase-biotite-augite porphyries. These are the only instances of phenocrystic biotite in crowded porphyritic monzonite in the area. The fine grained interstitial groundmass is mostly plagioclase and potassium feldspar, with minor quartz, some of which may be secondary. Texturally, these rocks are transitional between intrusive and extrusive. In thin section they strongly resemble some extrusive latite clasts that make up pyroclastic units in the Chuchi Lake and Twin Creek successions, although none of these contain biotite.

Several U-Pb, zircon ages have been obtained from the from the crowded-porphyritic monzonites to monzodiorites. One is 204.2 ±2.9 Ma or earliest Jurassic, coeval with the oldest potassium-argon ages of the Hogem intrusive suite and with the Triassic-Jurassic hiatus shown by the unconformity near Twin Creek. The intrusion at BP-Chuchi was dated in this study at l88.5 ± 2.5 Ma by U-Pb titanite. Geologic relations, discussed in the BP-Chuchi property description, suggest that it was intruded during the late Pleinsbachian intravolcanic sedimentary interval, which represents a volcanic lull during the accumulation of the Chuchi Lake succession. Uranium-lead zircon ages from the Heidi Lake suite at the Mt. Milligan deposit (Fig. 36) are 189, 183. and 182.5 Ma, with the oldest age from near Heidi Lake and the younger ones from the North Slope and the Southern Star stock (Mortensen et al., 1995). A U-Pb age from rutile in the Rainbow dyke obtained by Nelson and Bellefontaine (1996), 182 ±4 Ma agrees with the younger ages of Mortensen et al. (1995). The youngest ages from the Heidi Lake suite provide a reasonable limit to Quesnel arc plutonism and are younger than any known Chuchi Lake succession volcanism.

7.3.4 Sparsely Porphyritic Latite:

Plagioclase hornblende and\or clinopyroxene porphyritic latite occurs mainly as dykes. Small, elongate plagioclase phenocrysts with subordinate hornblende and or clinopyroxene are sparse in a very fine grained, pale greenish groundmass that consists of plagioclase, potassium feldspar, and mafic minerals. Many such dykes occur south of Heidi lake on the western fringes of the Mt. Milligan deposit (Fig. 36). They have also been mapped near Mitzi Lake, north and south of Chuchi lake. They occur either as isolated bodies or as parts of larger intrusive suites. The composition, mineralogy and texture of these intrusive rocks are comparable to some of the extrusive plagioclase-phyric latites within the Witch Lake and Chuchi Lake successions and may be feeders to these more evolved volcanic flows.

Acicular hornblende+plagioclase porphyritic latite is highly distinctive intrusive type, which contains abundant needle-like hornblende crystals between 5 mm and 1 cm long. More irregular or blocky hornblendes may also be present, as well as xenoliths of hornblendite and amphibolite. The groundmass consists of plagioclase, orthoclase and smaller hornblende and augite crystals. Dykes of this lithology occur immediately west and south of the Mt. Milligan deposit (Fig. 36), near Mitzi Lake, and south of Chuchi Lake (Fig.14). Their composition, mineralogy and texture are comparable to extrusive hornblende porphyries near Rainbow Creek and along the outlet of Witch Lake (Fig.20). A few true andesite (potassium feldspar free) dykes have an identical field character to these hornblende latites and can only be distinguished by feldspar staining.

7.3.5 Diorite-Monzodiorite:

Coarse-grained diorites intrude the Inzana Lake (Fig. 20 & 22) succession north of Benoit Lakes and on the Tas claims (37 km SSE of the Property). The Tas pluton is unusual for the Early Jurassic suite in that it is generally orthoclase poor, mostly diorite to granodiorite, although syenite with large orthoclase phenocrysts is also present. Crowded plagioclase porphyritic diorite occurs on top of the hill on the Tas property, south of Chuchi Lake, and in a dyke north of Chuchi Lake that cuts the Chuchi lake succession. On the Tas, plagioclase-hornblende porphyry intrudes earlier, blocky hornblende phyric andesite dykes. South of Chuchi Lake, the crowded porphyritic diorite shows intrusive-breccia and shattered textures in thin section. Megacrystic plagioclase (+augite) porphyritic diorite is restricted to the Kalder pluton. Large, pale greenish plagioclase phenocrysts over a centimetre in size, and much smaller blocky augites, occur in a fairly dark green, very line grained groundmass. The groundmass contains plagioclase and secondary actinolite needles.

7.3.6 Sparsely Porphyritic Andesite:

A swarm of hornblende porphyritic andesite dykes is exposed on the hill at the centre of the Tas property. Well-formed blocky hornblende phenocrysts, roughly 5 mms in length, and smaller plagioclase crystals are sparse to abundant in a dark green, nearly aphanitic groundmass of plagioclase and hornblende. Scattered examples of these “Tas” dykes are seen as far west as Inzana Lake (Fig. 22; 10 km S of the west end of Witch Lake). A swarm of large-hornblende porphyritic dykes occurs south of Witch Lake. ‘The large blocky hornblende crystals in these dykes are strongly reminiscent of the dykes on the Tas property.

7.3.7 Gabbro:

Coarse-grained hornblende-rich gabbros form a small part of the intrusive suite on Mount Milligan. A small coarse grained augite biotite magnetite gabbro body is exposed near the northwestern corner of NTS 93N/l. Its composition ranges from monzodiorite to hornblendite over a few metres; it varies in texture from an intrusive breccia to hornblende pegmatite. The gabbro and hornblendite clasts that occur as xenoliths in the Tas crowded porphyries and in intrusive and extrusive acicular hornblende - biotite porphyries may well have been derived from such a source.

7.3.8 Sparsely porphyritic basalt:

Clinopyroxene phyric basalt dykes and plugs, the intrusive equivalents of the Witch Lake augite porphyries are rare and small, but are notable in occurrences north of Heidi Lake.

7.3.9 Ultramafites:

Coarse-grained hornblendite and clinopyroxenite are most common as small pods enclosed in diorite, part of the Valleau Creek intrusive suite. They also occur in widespread localities as inclusions in volcanic clasts and in hypabyssal intrusions (see discussion following). Three instances of coarse-grained biotite-bearing clinopyroxenite were noted in the project area. Two are isolated dykes: one on the Tas property (NTS093W16) and one in the northwestern corner of NTS 93N-11.

7.4 Geochemistry of the Igneous Rocks

The igneous geochemistry of the Takla Group, Chuchi Succession, the Hogem batholith and many of the numerous Early Jurassic intrusion in the area is dominantly alkalic, or using volcanic parlance belonging to the shoshonitic association. The high K_2O and K_2O/Na_2O characteristic of shoshonites is caused by lower degrees of partial melting of mantle peridotite enriched by fluids from the subducted slab than for calc-alkaline melts. The high K_2O suppresses the early crystallization of hornblende (Loucks, 2014) by reactions such as:

1) $NaCa_2(Mg_4Al)(Al_2Si_6)O_{22}(OH)_2$ + SiO_2 (m) + $KAlSi_3O_8$ (m) ► Ca + Na plagioclase + augite+biotite

2) $NaCa_2(Fe_4^{2+}Fe^{3+})(Al_2Si_6)O_{22}(OH)_2$ + 0.5 $Fe_2Si_2O_6$ (m) + $KAlSi_3O_8$ (m) ► Ca + Na plag + magnetite + augite + biotite

The effect of this geochemistry is to produce the characteristic modal mineralogy of many of the rocks see in the Nation Lakes Camp. Augite, biotite and magnetite are common phenocryst phases in the basaltic and andesitic members, which should instead be termed absarokites and shoshonites, respectively. Hornblende phenocrysts are not uncommon, but augite typically appears first. Pressure (P), Temperature (T) and fH_2O have significant effects on the order of phenocryst crystallization as explained in Figure 28. In the matrix of the mafic volcanics, potassium feldspar is common according to the petrographic observation of Nelson and Bellefontaine (1996). In the author’s experience studying shoshonites of the Altiplano of southern Peru, the potassium feldspar is sanidine, and often contains skeletal apatite crystals.

Nelson and Bellefontaine (1996) collected a large suite of volcanic and intrusive samples from 3 main areas in the Nation Lakes Camp including around Mt Milligan and Chuchi Lake Fig. 22). They were very careful in selecting rocks that did not have significant alteration and in particular, any trace of potassic alteration. All of the potassium feldspars were primary igneous crystals and therefore the K_2O present was attributed to original igneous compositions and contained in potassium feldspars and biotite (*J.L. Nelson, pers. comm., Dec, 2020*). They analysed the suite for major and trace elements and some plots of the data are presented below to document the nature of the shoshonitic geochemistry. Rare Earth Elements ("REEs") were not analyzed by Nelson and Bellefontaine (1996). A similar study was undertaken by Barrie (1993) examining the shoshonitic petrochemistry of the Chuchi Lake and Mt Milligan areas. He analysed whole rock compositions including REEs, but his samples were collected to test the potential of alteration indexes using K_2O/ Sr ratios and the relative enrichment of LREEs vs HREEs and enrichment or depletion of high field strength elements and would have to be examined separately to characterize initial shoshonitic petrochemistry. Barrie (1990) concluded that the ratio K_2O*100/Sr shifted above 1 when significant potassic alteration was present in a the shoshonitic rock from the area.

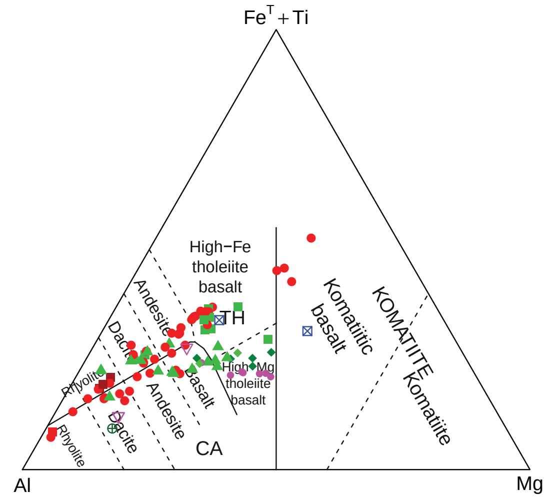


Figure 27: Jensen Cation plot of the Nation Lakes Camp Igneous Rocks
Red symbols are intrusives; green and purple, volcanics. Drawn in GCDkit 4.1.

The Jenson cation ternary diagram (Fig. 27) shows that the suite is generally coherent and representing a fractionation series from high Mg basalts to felsic rocks in both the volcanic and intrusive samples.

The standard classification diagram for plutonic rock, the Total Alkali Silica, "TAS" diagram Middlemost (1994) (Fig. 30) shows a similar coherent fractionation trend throughout the igneous suite with compositions of plutonic rocks overlapping those of volcanics. The fractionation trend evolves from gabbros through the silica saturated alkaline line of monzogabbros, monzodiorites, monzonites to syenites.

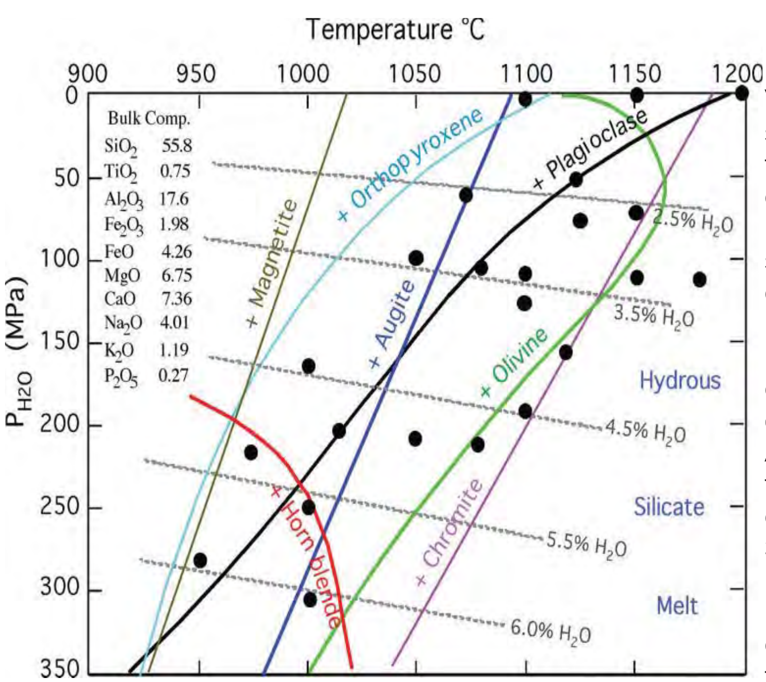


Figure 28: P-T ƒH_2O effect on phenocryst mineralogy (Loucks, 2014)
Varying the wt% H_2O dissolved in the silicate melt strongly affects the order of mineral crystallization from the melt—and consequently the relative rates of depletion or accumulation of various trace elements in the melt—as illustrated by this map of phase assemblages in a series of experiments on a basaltic-andesite arc magma of the composition shown in the inset. Each black dot represents an experiment in which the crystallizing mineral assemblage was identified, and the melt's content of dissolved H_2O (dotted grey contours) was determined from the composition of the quenched glass. At PH_2O ¼ 0 (dry), the crystallization order of silicates from the cooling melt is plagioclase first, followed by olivine, orthopyroxene and then augite. At PH_2O > 350 MPa and > 6.5 wt% H_2O dissolved in the melt, plagioclase is the last of those silicates to crystallize, and hornblende is first. Saturation curves for magnetite and orthopyroxene in the hydrous melts are based on lower-temperature experiments.

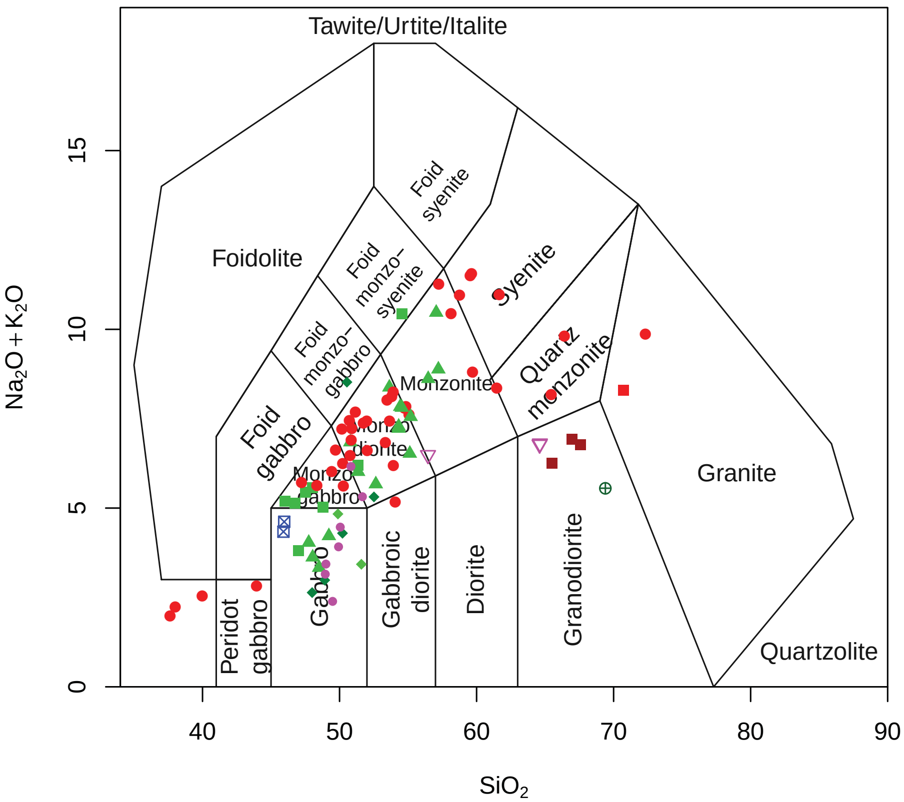
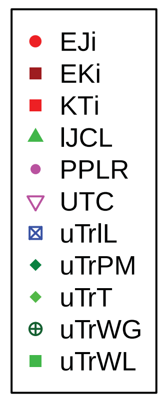


Figure 30: TAS plot of the Nation Lakes Igneous suite
EJi, EKi and KTi are igneous intrusions. The remainder are lower Jurassic (lJCL= Chuchi Lake Succession) and upper Triassic volcanic strata (e.g. uTrWL= Witch Lake succession). A fairly coherent igneous fractionation trend is shown from gabbros through monzogabbro. monzodiorite, monzonite and syenite. Cretaceous (EKi) and Tertiary (KTi) rocks are from different magma suites. Drawn in GCDkit 4.1 by the author, Dec, 2020. (Janousek et al. 2006).



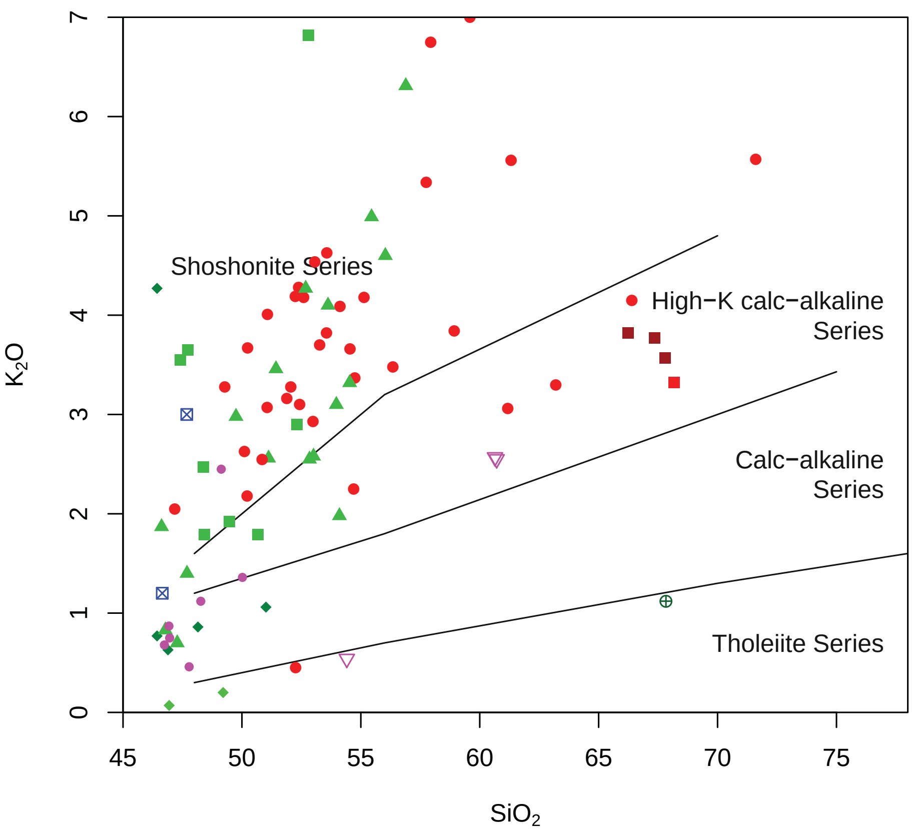


Figure 29: K_2O vs SiO_2 Plot of the Nation Lakes Igneous suite

The Early Jurassic granitoids (EJi) and lower Jurassic Chuchi Lake Succession (lJCL) and upper Triassic suites (uTrIL, PM, WG, WL, T) of volcanic rocks mainly plot in the Shoshonite series of compositions. Rocks from the Cretaceous suite EKi plot on the high-K calc-alkaline series. The acronyms are named in the caption for Figure 29.

The definitive classification diagram for the igneous spectrum is the K_2O-SiO_2 diagram of Peccerillo and Taylor (1976) (Fig. 29) on which the Triassic and Jurassic rocks convincingly plot in the Shoshonite Series. This diagram shows the fractionation trend of K_2O and other major elements are shown on an array of similar diagrams in Figure 31 (the Harker diagram), which show compatible and incompatible fractionation trends typical of igneous suites showing

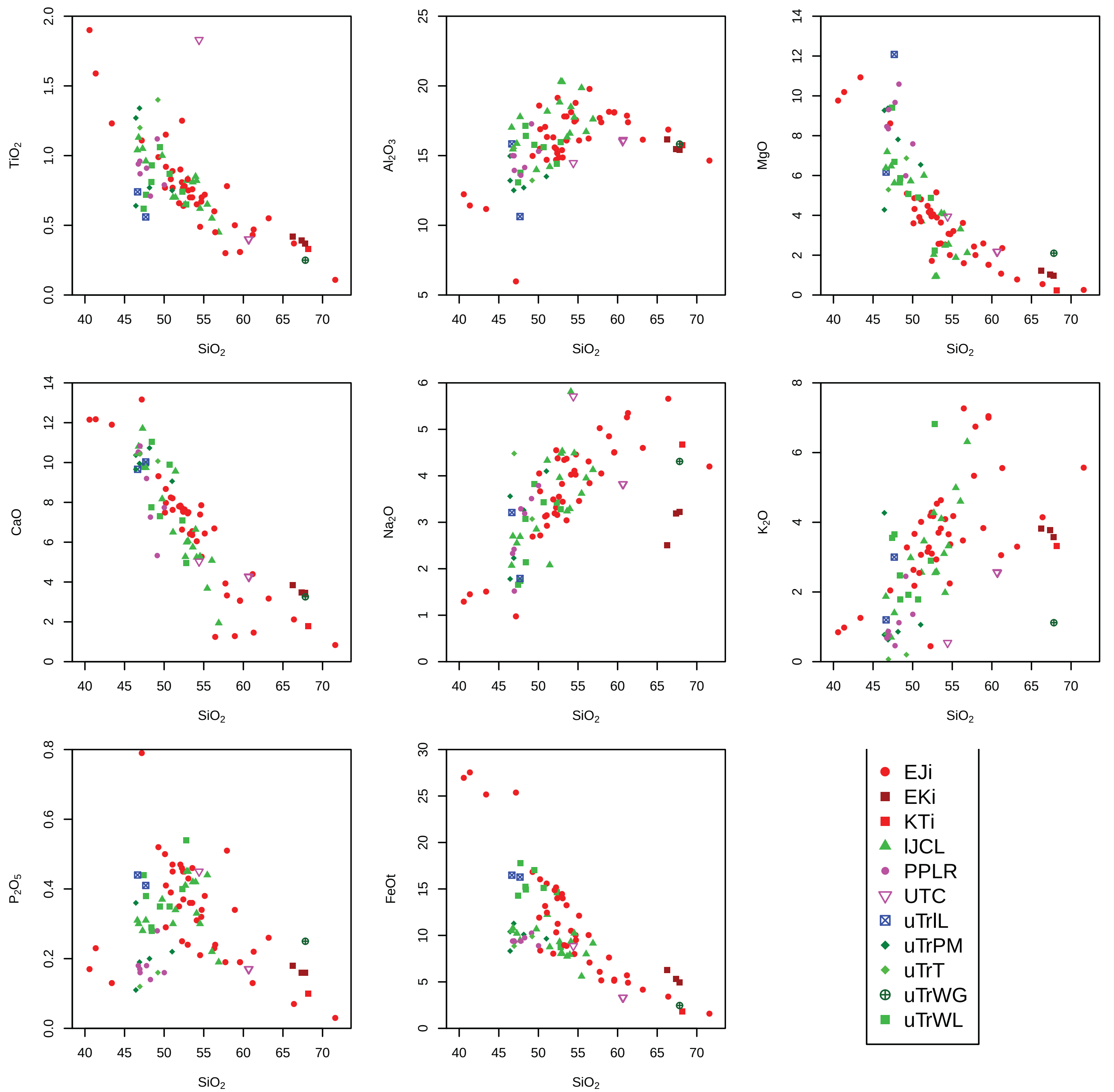


Figure 31: Harker Diagrams for the Nation Lakes Igneous rocks
Major oxides plotted against SiO_2, which serves as a fractionation index show compatible (MgO, FeO, CaO) and incompatible (Na_2O) behaviour. Acronyms in the legend are named in Fig. 28.

the early extraction of Mg, Fe, Ti and Ca into crystallizing minerals such as olivine, pyroxenes and titanomagnetite resulting in negative slopes on the corresponding diagrams. Incompatible elements such as K and Na show positive sloping trends while P and Al show more complex crystallization trends. Binary plots of P_2O_5 versus TiO_2 are useful for distinguishing different igneous suites within a region as in Figure 32 where rocks from the Lay Range (PPLR) Cretaceous granitoids (EKi) stand apart in tight clusters signifying different parental magmas.

Differentiating between potentially ore producing magmas and unproductive ones in volcanic arcs has been attempted by compositional discrimination based on theories around

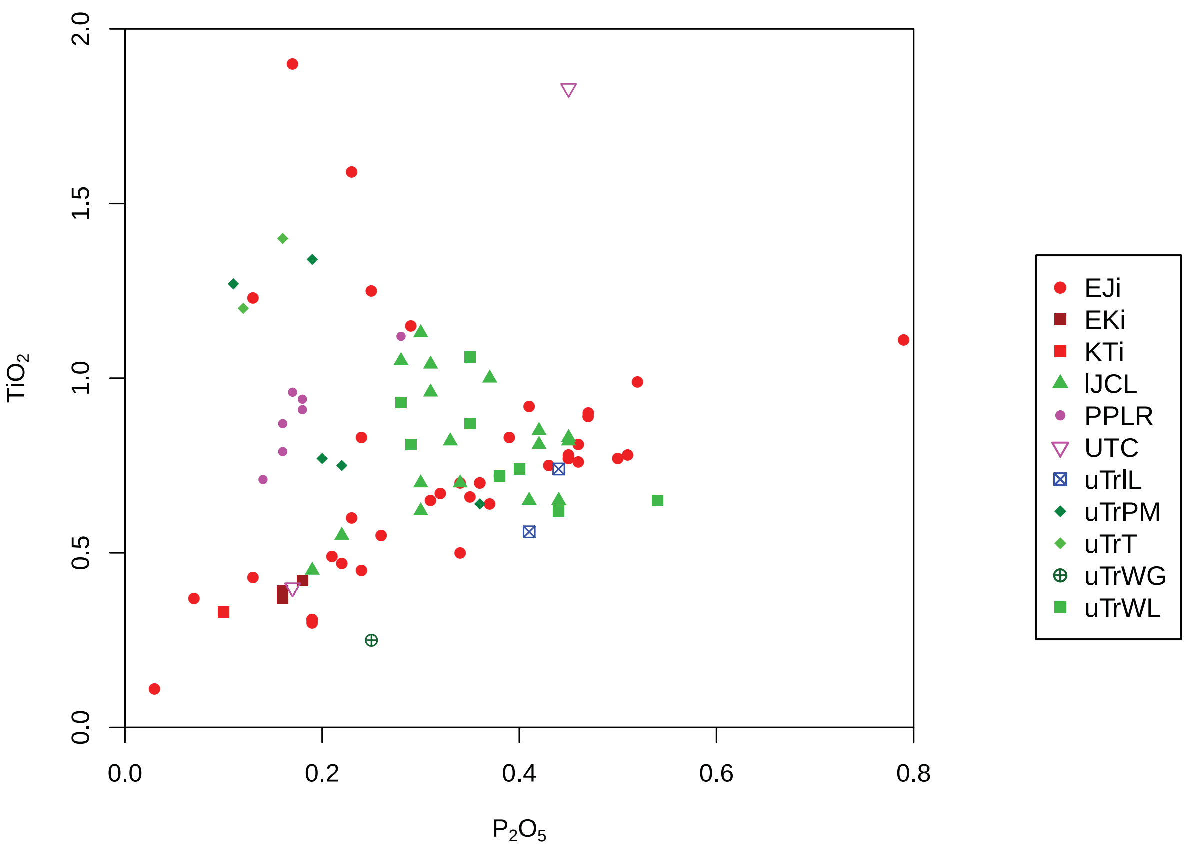
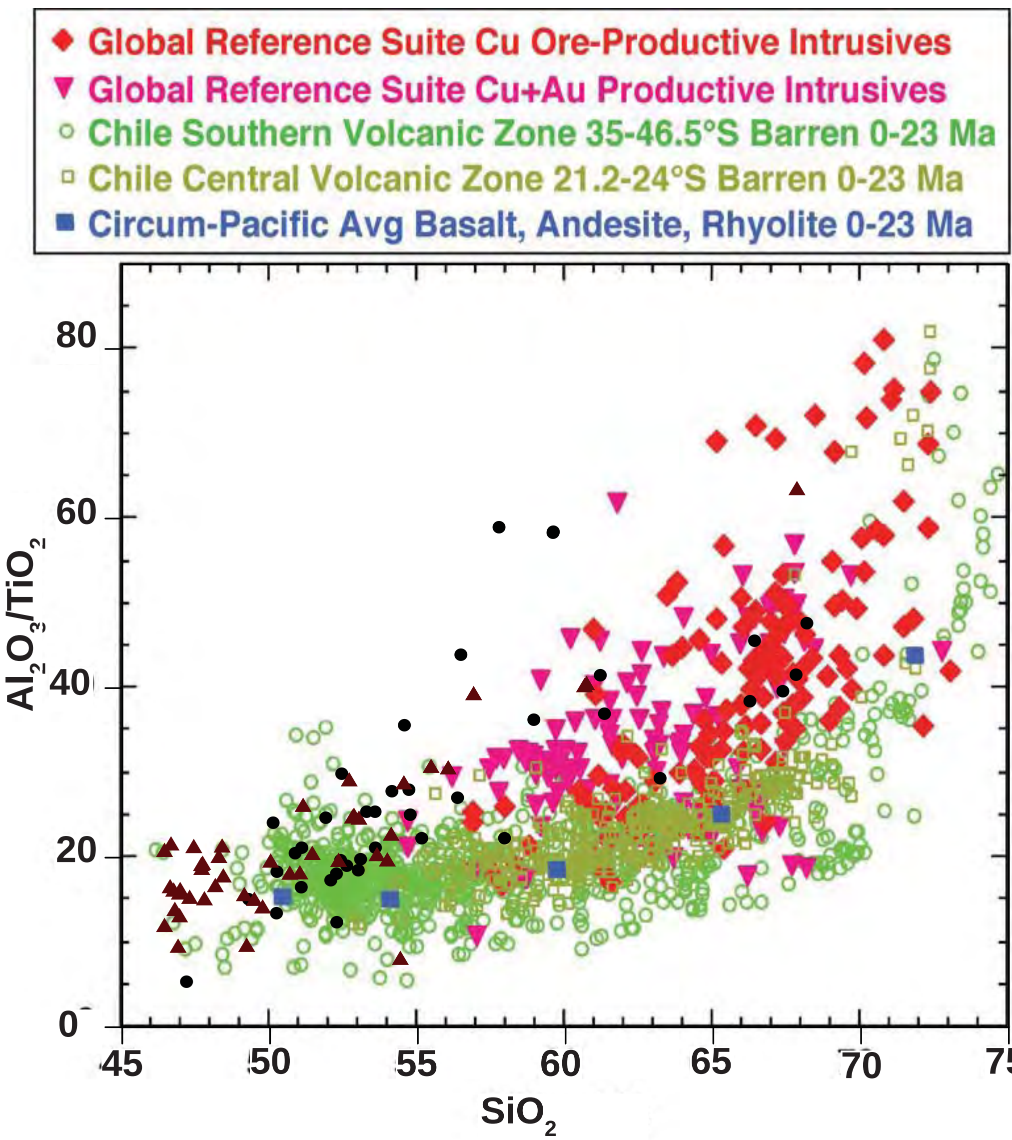


Figure 32: P_2O_5 - TiO_2 diagram for the Nation Lake Camp igneous rocks
This binary combination of a compatible HFS element, Titanium as TiO_2 and a less compatible element Phosphorus as P_2O_5) is useful for distinguishing different magmatic groups within a region. It ca be seen that the main trend of the intrusions aligns along a linear path and that geographically separate groups such as the PPLR (Permian Penn Lay Range) volcanics plot in a separate cluster indicative of a different parental magma.

crystallization processes. Loucks (2014) compiled a global reference suite of unaltered granitoid compositions associated with major porphyry copper and copper-gold ore deposits and compared them with barren granitoids from major volcanic arc segments. Hydrated magmas are postulated to be the most productive, but they cannot be identified readily by any direct analysis of volatile/H_2O content in the crystalline rocks. Instead various ratios that proxy for high volatile content are attempted. Loucks presented diagrams plotting the ratios of Al_2O_3/TiO_2, Sr/Y and V/Sc against the common fractionation index SiO_2 and found that the field of productive magmas were distinguishable. The Al_2O_3/TiO_2 vs SiO_2 diagram of Loucks (2014) is shown in Figure 33 overlaid by compositional points for intrusions and volcanics of the Nation Lakes Camp. Many of the more evolved Jurassic intrusions plot well within the field of productive granitoids. This ratio diagram shows that the igneous differentiation trend leading to magmatic-hydrothermal Cu-ore-forming intrusions extends to compositions that are significantly more aluminous than the unproductive arc reference suites, and average volcanics of continent-margin arcs. Higher dissolved H_2O contents and/or higher total pressure tend to shift the relative positions of plagioclase and titanomagnetite and hornblende in the crystallization sequence of calc-alkaline magmas, diminishing plagioclase production and advancing hornblende production at the expense of plagioclase, because hornblende consumes plagioclase-forming components of the melt. These relations cause initially tholeiitic, mantle-derived basaltic magmas to differentiate by crystal-liquid segregation along a more strongly calc-alkalic differentiation trend, which corresponds to a trend of more strongly increasing Al_2O_3/TiO_2 in the melt as magmatic differentiation proceeds. In potassic magmas, hornblende crystallization is delayed for the same hydration levels because of the effect of high K_2O on hornblende, which is replaced in the sequence by augite, biotite and titanomagnetite. Copper-ore-forming arc magmas are the most extreme representatives of the calc-alkalic differentiation trend, which as explained above is a variation on the trend for shoshonitic or alkalic magmas.

Another ratio diagram utilized by Loucks (2014) is Sr/Y vs SiO_2 which also shows evolution by differentiation to higher ratios of Sr/Y for productive than unproductive or less hydrated magmas (Fig. 34). Again several points from the Nation Lakes suite plot within the fertile granitoid field although several also plot at low ratios.

Another interesting diagram by Loucks plots the ratio of V/Sc against SiO_2 and again shows a significant increase in the ratio with advanced differentiation for productive/hydrated granitoids compared to barren ones. However, Loucks (2014) cautions that for potassic magmas these relations are not perceived because of the early crystallization of titanomagnetite which incorporates vanadium readily in contrast to the case in calc-alkaline magmas where



Red symbols are least-altered samples of intrusions parental to major copper (molybdenum) ore deposits; inverted pink triangles are least-altered samples of intrusions that exsolved hydrothermal fluids that produced major gold-rich porphyry and high-sulfidation and skarn deposits of Phanerozoic age worldwide. These ore-forming suites are compared with all available analyses of volcanic and hypabyssal intrusions in two latitude intervals of the Chilean Andes that lack known significant copper ore deposits in the 23–0 Ma time frame. Blue squares represent average continental-margin arc basalt, basaltic - andesite, andesite, dacite and rhyolite from compilations for Neogene and Quaternary suites from the Andes, southern Alaska, Kamchatka, Japan, Ryukyu arc, Sunda arc and New Guinea. The data have been compiled from many published sources.

Figure 33: Al_2O_3/TiO_2 vs SiO_2 diagram for productive and barren intrusives
The base diagram from Loucks (2014) is overlaid by points from the Nation Lakes Camp shown as black circles for intrusions and dark red triangles for volcanics.

it is incompatible in hornblende and thus accumulates in the melt resulting in higher V/Sc with increasing differentiation. Titanomagnetite is part of the assemblage, along with biotite and augite, that is favoured resulting from the suppression of hornblende crystallization reaction by high K_2O in the melt, a primary distinguishing factor in shoshonitic magmas. Also owing to suppressed hornblende crystallization by elevated K_2O content in the melt, highly potassic-alkalic arc magmas characteristically have undepleted yttrium in addition to the magnetite-induced vanadium depletion as seen in some of the points from the Nation Lakes in Figure 34. Consequently, in strongly potassic magma series, the V/Sc ratio evolves to low values with increasing SiO_2, just as in tholeiitic magmas that are too H_2O poor to crystallize early and abundant hornblende. Unfortunately, the data set from Nelson and Bellefontaine did not contain Sc analyses. Five complete whole analyses from the current Cirrus exploration program

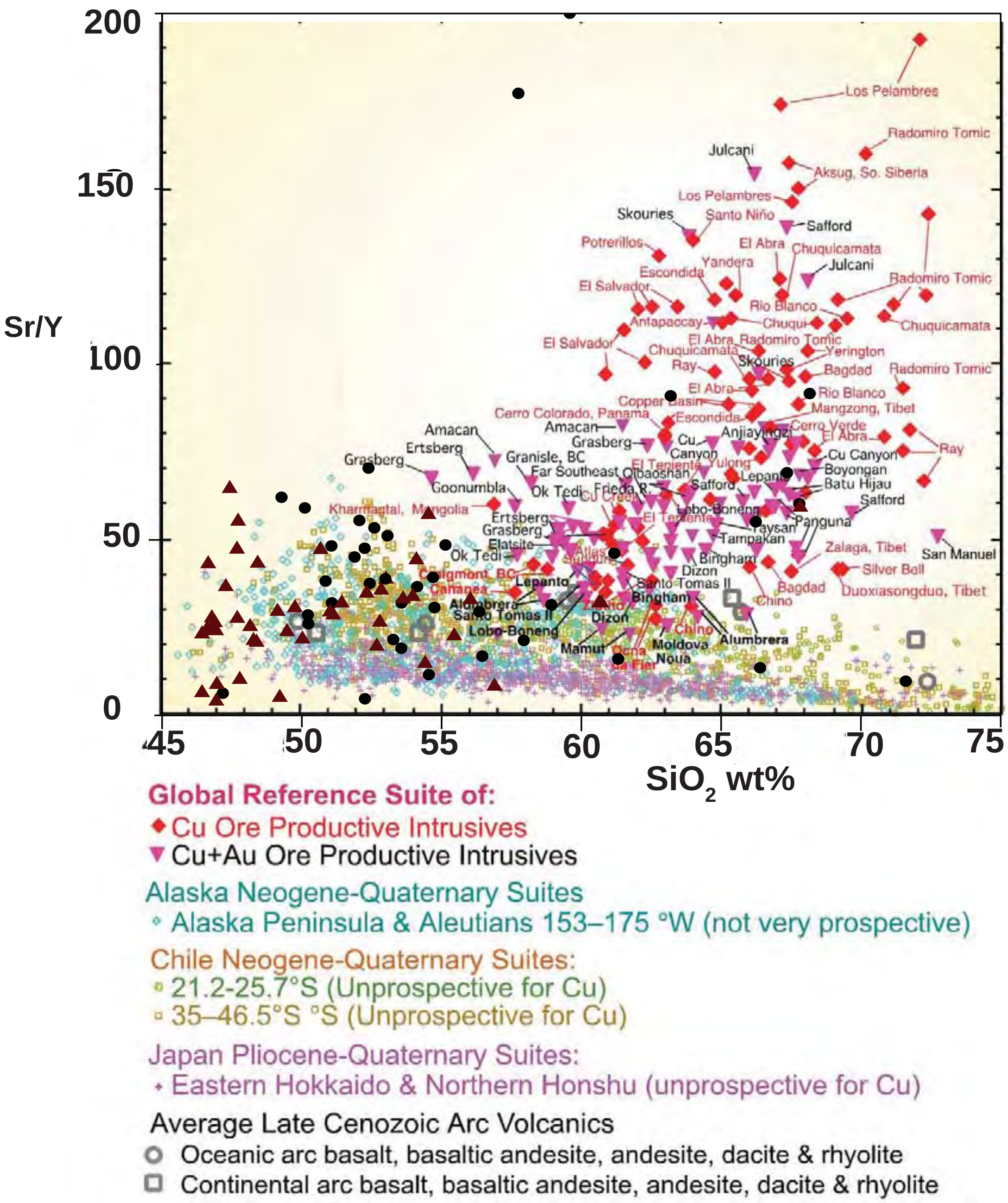


Figure 34: Sr/Y vs SiO_2 for global reference suite and Nation Lakes granitoids
The base diagram is from Loucks (2014). Points from the Nations Lakes suite are plotted in black for intrusions and brown triangles for volcanics.

were available, but all are in a narrow range of low SiO_2 outside the range of comparison for the fertile granitoids.

7.5 Structure and Metamorphism

Metamorphic grades throughout the project area relatively low generally attaining only prehnite-pumpellyite facies, but locally ranging up to greenschist facies. Minerals typical of low grade in the area viewed away from mineralization are epidote, chlorite, albite, carbonate and minor or rare pumpellyite and prehnite. Plagioclase phenocrysts appear relatively fresh with twinning visible and only a minor amount of sericitic alteration and albite (Nelson and Bellefontaine, 1996). At greenschist grade actinolite replaces or overgrows augite. Contact metamorphism is present as flinty hornfels of submicroscopic biotite turning the rock brown or lavender or at higher grades near big intrusions, as a coarse grained hornfels of biotite and actinolite, as well as small domains of epidote and garnet. The north shore of Chuchi Lake has an occurrence of hornfels related to the Hogem Batholith that passes outwards into pristine prehnite-pumpellyite facies volcanic.

Penetrative fabrics are rare and most evidence of structural deformation is localized along discrete planar structures as breccias, fractures zones and fault gouge. The gentle attitudes of regional bedding, where not disturbed by later high-angle faults, are displayed clearly north Chuchi Lake. Excellent exposures on, and east side of, ‘Adade Yus Mountain (Nelson and Bellefontaine, 1996) show the general attitudes of regional bedding and the often strongly discordant orientations of individual beds within them. There the Chuchi Lake succession volcanics generally dip to the south at 15º, in contrast to highly disrupted thin-bedded sandstone and shale of the sedimentary marker which display steep dips and tight folds. East of Valleau Creek, the basal contact of the Witch Lake succession is nearly horizontal, but bedding and foliation in the Inzana Lake tuffs and slates are very steep to vertical. The only major fold in the area involves the Chuchi Lake, Witch Lake and Inzana Lake successions south of Chuchi Lake. They are folded into gently northwest- plunging, upright open anticline with Inzana Lake sediments in its core and on the west limb, where they interfinger with Witch Lake basalts.

A marked structural break coincides with the southern tail of the Hogem batholith under Chuchi Lake (Fig. 24). South of the lake, interfingering Witch Lake and Inzana Lake successions strike northeast and dip gently to moderately northwest forming the hinge of a very gentle northwest trending regional anticline. This fold is apparently truncated under Chuchi Lake suggesting the presence of a fault. The fault is inferred to have formed at a point of structural weakness along the plunge depression of the anticline. The open nature of the fold and the gentle dips of bedding on both sides of Chuchi Lake, suggest that the fold opens further to the north and loses its identity. Movement on the Chuchi Lake fault probably predated emplacement of the Hogem intrusive complex, since it does not offset the strong magnetic anomaly associated with the monzonite. Instead, the fault may have acted as a guide, deflecting the southern end of the batholith to the east. The east-trending magnetic signature of the batholith continues in the subsurface as shown by the Geoscience BC and GSC magnetometer and gravity data (Fig. 21). The two satellite bodies of coarse-grained monzonite on the south side of Chuchi Lake represent culminations on the undulating top of the buried batholith.

Other possible early faults include east-northeasterly trending fault along Klawdetelle Creek and a northerly striking fault on the BP-Chuchi property that terminates against the Klawdetelle fault. Both of these structures offset the sedimentary marker unit in the Chuchi Lake succession. On the BP Chuchi property the sedimentary marker is comparatively thick and contains lapilli and crystal tuffs, full of intrusive material, derived from a local source. This local anomalous facies may reflect fault control. The Klawdetelle fault seems also seems to have exerted control over the northwestern margin of the Chuchi syenite, a late phase of the Early Jurassic Hogem intrusive suite. Therefore this fault, like the Chuchi Lake fault was probably active between deposition of the Chuchi Lake succession and the latest Early Jurassic intrusions.

7.6 Mineralization in the Vicinity of the Property

In addition to the observations at various mineralized sites on the Property by Cirrus and the author in Item 9 Exploration (below), a summary of economic geology highlights is found in the descriptions of mineral showings and occurrences produced by BCGS geologists from assessment reports and geological surveys and are know in British Columbia as Minfile records. Minfiles are GIS-based and accessible online through the Mapplace website and by web links available in offline GIS files. There is a high concentration of Minfiles within the Property boundaries resulting from reports of mineralization, geophysical and geochemical anomalies and drill intersections. Much of the information in the Minfiles has been previously reviewed in the History section, but they are useful site specific records that augment both the historical chronology and results of exploration campaigns. Minfiles description below were gleaned from Nelson and Bellefontaine (1996) and the BC Geological Survey website, Mapplace. Locations of Minfiles are shown on Figure 35. The descriptions are focussed on geological details at the expense of immaterial property transactions that add no context to the showings' importance.

7.6.1 BP-Chuchi/Rio-Klaw Halo (Minfile 093N 159)

The BP Chuchi/Rio Klaw system is located 5 to 10 kilometers north of the Property on Figure 34 and labelled KLAW. It is an extensive intrusive complex and alteration halo that lies in an incised north-south pass south of Klawdetelle Creek. The centre of the system is on the former Phil claim block ca. 1985, which was bought by Digger Resources Inc. from Mark Rebagliati in 1986. BP Resources Canada Limited acquired an option from Digger Resources and drilled in 1989 to 1991 (Wong, 1990, Wong and Barrie, 1991). The northern extension on the Klaw claims was drilled by Rio Algom Exploration Inc. in 1990 and 1991 (Campbell, 1990a. 1991a,b). The alteration system is bounded to the east by a north-trending fault, and to the north by the fault along Klawdetelle Creek. Within it, biotite-bearing crowded plagioclase phyric monzonite stocks intrude the sedimentary horizon of the Chuchi Lake succession and branch out into sill-swarms (Wong and Barrie, 1991).

In many instances in drill core, hornfelsed sedimentary rocks show soft-sediment deformation, and are intimately intercalated with monzonite: this association is considered to indicate intrusion of the monzonites while the sediments were still unlithified (Wong and Barrie, 1991; Barrie, 1993) producing peperite textures. The fine-grained, well-bedded sandstones, siltstones and tuffs grade downwards into massive, coarse lapilli tuffs and agglomerates. Intrusive clasts form a large percentage of the fragmental material, from agglomerates to crystal tuffs. Crowded plagioclase porphyry clasts, with small blocky plagioclase crystals less than 2 mms across, are common and identical to the later porphyries that intrude the sediments. Clasts with pink secondary potassium feldspar, magnetite and epidote are also present. Sulphide-bearing porphyritic monzonite clasts occur clustered in heterolithic lapilli tuff in the Chuchi Lake succession north of Klawdetelle Creek. Grab samples from an area rich in rusty fragments yielded results up to 840 ppb gold and 224 ppm copper (Nelson and Bellefontaine, 1996).

Rapid volcanic - sedimentary facies changes have been interpreted over short distances between drill holes and exposed sections between Klawdetelle Creek, with mainly black argillites and a few kilometers south where drills cut fragmental-rich sedimentary sections. The sedimentary section is overlain by a suite of plagioclase-augite and augite-plagioclase-phyric flows and minor, thin crystal tuffs all of the same shoshonitic composition. A brecciated feldspar

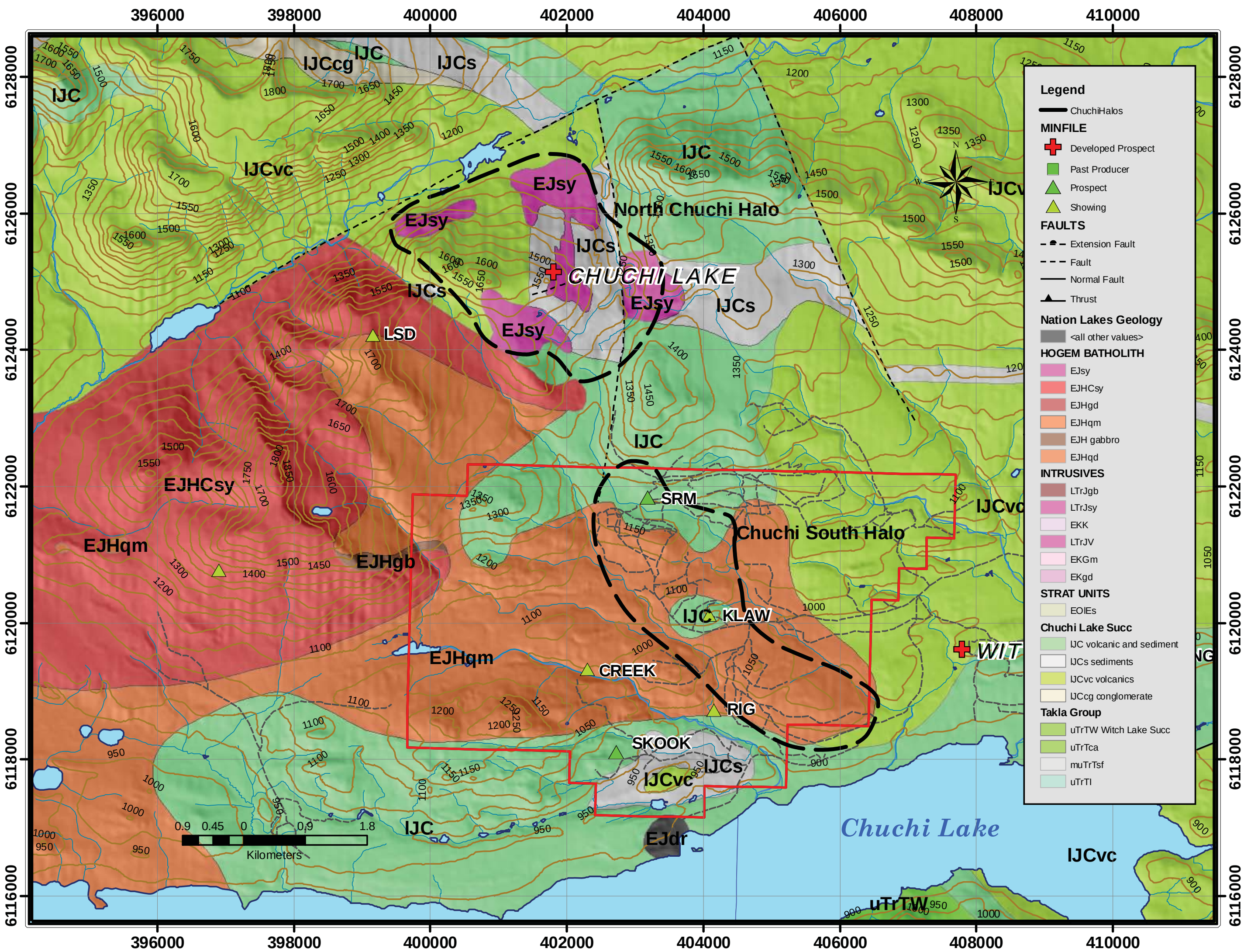


Figure 35: Alteration-Mineralization Haloes of the Chuchi Lake area
Dashed lines show the interpreted limit of combined alteration, chargeability anomalies, airborne magnetic highs and some geochemical signatures. Drilling within the North Chuchi Halo by BP has confirmed the presence of a significant copper- gold porphyry deposit system. Drilling within the Chuchi South Halo is considerably less extensive.
Geological information is from GIS files downloaded from BC Government websites. Map drawn by the author in ArcGIS 9.3, December, 2020.

megacrystic augite porphyry dyke cuts the crowded porphyry monzonite in a BP diamond drill hole and indicates a connection between the hypabyssal intrusions and sedimentation. Shallow plutonic rocks both occur as clasts in proximal sedimentary units and intrude them. Nelson and Bellefontaine interpreted this mixed relationship as evidence of intrusion before lithification similar to VMS environments where explosive breccia textures result from magmas intruding wet muds. The predominance of sills over dykes suggests that they were intruded before lithification was complete.

Both the monzonites and the sedimentary rocks at B.P. Chuchi are extensively altered. Secondary potassium feldspar occurs in pink veinlets in the monzonite with magnetite, pyrite and chalcopyrite. The sedimentary rocks show a strong biotite hornfels overprint, with subsequent mottling by potassic and propylitic alteration. Hairline veinlets with bleached alteration envelopes and magnetite veinlets and disseminations are also characteristic of alteration. The BP-Chuchi or North Chuchi Halo is shown in Figure 35, Maps of the geophysical and geochemical anomalies at the BP-Chuchi Halo are shown in Figures 61 to 63 along with a table of significant drill intersections (Table 3) from the BP Resources exploration programs between 1989 and 1991 in Item 13: Adjacent Properties.

7.6.2 Skook Halo (Minfiles 093 - 140, 208, 209: on the Property)

The Skook alteration system contains several small showings and occurs primarily within the sedimentary unit of the Chuchi Lake succession near its contact with the Hogem intrusive suite. The CL-l1 zone is the area of most intense alteration and highest density of crowded feldspar porphyritic monzonite intrusions. It is exposed in an east-trending gully in a logging cut. The sediments are bleached and hornfelsed: alteration minerals include potassium feldspar, chlorite-sericite, epidote, biotite, calcite and minor tourmaline (Campbell, 1988). These rocks contain disseminated pyrite, pyrrhotite, and minor chalcopyrite and bornite. White weathering siliceous tuffs with limy nodules have weak skarn or lower greenschist mineral assemblage including garnet and chlorite. A polymetallic quartz vein contains sphalerite, galena and chalcopyrite. The best assay results on grab samples from this locality are 13.4 g/t gold, 16.6 g/t silver, and 2.3% zinc (Campbell, 1988). Interpretations of some of the mineralization suggest a epithermal vein system near the Takla-Hogem contact.

7.6.3 Col Halo (Minfile 093N 101)

The Col occurrence (Fig. 19) was found about 1969 and is located 5 kilometres north of the west end of Chuchi Lake and 1 kilometre east of the Klawli River within alkaline intrusive rocks near the contact with volcanic flows of the Lower Jurassic Chuchi Lake Succession. Medium to coarse grained hornblende monzonite and lesser pink, fine to medium-grained syenite with aplite and pegmatite are the main intrusive phases. Copper mineralization, including chalcopyrite, bornite and malachite, is concentrated along steep, 140°-trending parallel fractures, surrounded by envelopes of salmon pink potassium feldspar-rich alteration 1 to 4 cm thick. These zones may also contain quartz, minor magnetite, and hairline seams of tremolite/actinolite and chlorite. Some outcrops are so heavily striped with alteration zones that they take on a gneissic appearance. Although some of the zones appear to be late magmatic syenitic dykes, most appear to be the result of metasomatic alteration of the monzonite. A later crosscutting set of steep fractures strikes 050º, but contains only minor mineralization. A trench on the Col showings averaged 2.2 g/t gold and 3.16% copper over a 4-metre interval (Nebocat and Rotherham, 1988).

Numerous exploration programs ensued during the 1970s and 80s involving Falconbridge, Kookaburra Gold, Asarco, Nation River, Solomon and others. Sporadic programs concentrated in the late 80s totalled 1700 soil samples, 45 line kilometers of IP, 1258 kilometers of airborne magnetometer surveys, over 4700 meters of diamond drilling and 490 meters of trenching along with much rock assaying. A few attempts were made to publish resource calculations, but they were not adequately documented and at least one was considered to be flawed.

Garnett (1978) reports a potassium-argon biotite age of 179 ±5 Ma from medium grained monzonite sampled from drill core on the Col property. This comparatively young age may reflect resetting by the late-stage Chuchi syenite, of which the syenite dykes are likely offshoots.

7.6.4 Chuchi Halo (Minfile 093N 104, SRM)

The SRM (Klaw) occurrence covers several small mineral showings straddling the contact between green and maroon augite plagioclase porphyritic flows and agglomerates of the Lower Jurassic Chuchi Lake Succession and Early Jurassic intrusive rocks of the Hogem Intrusive Complex. The showings include sparse, fracture-controlled chalcopyrite with pink orthoclase, epidote and magnetite, as well as barren orthoclase veins and zones of disseminated iron sulphides. Scattered blebs of chalcopyrite are also present in flows of the Chuchi Lake succession near the margin of the intrusive suite, and chalcedonic quartz breccia veins and small swarms of quartz veinlets contain minor chalcopyrite. The vein swarms have an average width of 4 metres and strike 110 to 115 degrees. These sparse showings are grouped into the Chuchi alteration halo, (see Figure 35) a weak zone with some resemblance to the Col, which similarly lies near the contact between the Hogem intrusive suite and the Takla Group volcanics.

7.6.5 Wit (Minfile 093N 141)

The Wit prospect is located a few kilometers east of the Property and 1.4 kilometres north of the north shore of Chuchi Lake (Fig. 35) within Chuchi Lake Succession subaerial volcanics. The main showing is an irregular epithermal vein (5 metres wide by 20 metres vertical) of banded white and grey quartz and chalcedony that is exposed in and around a trench. Results of two drill holes in 1991 (Barnes et al., 1991) indicate that the vein system dips almost vertically and has a true width of 31 metres. The vein hosts small pods and disseminations of galena and sphalerite with possible argentite and tetrahedrite. The surface showing has been interpreted as the top of a larger epithermal system, and drilling by BP in 1991 discounted theories that the mineralization was the top of a porphyry system. Barite lenses and stockworks as well as strongly oxidized and limonitic zones have also been documented.

One drill intersection measured by Barnes et al. (1991) at 22 to 24 m in hole SK91-09 yielded 2.5 % Zn and 0.9 % Pb. Another 2-metre section in SK91-10 at 70 - 72 m analysed 0.5 % Zn, 0.15 % Pb and 97 g/t Ag. Gold values from the 1991 program were low, mostly between 0.2 and 0.6 g/t, except for one value of 1.3 g/t over 2 metres in SK91-10.

The host rocks are maroon and green matrix-supported polymictic breccias and lahars of the Chuchi Lake succession. The volcanics are in places scoriaceous and amygdaloidal and have calcite, albite and celadonite vesicle infillings. Sulphides are also found disseminated in the hostrocks and in fracture fillings. A syenite dyke, 9 metres thick, intrudes the volcanics.

The Wit showings (093N 141) were discovered in 1964 and subsequently explored by Vanmetals Exploration, Noranda, Royal Canadian Ventures, and Nation River Resources who did geological mapping, soil surveys, IP surveys and trenching. In 1994 a nineteen trench excavator program resulted in the discovery of high grade zinc, lead, silver in a brecciated matrix of barite and galena including: 12.14% combined lead-zinc, 31.8 g/t Ag and 0.69 g/t Au across 5 metres in the nineteenth trench (Nelson and Bellefontaine, 1996). The surface showing seems to be the top of a larger epithermal system. The best assays that were obtained from the trenched area on the surface contained 10.5% zinc. 1.87% lead and 148 g/t silver. Barite lenses and stockworks as well as strongly oxidized and limonitic zones have also been documented by previous workers on the property

7.6.6 Witch Halo (Minfile 093N 084) Moss Showing

The broad Witch alteration halo, located between Chuchi and Witch Lakes (Fig. 6, 20), covers an area of 3 by 5 kilometres. It was explored by Rio Algom Exploration Inc. (Campbell, A.E., 1990; Campbell and Donaldson, 1991). Volcanic rocks of the Witch Lake succession including augite phyric flows and fragmentals, aphanitic volcanics and minor tuffs, host the alteration system. Biotite hornfelsing is widespread, overprinted by patchy potassic and propylitic alteration. Pyrrhotite, pyrite and minor and chalcopyrite occur throughout the area. Secondary magnetite is locally abundant. Skarn occurs in several areas at the expense of limy tuffaceous sediments. Skarn minerals include epidote, garnet and diopside. In one thin section, diopside skarn is overprinted by secondary potassium feldspar. In comparison to the B.P.-Chuchi Rio-Klaw halo, the volume of exposed hypabyssal intrusive rock is very small.

Crowded plagioclase porphyritic monzonite forms many scattered stocks and dykes, with associated, more widespread intrusive breccias. The breccias are easily confused with surface fragmentals, except that they are more disorderly and the clasts are entirely intrusive. Their matrix is composed of fine fragmental material and alteration minerals.- They compare with the intrusive breccias on the BP Chuchi/Rio-Klaw properties. This region is also intruded by several phases of the Hogem intrusive suite including coarse-grained equigranular monzonite, sericite-bearing potassium feldspar pegmatite and coarse-grained syenite. The best-developed surface mineralization on the property is at the Moss showing. It consists of minor fracture coatings and blebs of chalcopyrite associated with abundant pyrite and pyrrhotite in a gossanous host (Campbell and Donaldson, 1991). Propylitic, potassic and carbonate alteration are so intense within this zone that original lithologies are not distinguishable in outcrop or thin section.

Trench sampling has outlined a zone grading 1.6 g/t Au and 0.12 % Cu over 56 metres east-west in one trench, and 1.1 g/t Au and 0.016 % Cu over 34 metres north-south in another (Campbell and Donaldson, 1991). Nine diamond-drill holes were drilled in 1991 in and around the Moss prospect. The best intersection obtained was 0.064 g/t Au and 0.035 % Cu. Drilling beneath and adjacent to the mineralized trenches encountered only anomalous gold and copper grades.

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8. Deposit Types

8.1 Alkalic copper-gold porphyry deposits

The alkalic / shoshonitic lithogeochemistry of the upper Triassic and lower Jurassic volcanic strata and coeval intrusive, plutonic rocks is a distinctive and dominant feature of the geology of the Nation Lakes Porphyry Camp. The forms and styles of copper and gold sulphide mineralization, morphology and proximity of porphyritic igneous intrusions, related alteration assemblages, and geophysical patterns regionally and locally around prospective mineralized zones indicates the presence of porphyry copper-gold mineralization typical of alkaline porphyry copper-gold deposits found elsewhere in Quesnellia, such as the Copper Mountain, Afton, Mount Polly and the nearby Mt. Milligan deposits. These large multi-million tonne deposits are readily amenable to low cost, bulk tonnage, open pit mining methods (Fitzgerald et al., 2020).

The most salient example of this deposit type is located 35 kilometres to the south west of the Chuchi South Property where a cluster of porphyry copper-gold deposits is referred to as the Mt. Milligan deposits (Fig. 20 and 36). The Mt. Milligan property is underlain by volcanic rocks of the Witch Lake Succession of the Takla Group (Nelson and Bellefontaine, 1996). The shoshonitic mafic and intermediate volcanic rocks are intruded by coeval plutons of the Mount Milligan intrusive complex which consists predominantly of monzonite with minor diorite/monzodiorite and gabbro/monzogabbro that are compositionally identical to the volcanics.

8.2 Geology of the Mount Milligan Copper-Gold Porphyry Deposit

At Mount Milligan, the main stocks that host the copper-gold mineralization are magnetite phyric, crowded plagioclase porphyry monzonites (Rebagliati, 2005; Nelson and Bellefontaine 1996) (Fig. 36) named the MBX, Southern Star, Goldmark and North Slope stocks. The Mt. Milligan Main deposit occurs within the MBX stock and in the adjacent latitic, andesitic to high-potassium basaltic, and trachytic volcanic rocks of the Witch Lake Succession. It comprises the Magnetite Breccia (MBX) zone, the 66 zone, the West Breccia (WBX) zone and the Deep West Breccia (DWBX) zone. The Southern Star deposit occurs within the Southern Star stock and adjacent andesitic to high-potassium basaltic volcanic rocks of the Witch Lake Succession.

The MBX stock (400 m diameter) and the Southern Star stock (800 m by 300 m) are small biotite-and quartz-bearing crowded porphyritic monzonite that are later phases within the Heidi Lake intrusive suite of small plutons scattered east of Heidi Lake to the Great Eastern Fault. The suite includes hornblende sphene-bearing, quartz-and biotite-free monzonites, and orthoclase-megacrystic monzonites to syenites are post-ore. The MBX and Southern Star stocks both plunge moderately west intruding NE dipping Witch Lake pyroclastic and epiclastic strata, all of augite phyric basalt derivation. Primary potassium feldspar occurs as sanidine in a very fine grained groundmass around unaltered phenocrysts. Within the deposit area the Witch Lake basalts are described as latites and trachytes and are commonly potassically altered. The potassium feldspar in them is of secondary origin in fractures and amygdules and tiny patches in primary augite (replaced early in the alteration sequence by pseudomorphic actinolite) and plagioclase phenocrysts. In the laminated epiclastic siltstone and greywacke. secondary potassium feldspar forms clumps and lenses along bedding planes, accompanied by pyrite and epidote (Nelson and Bellefontaine, 1996).

Copper and gold mineralization is associated mainly with the potassic alteration, except in the 66 zone where gold-rich copper-poor mineralization is associated with propylitic alteration. Sericitic alteration, affecting plagioclase phenocrysts in the stocks and related dykes, overprints

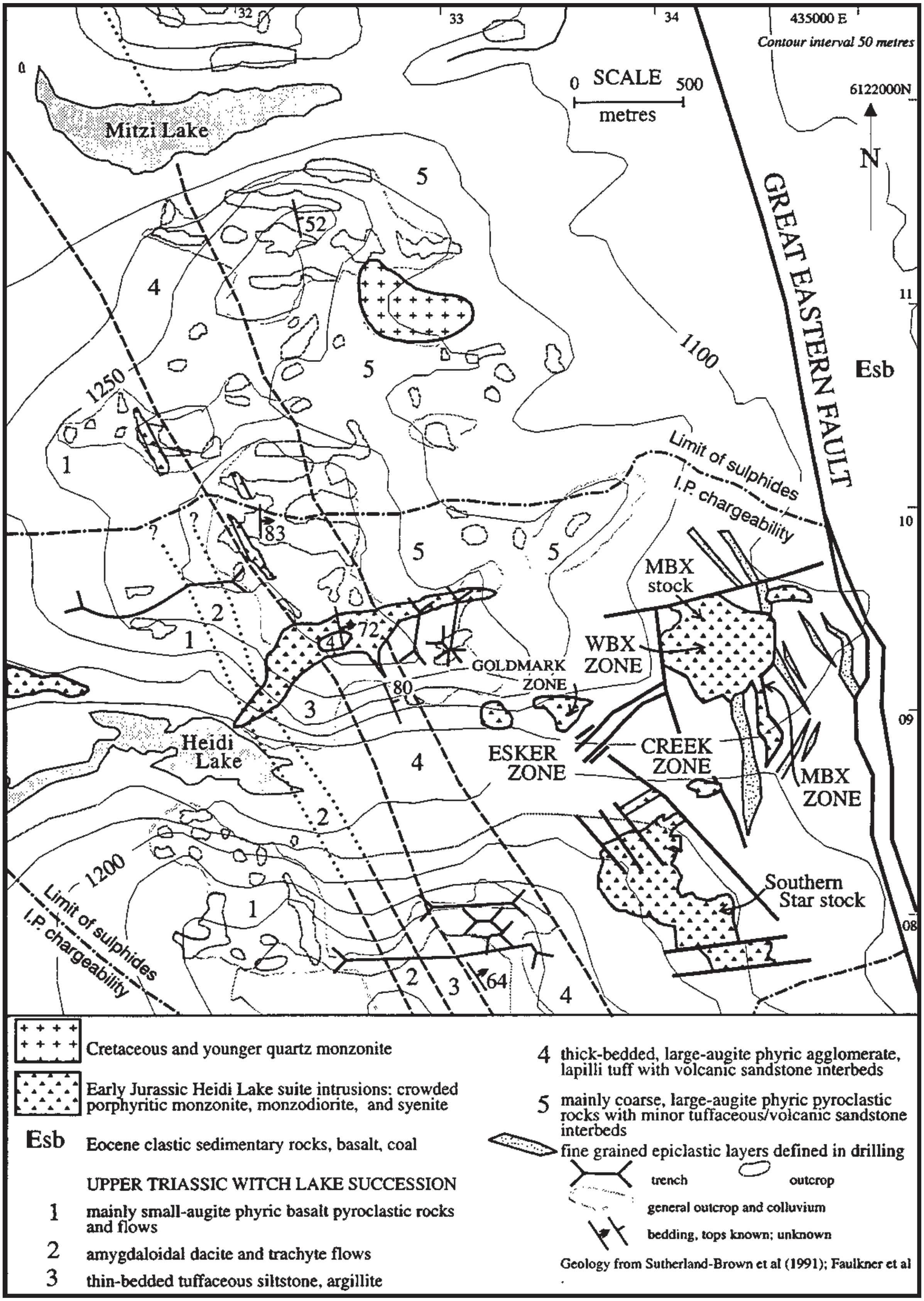


Figure 36: Geological Map of the Mount Milligan Mine district

The map shows the small scale of the MBX and Southern Star stocks related to the mineralized bodies at the MBX, Esker, Creek, and WBX zones. Note the limit of the chargeability anomaly around the area. The map area is about 32 kilometers SE of the Chuchi South Property. (Map from Fig. 26 in Nelson and Bellefontaine (1996).)

the potassic alteration. Potassic alteration is most intense in the contact zones of the MBX and Southern Star stocks where it was probably focused by magmatic hydrothermal breccias and indicated better by the presence (in addition to secondary potassium feldspar) of hydrothermal biotite, bornite, chalcopyrite, and magnetite (DeLong et al., 1991). Propylitic alteration occurs as a widespread zone that is peripheral to, but locally cross-cuts, and sometimes overlaps potassically altered rocks. It is characterized by epidote, with varying amounts of albite, calcite, chlorite and pyrite (DeLong et al., 1991) and is developed best in andesitic and latitic volcanic rocks. Propylitization extends up to 2 km from the monzonite stocks.

Copper-gold mineralization forms a central core around the MBX and Southern Star stocks, whereas gold-only, or copper-poor, mineralization characterizes the outer portion of the Mt. Milligan system. Gold-copper mineralization correlates with intense potassic alteration, except for gold-pyrite with propylitic and minor albitic alteration in the 66 zone (Sketchley et al., 1995). The copper-to-gold ratio is highest in the Southern Star stock. Mineral assemblages are simple: chalcopyrite, pyrite, magnetite and minor bornite. The gold-rich 66 zone developed by bedding-parallel infiltration and replacement of volcanic sediments and andesite of the Witch Lake succession above and spreading away from the MBX stock. Sporadic supergene alteration is also recognized in the MBX and WBX zones (Rebagliati, 2005).

Polymetallic veins are widely distributed in volcanic rocks around the entire periphery of the Mt. Milligan deposits and cross-cut previously developed propylitic alteration. They contain mostly pyrite with lesser chalcopyrite, sphalerite, galena, molybdenite, arsenopyrite, tetrahedrite-tennantite and gold, and a minor amounts of quartz, K-feldspar and carbonate gangue.

The original configuration of the deposits can be inferred by rotating the NE dipping Witch Lake stratigraphic section to horizontal, which reveals the MBX and Southern Star stocks as upwards flaring pipes with laccolithic offshoots into surrounding strata(Nelson and Bellefontaine, 1996). Phreatomagmatic breccias may have been triggered by and overprinted cone sheet fractures around the pipes.

Important principles for exploration for this type of deposit in the region that were gleaned from the discovery of Mount Milligan are: 1. The small size of the monzonite intrusions hosting the copper gold sulphide deposits (about 400 m in diameter); 2. The crowded plagioclase porphyry texture of the host rocks; 3. The displacement and masking of geochemical signatures by glacial dispersion from mineralized outcrops, subsequent covering by unrelated surficial material and and hydromorphic dispersion from transported and in place mineralized rock; 4. The geophysical signature of nearly coincident IP chargeability and magnetic anomalies and; 5 Shoshonitic lithogeochemistry of potential host rocks and related volcanics.

The discovery by drilling of the MBX zone in 1967 was famously targeted on a geochemical anomaly, and coincident magnetic and IP anomalies, in an area where the soil geochemistry was considered to be at high risk of being transported. Geochemical exploration programs should include detailed surficial geology to classify the material in which anomalies are found and predict the how geochemical anomalies from buried mineralization can be dispersed, or transported. Figure 37 from Blaine and Hart (2012) shows the surficial geology of the Mount Milligan deposit area and the results of B Horizon soil geochemistry for copper. Heberlein (2010) did extensive studies on the effectiveness of different geochemical extractions and soil horizons and Mount Milligan and concluded that deep overburden and soil profile disturbance greatly diminished the response of most methods. Figure 37 shows 5 types of non-insitu geochemical expressions; glacial dispersion of mineralized material in tills, downslope colluvial erosion of mineralization or mineralized glacial till, an anomaly from the peripheral halo of the deposit, hydromorphic dispersion by groundwater directly from mineralization or perhaps

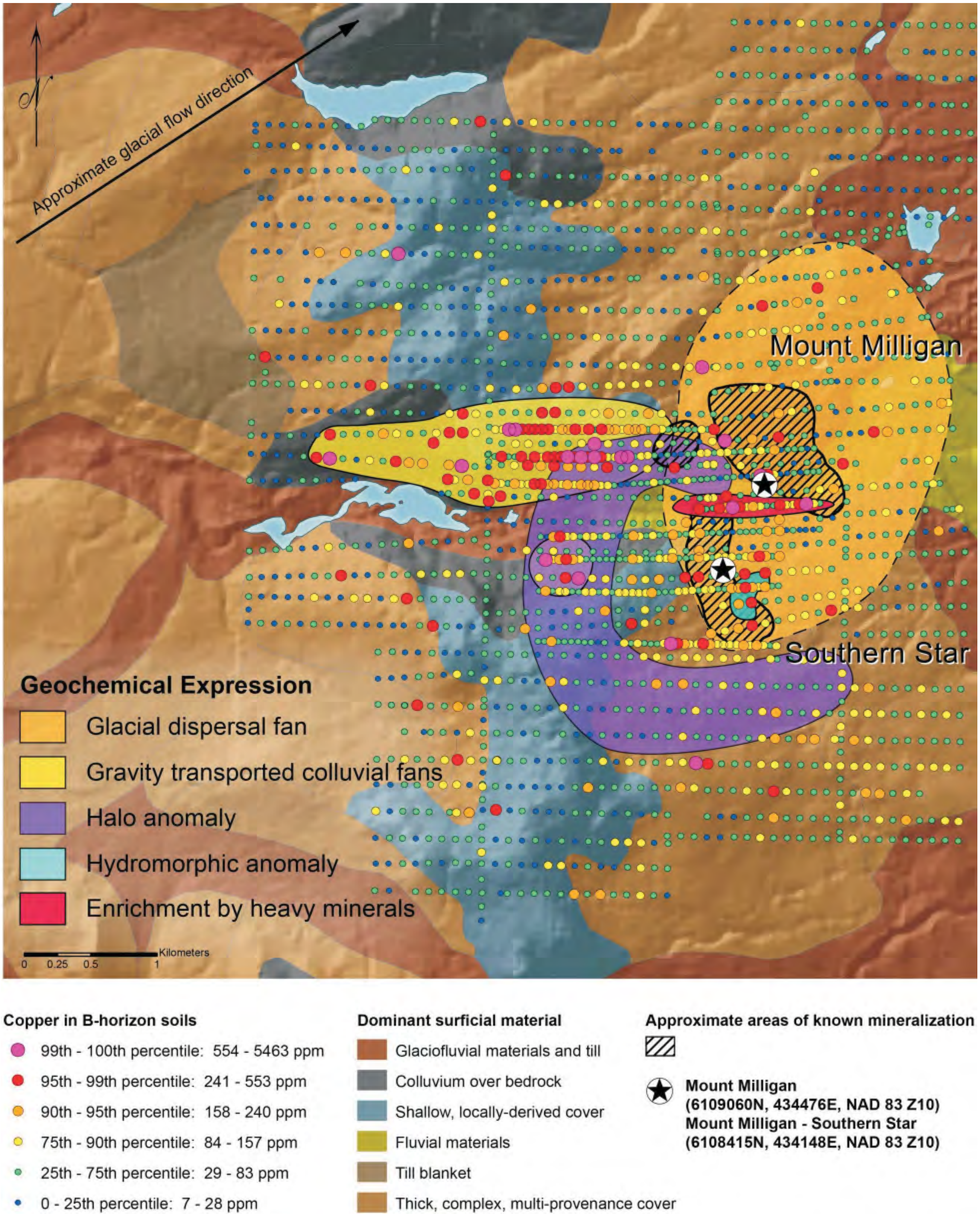


Figure 37: Copper distribution in B-horizon soils at the Mount Milligan porphyry deposit
The map illustrates the high dependence of the distribution of geochemically anomalous soils relative to the discovered deposits (hashed areas) on glacial dispersion and subsequent surficial processes.
Map is Figure 3 in Blaine and Hart (2012); Geoscience BC Report 2012-1

transported mineralization in till or colluvium and enrichment of the soils by heavy minerals.

Geophysical programs at a minimum need detailed airborne magnetometer survey maps of total magnetic intensity (TMI) and the first derivative of the TMI and Induced Polarization surveys over magnetic highs and their periphery. Magnetic anomalies may reflect both primary magnetite in monzonites and monzodiorite and secondary magnetite usual in potassically altered rocks. IP chargeabilty anomalies have to be prioritized by the resistivity of the rocks to differentiate natural formational anomalies in conductive sediments from ones in fractured, mineralized igneous rock.

The intrusions and coeval volcanics have distinctive crowded plagioclase phenocryst textures, may be augite phyric and have high K_2O/Na_2O ratios above 1 indicative of shoshonitic magmas. The actual size of the intrusive body responsible for the mineralization may be small and represent a late stage high level pluton derived by differentiation from a larger and deep pluton. Ascent to shallow levels of the small plutons may have been facilitated by structural channeling such as syn-volcanic faults. Diatreme structures and breccias may be present reflecting the shallow level of intrusion and volatile rich magma.

9. Exploration

9.1 Introduction

Two exploration programs were conducted on the Chuchi South Property on behalf of and for Cirrus in 2020. In September from the 5th to the 10th Drs. T.N. Setterfield and K. Bjorkman, both exploration geologists, and property owner Ronald Bilquist, professional prospector, mapped and sampled various parts of the Property. The author arrived on September 8th and was guided to two sites in the Property on the 9th where he examined the geology and collected 7 check samples of mineralization. The work for Cirrus resulted in the collection and chemical analysis of 47 grab sample plus blanks for a suite of elements plus gold. Five of the rocks were additionally analyzed by whole rock methods for major elements and REEs. Eleven rocks collected additionally from other sites were sectioned and examined petrographically under contract to Craig Leitch Ph.D. The geochemical data is reviewed below.

In October, the company contracted Peter E. Walcott and Associates Limited (“Walcott”) to complete an airborne magnetometer survey of the entire Property and produce contour maps of the magnetic field and first vertical derivative. The data and preliminary interpretation are shown below.

The program was directed by Dr. Setterfield as due diligence on acquiring an option on the Property and to prepare for further exploration by evaluating mineralized showings and prioritized potential exploration targets. Field work by Bjorkman (Fig. 38) involved precise geological mapping using an Arrow® 100 GPS receiver with submeter accuracy to outline outcrop areas, and delineate contacts of lithologic and alteration units. Bilquist was mainly employed finding showings that had been reported by earlier exploration programs and prospecting for new ones. The program was of short duration (one week) and intended as a due diligence on the Property. Two main areas were focused on where Ron Bilquist and previous operators had reported interesting results. The first was the Coho Zone in the north central part of the Property, which was near to existing road access. The second was in the south of the Property in the vicinity of the Rig Breccia showing and the CL-II showings. The objective of the geological mapping in the time available was to accurately represent a few small areas to provide context for sampling rather than attempt to cover the whole Property superficially.

Field work in the area was aided by a complex of old roads, but inhibited by an advanced

Figure 38: Exploring an old Trenching area
Bjorkman and Setterfield conferring over the location and identity of linear spoil piles assumed to be from a shallow stripped area or trench dug in the 1980s. The area is covered with a moderate till veneer and is located near the Coho Zone. Second growth pine forest dominates this low dry area.
Photo by the author September 9, 2020.

stage of second growth after logging that began in the mid 1970s. Many old roads were overgrown with alder and spruce to a state where travel was easier away from the roads, but where significant amounts of deadfall still impeded progress. The main objective of the exploration work was to rediscover old showings, make geological observations for detailed mapping, and collect samples for analysis to corroborate new field observations and previous exploration work. Much of the current effort in field work was around locating and discerning mineralized outcrops buried under moss, undergrowth and deadfall that had accumulated since the last intensive exploration in the early 1990s.

The author examined two showings and the areas around them. The first is known as the Coho Zone and is located on the south flank of a deep talus-filled E-W oriented linear ravine cutting bedrock in monzonitic intrusive rocks. It was accessed by hiking north from a deactivated logging road through moderately dense bush and swamp. The mineralized rock consisted of altered and fractured intrusive rocks field classified as diorites. The second site is known as the Rig Breccia and was reached by a 30 minute hike through dense spruce and pine bush from an inactive logging road and lay in a steep sided south-flowing creek ravine. The main showings at the Rig Breccia were shallow historical excavations into the ravine banks into an E-W fault zone consisting of significant widths of argillicly altered rock, clay gouge and lenses of silicified breccias of monzonitic rock The sites had previously been mapped and partially sampled by Bjorkman and Setterfield following the previous prospecting field work of Bilquist.

9.2 Mineralized Rock Sampling Methods

Rock samples collected by Cirrus were typically selected as single grab samples, or smaller chunks of rock from mineralized zones in outcrops making up a weight of about 1 kg. The samples were principally selected to represent different styles of mineralization and establish the possible range of concentrations of economic elements in the rock, in this case copper, gold, silver, zinc and lead. Only a few of samples were taken as chips across approximately measured intervals where the rock was more homogeneously mineralized or where a planar mineralized lens or vein structure of significant width was identified. In general individual samples were not collected with the intent of accurately representing large volumes of rock, they were collected to represent local observations by the geologist about the strength and type of mineralization. Five of the samples were collected for lithogeochemistry to aid in igneous classification. These rocks were sampled from least altered, unmineralized zones to ensure accuracy of the classification. Samples were located using hand-held GPS units including a high precision, sub meter accuracy ARROW® 100 GPS. Sample sites were marked with flagging tape numbered with the sample number. Assays are symbolized for copper and gold in Figures 39 and 42.

9.3 Significant Results of the Chuchi South Property Exploration

9.3.1 The Coho Copper zone

Copper±lead±gold±zinc mineralization occurs as quartz-carbonate-sulphide veining associated with an east-west fault zone. The fault is expressed by a steep-sided east-west oriented ravine up to 15 meters deep (Frontispiece). The host rock is field classified as diorite and is probably monzodioritic in composition. Fresh diorite in the area (north and south of the mineralized zone) has a moderate to high magnetic susceptibility reflecting modal magnetite of primary origin. In the Coho mineralized area the altered diorite has lost some magnetite by alteration to propylitic assemblages and has a lower magnetic susceptibility. The altered and mineralized diorite has a width of 30m and was traced out for a strike length of at least 350m, but cannot be followed farther across swamps and overburden.

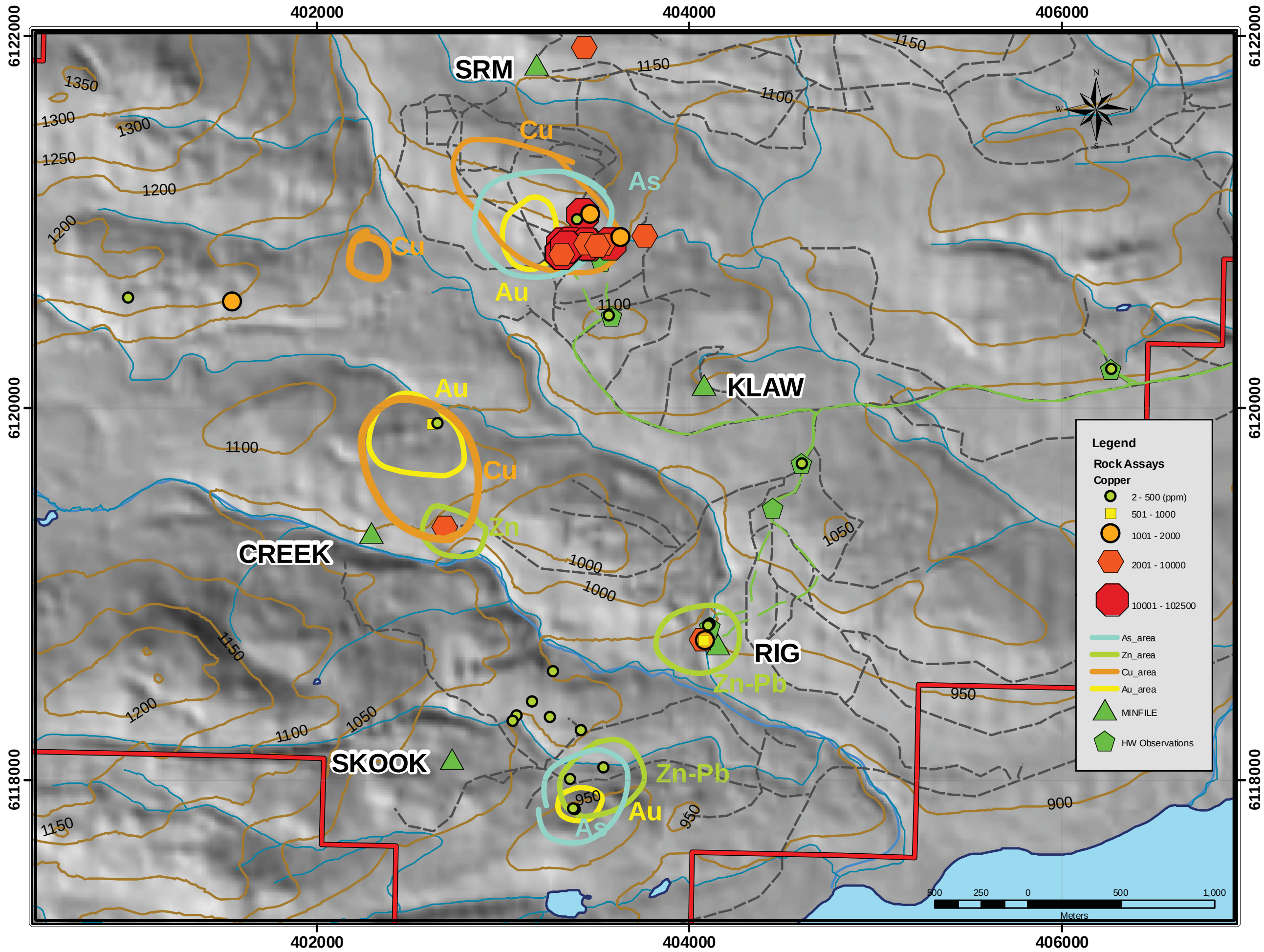


Figure 39: Chuchi South 2020 Exploration: Copper Assays
Assayed samples are symbolized for ranges of copper content as shown in the legend. Coloured lines represent anomalously mineralized areas for Cu, Au, Zn and As determined by Bilquist's rock sampling between 2002 and 2019. All 47 rock samples collected for Cirrus in 2020 are shown. Some anomalous areas were not sampled.
Drawn by the author in ArcGIS 9.3, December, 2020.

The mineralization observed in the flanks of the ravine consists of veins of 10-30 cm thick, banded sulphides and quartz with fine sphalerite, chalcopyrite, galena and minor sphalerite. Fine quartz-chalcopyrite-pyrite-malachite veinlets and fracture coatings are mainly found on the south side of the east-west fault, and these veinlets that dips steeply to the southwest and northeast (Fig. 44).

At the far west of the mapped extent, previous trenching has apparently exposed the main fault structure. Just east of the workings a 2 m wide strongly altered dark siliceous dyke contains 10 to 15% disseminated chalcopyrite. It is difficult to tell the orientation of the dyke, but it seems to cross cut the main structure in the valley. South of the western trenching, there is a subparallel fault zone oriented at 260 degrees and dipping north at 75 degrees with associated copper mineralization. The mineralization was noted over a width of 11 meters and occurs approximately 55 meters south of the main mineralized fault. North of the Coho Zone ravine, quartz, epidote and potassic alteration (Fig. 40 and 41) were observed in the dioritic rocks, but little chalcopyrite associated with the alteration and joint sets.

Other fault related mineralization and alteration to the north and south of the Coho copper zone (Fig. 44) includes a chalcopyrite-quartz mineralized fault breccia 160 m north of the main fault. This fault dips steeply north, is 5-6m wide and was traced for 50 meters along strike.

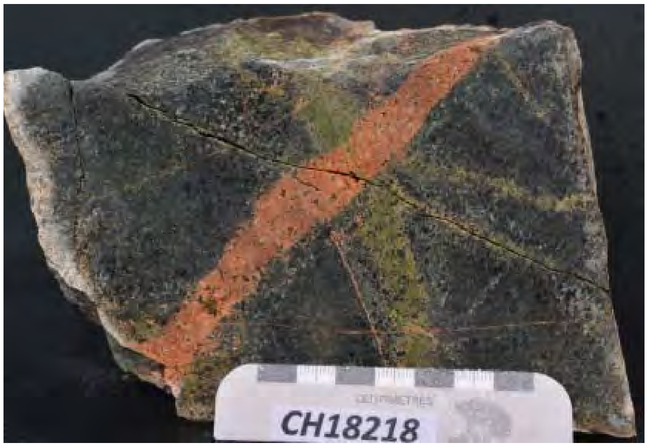


Figure 41: Photo CH18218 potassically altered veinlet in Monzodiorite from the Coho Zone
Sawn sample from Ron Bilquist's 2018 exploration of the Coho Zone showing strong potassic alteration along a planar structure. epidote alteration crosses the potassic zone along fine filaments sulphide mineralization along fractures Cu=73 ppm 403645E; 6120491 N

Figure 40: CH18213 Monzodiorite from the Coho Zone
Sawn sample from Ron Bilquist's 2018 exploration of the Coho Zone showing potassic alteration 403534E; 6120424 N. Photo by Ron Bilquist.

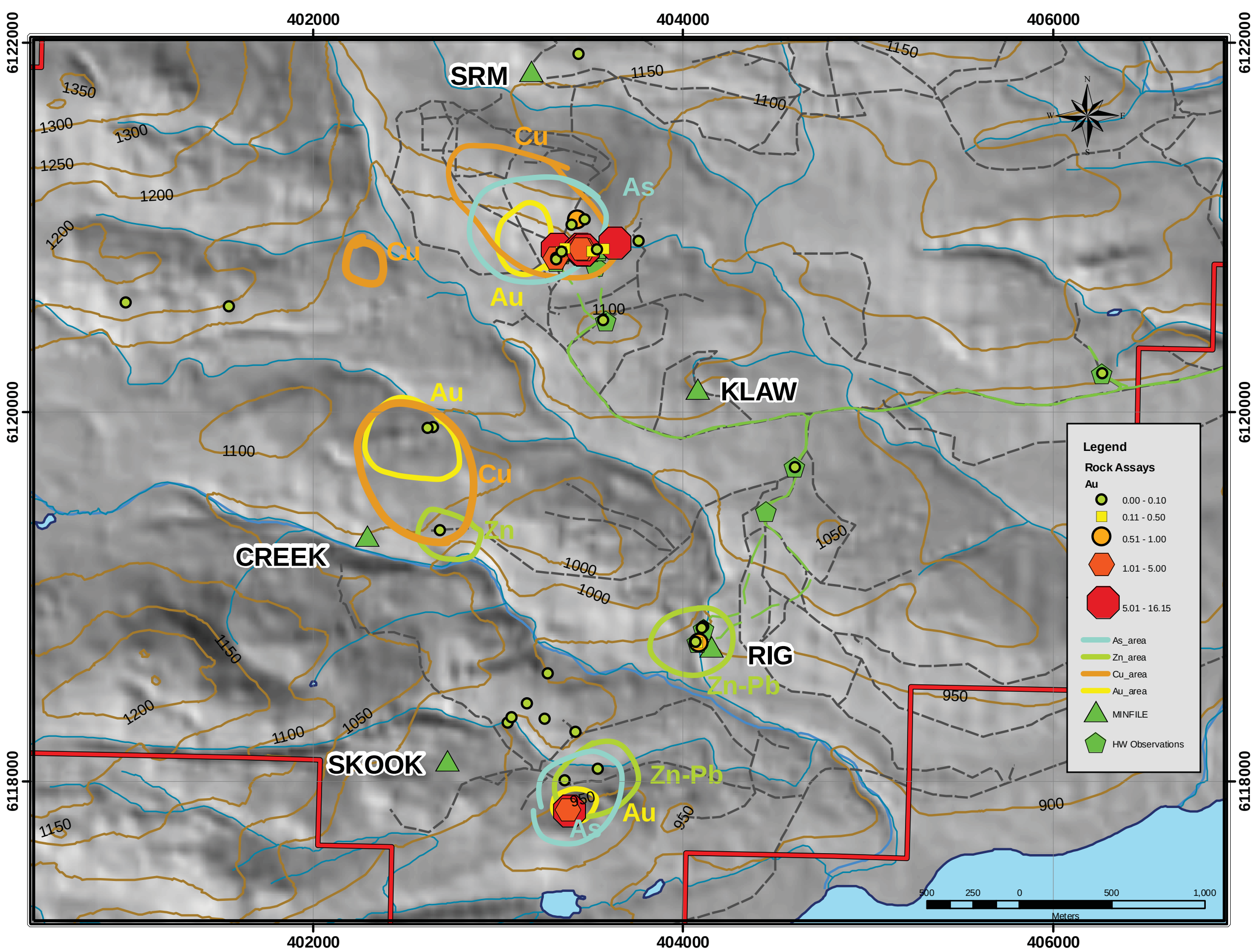


Figure 42: Chuchi South 2020 Exploration: Gold Assays
Assayed samples are symbolized for ranges of gold content as shown in the legend. Coloured lines represent anomalously mineralized areas for Cu, Au, Zn and As determined by Bilquist's rock sampling between 2002 and 2019. All 47 rock samples collected for Cirrus in 2020 are shown. Some anomalous areas were not sampled. Drawn by the author in ArcGIS 9.3, December, 2020.

Figure 43: CH18217 Sheeted veinlets in Monzodiorite from the Coho Zone
Sawn sample from Ron Bilquist's 2018 exploration of the Coho Zone showing sulphide mineralization along fractures in diorite. Cu=1.49% Ag=11 g/t, Au =0.025 g/t 403538E; 6120887 N. Photo by Ron Bilquist.

Potassic alteration was noted 350 meters south of the mineralized zone also in dioritic rocks.

9.3.2 Rig Breccia

The Rig Breccia showing is exposed in the steep banks of a 10 to 15 meter deep ravine in which a south flowing creek incises an area of extensive till blankets concealing bedrock. The Rig Breccia showing is characterized by a several meter wide fault zone that cuts dioritic and volcanic rocks and is variably altered to clay gouge with lenses of silicified or chalcedony-cemented breccia of dioritic fragments. Strong sericite-quartz pyrite alteration extends north in diorite. South of the fault gouge there is a quartz breccia with forest green altered chlorite fragments. The fragments appear to be very fine-grained and potentially of distinct character to the intrusive to the north. This fault sequence as observed on the west side of the creek, includes a strongly quartz chlorite altered breccia in the south, then a 2-4 m wide fault zone with quartz-sphalerite-galena-pyrite veining and gouge.

Altered diorite was mapped along the river for 95 m to the north. At 78 m north of the main Rig Breccia showing, there is another discrete quartz chlorite breccia. It is surmised that a fault runs along the creek, but the fault zone is not offset in its strike on the east side of the creek. There are many joints dipping north-northeast and south-southwest, but their relationship to the mineralization is unclear.

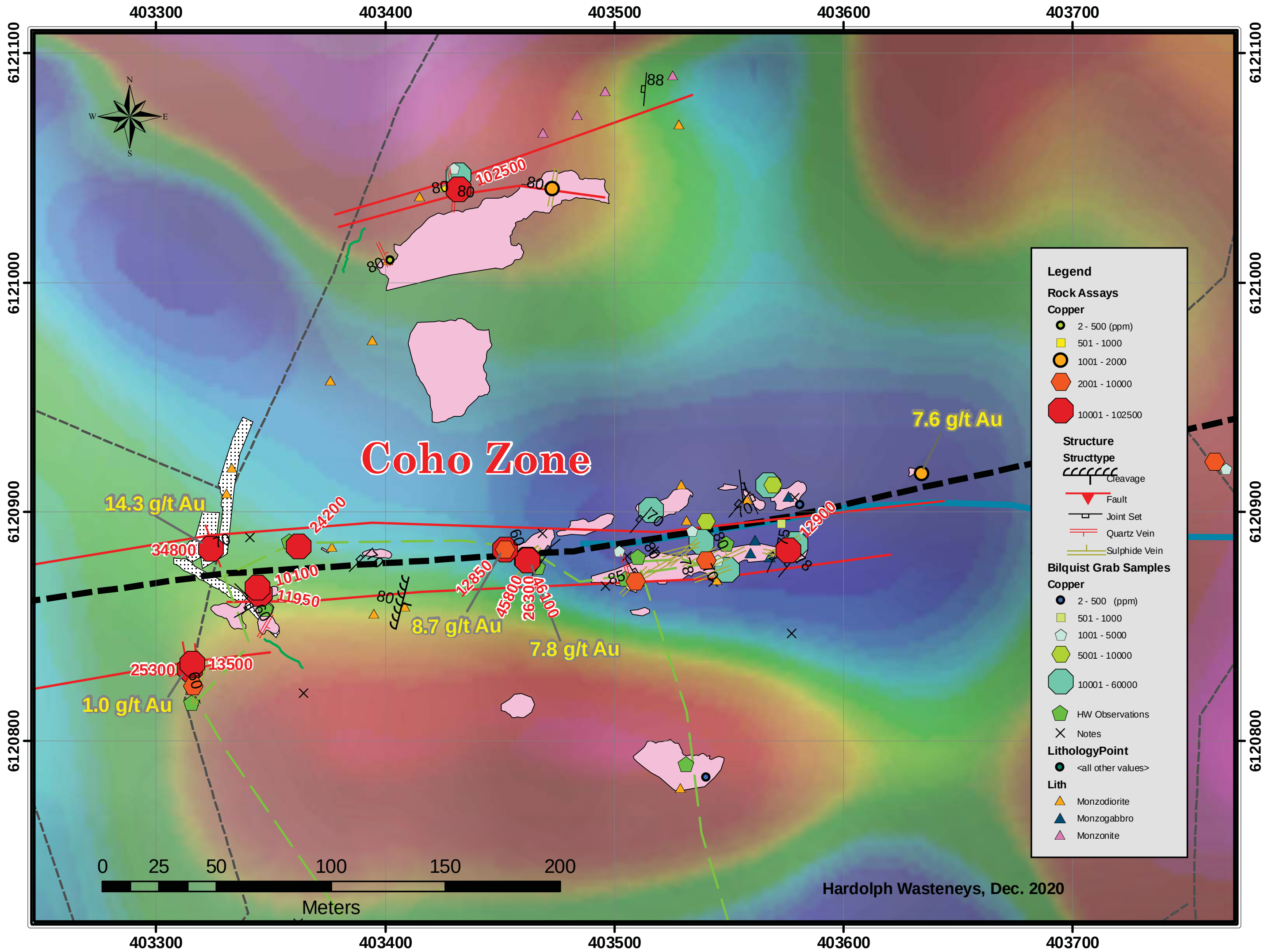


Figure 44: Coho Zone Geology and Rock Assay Map
Map background is the First Derivative of the Total Magnetic Intensity by P.E. Walcott & Associates (see description below). The ravine and underlying fault appear to coincide with a magnetic lineation on the shoulder of a large magnetic high on the TMI map. Rock assays are symbolized by concentration intervals of copper and labelled where over 10,000 ppm. Gold assays are labelled in yellow only for sites > 1.0 g/t and are not symbolized. Samples from previous work by Bilquist are symbolized by grade interval in blue and green toned symbols and not labelled. Outcrop mapping and structural interpretation by Bjorkman using sub-meter precision GPS. Grid is in UTM Zone 10 NAD 83 at 100 meter intervals.
Map drawn by the author in ArcGIS 9.3, December, 2020

9.4 Mineralized Rock Sample Assay Interpretation

Analytical results were obtained for 47 samples collected and assayed by Cirrus in the September, 2020 survey as well as an additional seven, collected and assayed by the author.

The data were initially scanned in tabular format for obvious anomalous concentrations and trends and then statistically analyzed using box plots and correlation coefficient calculations of significant elements to reveal systematics of the mineralization. Maps showing sample points and symbolized by grade intervals show the ranges of copper and gold throughout the Property in Figures 39 and 42.

The samples were separated into 4 groups on a map of the Property shown in Figure 39 and 42, in proximity to the Coho Zone, Rig Breccia, areas underlain by Chuchi Lake Succession volcanics, and the 7 rocks collected by the author as check samples from the Rig and Coho Zones. Boxplots of nine elements that appear to show some sort of systematic variation are plotted in Figure 45 using GCDkit 4.1 (Janousek et al., 2006). The boxplots for Au, Ag, Bi, Cu, Pb, Zn, As, and Sb, graphically show anomalous chemical behaviour usually by a wide range of outlier points above a tight box containing the Inter Quartile Range ("IQR"), or second (25 to 50%ile) and third quartiles (50 to 75%ile) of sample concentrations. In contrast, iron (Fe) has a box plot displaying a "normal" distribution of values with a very minor range of outliers. These elements were selected by trial and error and scanning the tables of data for elements significantly above detection limits and showing a wide range of concentration.

To explore the correlation between elements, a chart of correlation coefficients and graphical binary plots of the same set of elements was constructed in GCDkit 4.1. This is displayed in Figure 46 which is symbolized to indicate sample groups. Many other pairs of elements also have high correlation coefficients, but were not selected for the chart because they were reflected primary rock forming processing not considered important in mineralization. Several of the elements such as Pb, Zn and As have extremely anomalous distributions of values indicated on the boxplots by a narrow IQR and whiskers plotting almost coincidentally as a thick line with a string of outliers above. Iron, as mentioned above, graphically shows a normal boxplot distribution. Interestingly, Au, Ag, Cu and Bi all show similar distributions with the median value line plotting at the base of the IQR box and a separate "whisker" above, and many outliers. This may be interpreted as showing that these elements (Au, Ag, Cu and Bi) are more widely present in significant quantities in most of the sampled rocks in contrast to the Pb, Zn and As which may be at background levels in many samples and heavily concentrated in a few.

Correlation coefficients shown in Figure 46 for the nine selected elements reveal clues about the mineralizing system. Amongst an expected association of Cu, Pb, and Zn the coefficients are very low and instead Cu is correlated with As (0.40) and Sb (0.76) possibly signalling sulphosalt minerals or *falerz* (tetrahedrite-tennantite series. Pb is correlated with Bi (0.71) possibly in bismuthinite and As (0.61). Zn, although present in many analyses ranging from is 19 to 17400 ppm has a median of only 142 ppm and an average of 916 which is consistent with a high degree of skewness or kurtosis indicating what can be seen by inspection of tabulated values, that there are only a few samples with appreciable Zn present. Copper also has a high range from 42 to 102500 ppm in the 54 samples, but the median value is 1745, which would commonly correlate with visible chalcopyrite or at least malachite staining on the rock.

Gold meanwhile is strongly correlated with Ag (0.77), Bi (0.58), As, (0,56), and S (0.57), but less strongly with Cu (0.30) and Pb (0.40). The significance may be partly spatial if a model for Cu-Au porphyries is employed which would predict zoning of copper with gold in the core potassic-altered zone surrounded by a peripheral high-gold - low-copper zone in propylitically altered rocks. The presence of other anomalous elements is also consistent with peripheral

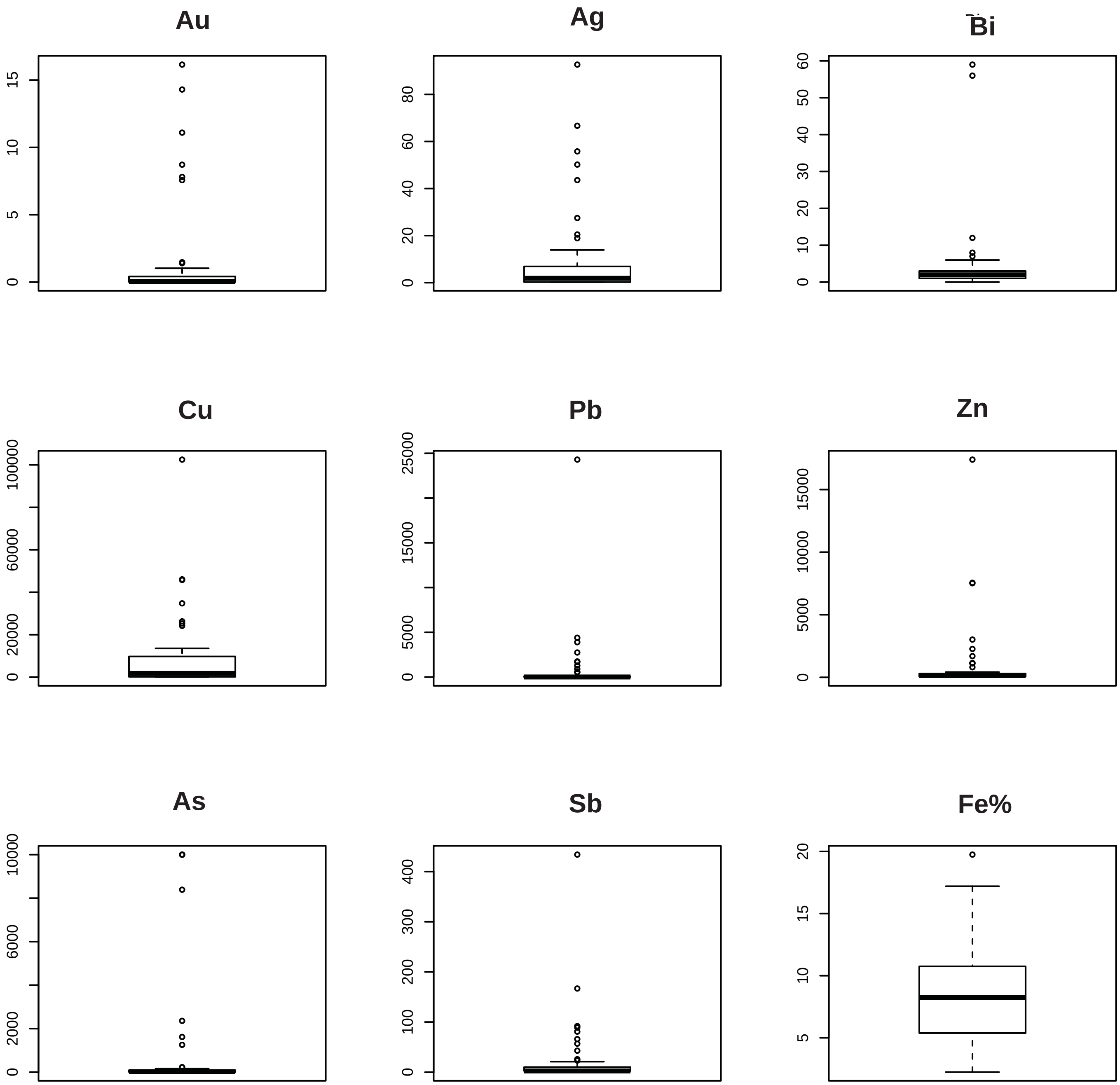


Figure 45: Boxplots for 9 selected elements in the rock data set grouped by occurrence.
The boxplots provide a visual profile of the statistical distribution of concentrations of mineralizing elements for all of the samples collected at the various showings on the Chuchi South Property in 2020. All concentration axes in ppm appropriate to the range of concentration of each element except Fe in %. Scales are linear. The rectangular “boxes” within each graph enclose the second and third quartiles of samples spanning the Inter Quartile Range (“IQR”); the dark line is the median value, the whiskers either side of the box represent 1.5 time the IQR, and outliers are spots beyond the whiskers.
Boxplots drawn in GCDKit 4.1 (Janousek et al., 2006) by the author November, 2020.

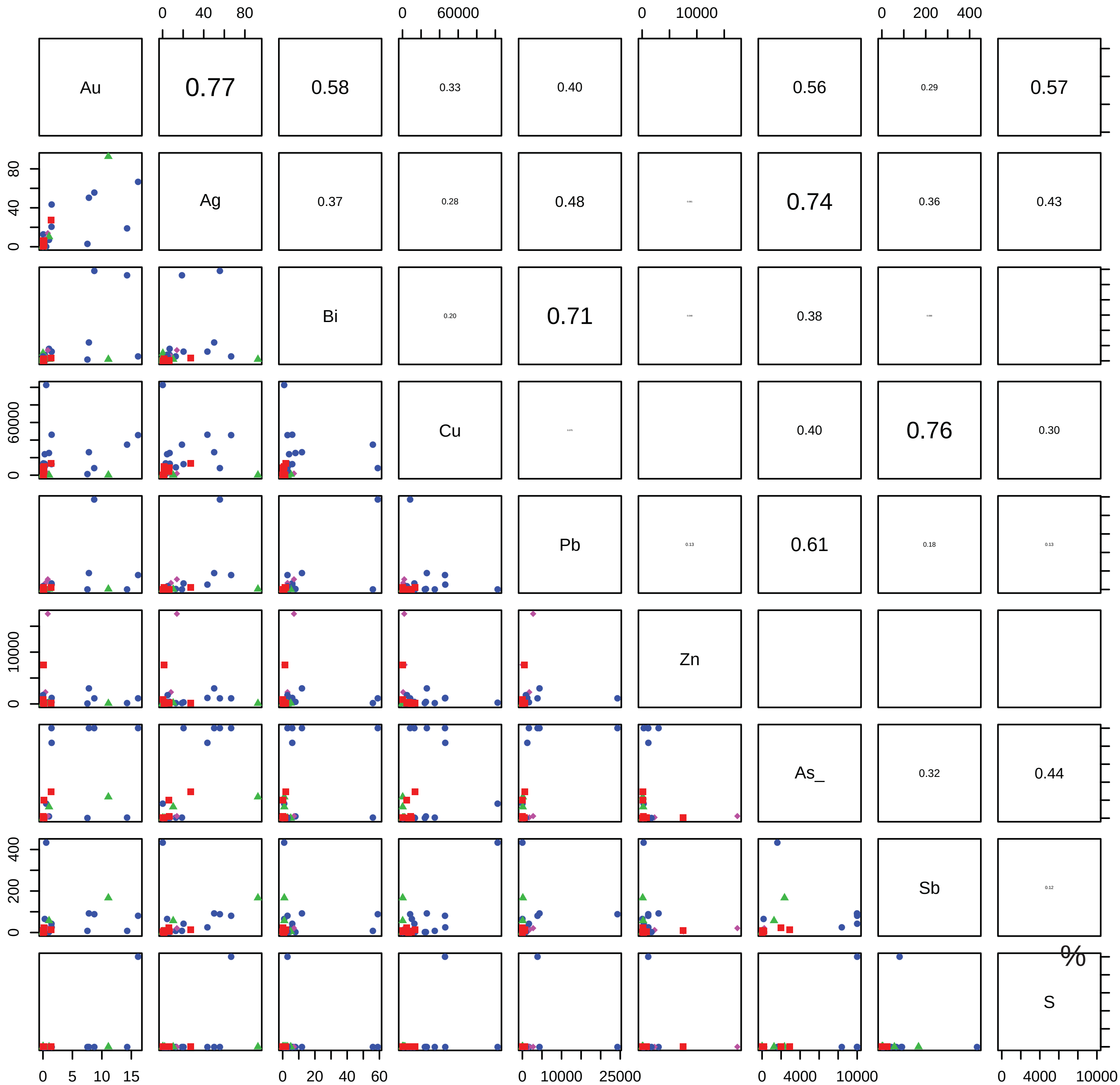


Figure 46: Element Correlation chart for the Chuchi South rock samples
A selected subset of elemental correlations relevant to mineralization is shown. Axes are in ppm, except S in % and scaled linearly. Symbols in the graphs are in 4 groups representing the Coho Zone, the Rig Breccia, Takla volcanics and the author's check samples from the Coho zone and the Rig Breccia. Correlation coefficients are shown in the upper right in text size proportional to strength of correlation. For example Cu has a high correlation with Sb at 0.76. Silver is also highly correlated with As with a coefficient of 0.74. The modest correlation coefficients for As with Au an Ag (and others) may be compromised by the capping of 4 As analyses at the overlimit value of 10,000 ppm some of which may be proportionately higher. Calculations and graphing by the author using GCDKit 4.1 (Janousek et al., 2006)

zones in which tennantite and polymetallic Pb-Zn mineralization may be present in veins.

A simple geochemical indication of the alteration of the host rocks is in the K/Na ratio from the ICP data set, which may not fully reflect total K and Na values because of possible incomplete dissolution in strong acids. Values of K/Na near 1 are consistent with generally low values of Au, Cu, Ag, Zn, Pb, As, and Sb. Values of K/Na ranging upwards to 60 are proportional to anomalous concentrations of the same mineralizing elements. The alteration has most strongly affected Na apparent from a distribution between 0.01% and 4.11% and a median value of 0.26% with an average of 1.05% likely indicative of Na depletion. K, also appears to have some unnaturally low values at a minimum of 0.04% and maximum of 5.65%, but its median value is 2.5% and average 2.34%, which is close to a normal distribution if not pointing to some enrichment. Potassic alteration is apparent in many samples of rocks from the area, but there is no unambiguous way of attributing how much potassium has been added to the rock. This is made particularly ambiguous by the shoshonitic/alkalic primary composition of the monzodiorite and mafic volcanics, which are high in K_2O and have typical K_2O/Na_2O ratios above 1.0. in unaltered rocks. Ca appears to be similarly depleted in some mineralized rocks compared to more typical values expected for volcanics or monzodiorites.

Binary logarithmic plots of Au vs Cu and Au vs Ag illustrate the correlation between these elements in Figures 47 and 48. Statistical values for the 47 grab samples collected for Cirrus plus the author's 7 check sample show a good range of copper and gold grades ranging for gold from sub detection 0.005 g/t to 16.15 g/t and for copper from 42 to 102500 ppm (10.2%). Moreover, over half the numbers for gold are over 0.053 g/t with and average of 1.41 g/t and for copper half are over 1745 ppm and with an overall average of 8720 ppm (or 0.87 %). At the Coho Zone grades are generally higher with half the gold values above 0.3 g/t and averaging 2.88 g/t and for copper half the values are over 1.295% (12950 ppm) averaging 1.95% (19500 ppm). In Figure 47 a hint of spatial mineralogical/metal zoning is shown by a line between most of the samples from the Coho Zone and other parts of the Property suggesting that Coho may be a higher copper zone.

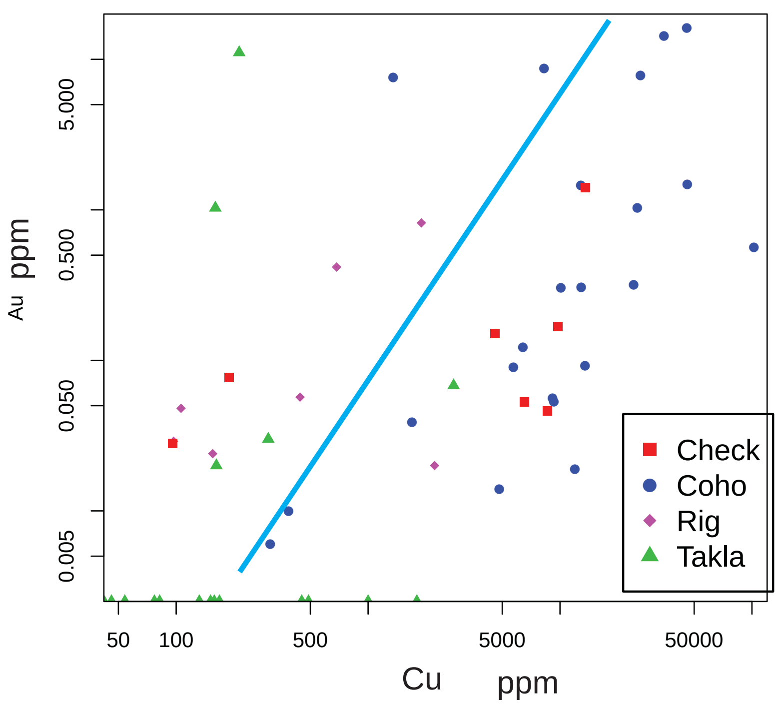


Figure 47: Graph of Copper vs Gold in rocks from the Chuchi South Property.
Concentrations of Cu and Au in ppm are plotted on logarithmic scales. The blue line roughly separates samples representing the Coho Zone and the rig and other areas underlain by volcanics.
The author's check sample are indicated by red squares. The geochemical data-set shown here is from Cirrus and excluded field blanks.
Graph rendered in GCDkit 4.1 (Janousek et al., 2006) by the author November, 2020.

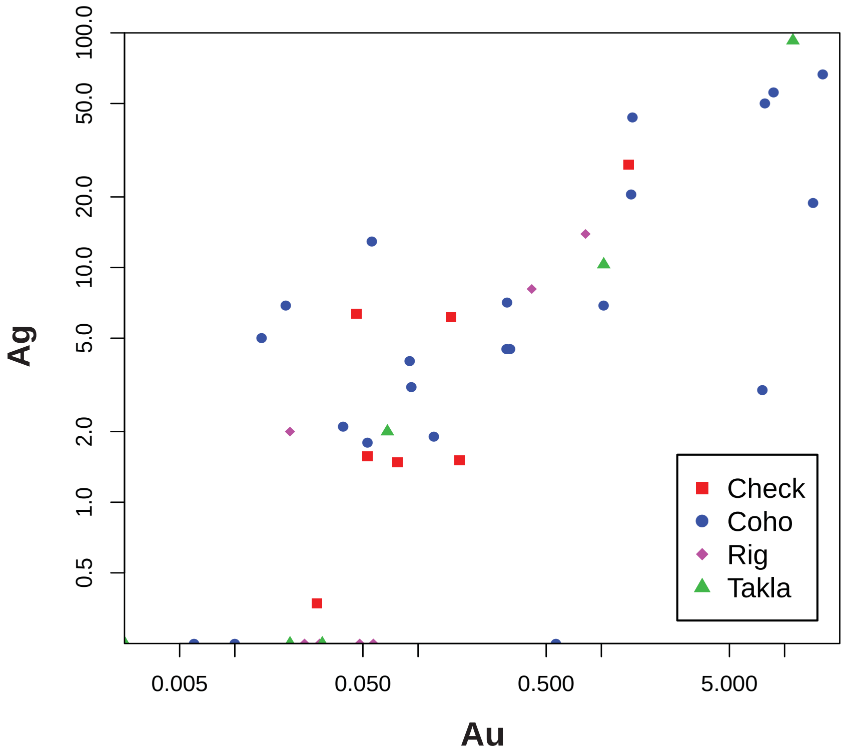


Figure 48: Graph of gold vs silver in rock samples from the Chuchi South Property
Samples are classified by occurrence using symbols in legend. The array of points shows a good trend and is consistent with the high correlation coefficient for au and Ag.Concentrations of Au and Ag in ppm are plotted on logarithmic scales. Symbols indicate groups identified in the legend.
Field blanks not included in this plot.
Graph rendered in GCDkit 4.1 (Janousek et al. 2006) by the author, June, 2019.

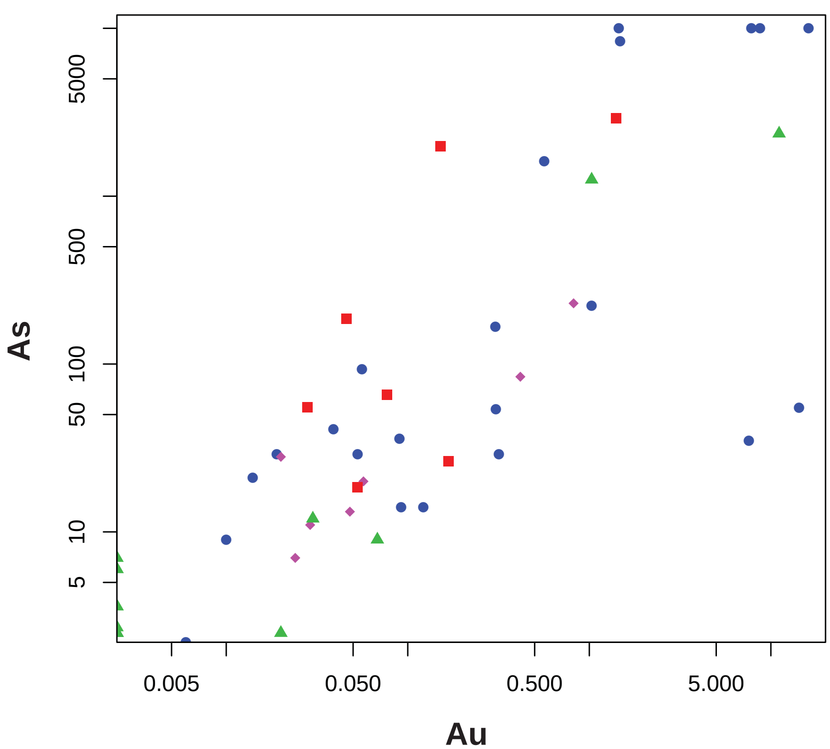


Figure 49: Graph of gold vs arsenic in rock samples from the Chuchi South Property
Samples are classified by occurrence using symbols in legend. Concentrations of Au and As in ppm are plotted on logarithmic scales. Symbols indicate groups identified in the legend.

Graph rendered in GCDkit 4.1 (Janousek et al. 2006) by the author, June, 2019.

9.5 Lithogeochemistry of the Chuchi-South granitoids

The lithogeochemistry of the granitoids of the Nation Lakes Camp is a fundamental parameter in assigning porphyry type mineralization to the copper-gold alkalic porphyry association. High K_2O contents and moderate total alkalis are compositional requirements along with K_2O/Na_2O ratios generally above 1 as reviewed above under Regional Geology. Five samples of igneous rocks (sample No. B0026760 to -764) were analysed for whole rock data are generally classified on a standard total alkali silica (TAS) diagram in Figure 50 (Middlemost, 1994), which subdivides the rocks into various granitoids. Two of the rocks were clearly identified as granitoids, one (-762) is a plagioclase porphyritic basalt from the Chuchi Lake Succession, -761 is described as a highly altered diorite from near the Rig Breccia Zone and -764 is from the South zone and described as a sandstone. However, all of the Chuchi-South samples plot in the field of Monzodiorites shown in Figure 50. Furthermore, K_20 contents of 4 of the 5 rocks also plot in the Shoshonitic field of the K_2O-SiO_2 classification diagram of Peccerillo and Taylor (1976) (Fig. 51). The altered Rig Breccia sample has the lowest total alkalies and unlike the others plots in the high-K calc-alkaline series field of Figure 51. The rock from the Coho Zone, B0026760, is described in the field as a "diorite" with minor potassic alteration, which may have affected its classification. Even the rock described as sandstone plots compositionally the same as the monzodiorites and the shoshonitic volcanic corroborating the conclusions of Nelson and Bellefontaine (1996) that sedimentation was coeval with magmatism resulting in intrusion into unlithified sediments and rapid erosion and deposition of igneous derived sediments.

The compositional relationship of the samples is further elucidated by the P_2O_5-TiO_2 graph which can be used to test differentiation trends. Phosphorus and titanium are both relatively immobile elements, not easily affected by hydrothermal alteration. On Figure 52, rocks from the Nation Lakes dataset of Nelson and Bellefontaine (1996) show at least two differentiation trends corresponding to the main Hogem Batholith arc and a separate area in the Lay Range (an area in the Nation Lakes Camp mapped by Nelson and Bellefontaine, 1996). The Chuchi rocks plot close to the Hogem trend except for a slight deviation by the volcanic sample.

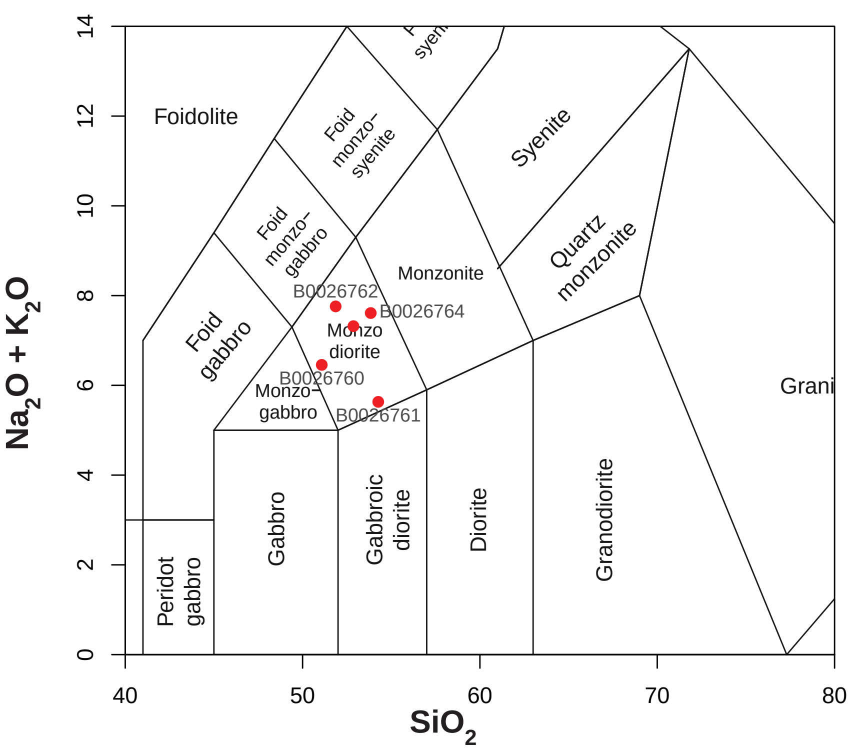


Figure 50: Total Alkali Silica Plot of Middlemost, 1994) for classification of volcanic rocks.

The five granitoid rocks collected during the 2020 exploration program plot in the monzodiorite field of the Total Alkali-Silica classification diagram of Middlemost (1994). For comparison with regional rock compositions see Figure 29.

Plotted by the author in GCDkit4.1 (Janousek et al., 2006) November, 2020.

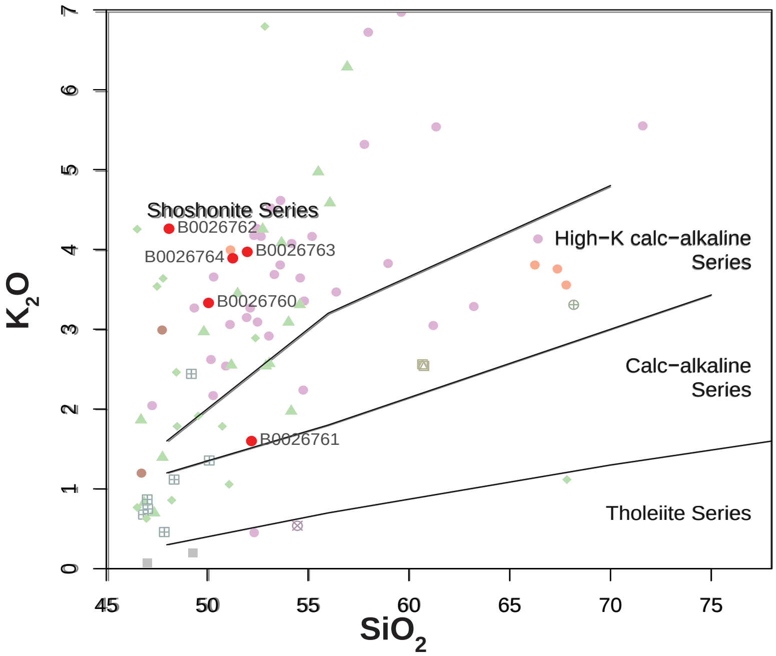
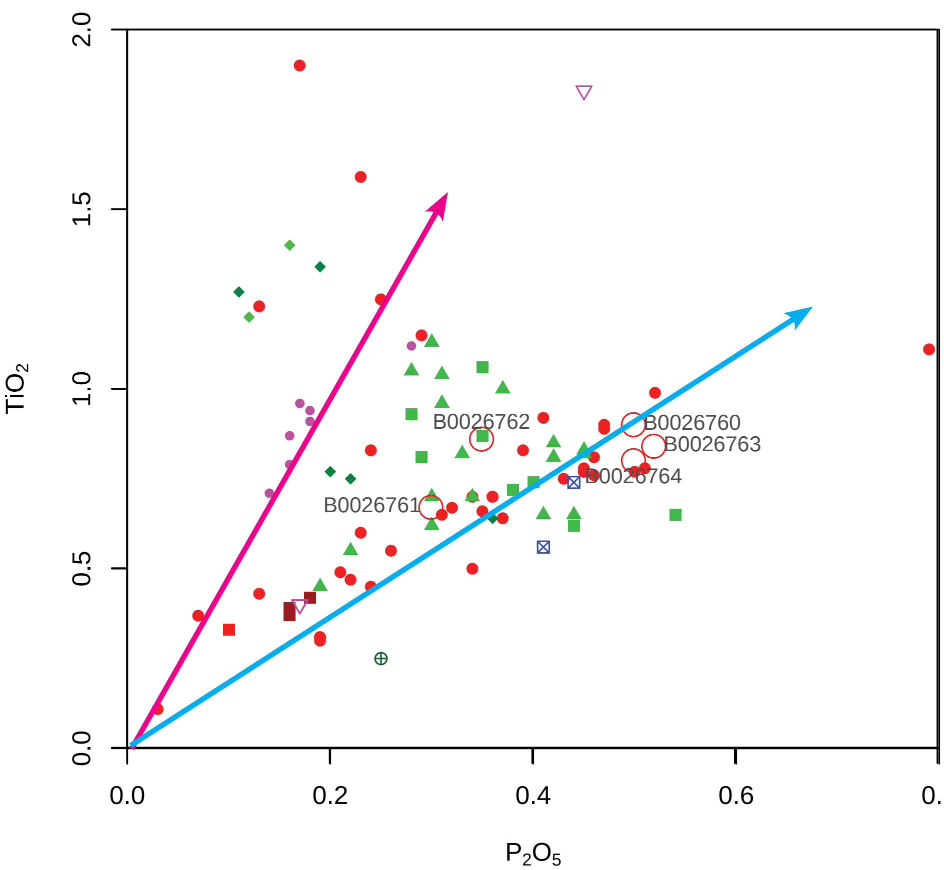


Figure 51: Chuchi Lake granitoids in the Shoshonite Suite

This classification diagram is the simplest and most definitive for distinguishing shoshonites (unaltered) from normal calc-alkaline rocks. The five whole rock samples from the exploration program are shown with black circles and labelled.

Analyses from Nelson and Bellefontaine examined in Regional Geology, in background. Four of the Chuchi-South granitoids plot in the Shoshonite series plot of Peccerillo and Taylor (1976). Plotted by the author in GCDkit4.1 (Janousek et al., 2006) November, 2020.



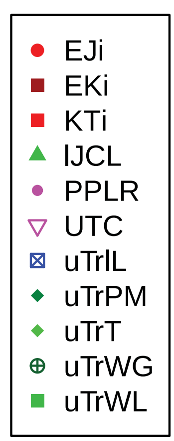


Figure 52: Chuchi South P_2O_5 - TiO_2 compared with regional rocks

Legend shows symbols for groups of igneous rocks from the Nation lakes Camp. Chuchi South rocks are shown as large red hollow circles
The pink lines shows a differentiation trend for a suite for rocks from the Lay Range in contrast to the blue line which shows the main trend of differentiation within the Hogem Batholith.
Five whole rock samples from the Cirrus exploration program are plotted as open red circles.

Drawn in GCDkit 4.1 by the author, December, 2020.

Rare earth elements ("REE"s) are a series of elements that are powerful diagnostic petrogenetic indicators. The increase in absolute REE contents in the melts at constant ratios of Light REEs ("LREE") to Heavy REEs ("HREE") (commonly cited as the Ce/Yb ratios) is because of the incompatible element behaviour of REEs, which concentrate in residual melts as compatible minerals are fractionated away by crystal settling. Within the series from LREEs to HREEs the degree of incompatibility decreases allowing them to be sensitive indicators of magmatic processes. Plots of the REE composition of a rock normalized by some commonly known REE composition such as chondrites or primitive mantle show trends called spider grams and can reveal commonalities and differences in origin of a suite of rocks.

The 5 rock samples plotted on the REE spider diagram of McDonough and Sun (1995) in Figure 53 show very similar trends with only one rocks showing a slight Eu anomaly typical of the effects of plagioclase fractionation removing Eu from the melt. The REE trends are not dissimilar to those of calc-alkaline rocks such as a suite of Jurassic intrusions from Vancouver Island (the Island Plutonic Suite; "IPS", Wasteneys, 2018b). Shoshonites are similar to

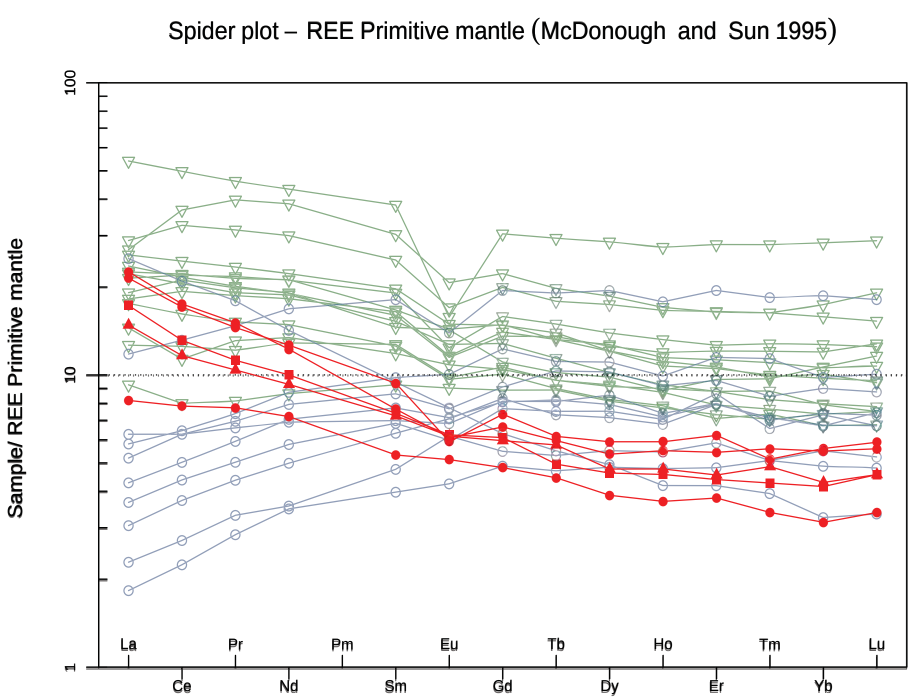


Figure 53: Primitive Mantle Normalized REE Spider plot of Chuchi Lake igneous rocks.

The diagram plots REE concentrations measured in the rocks normalized by REE concentrations defined by McDonough and Sun (1995) from primitive mantle rocks.
Near parallel trends are displayed for the Chuchi granitoids (indicated by red symbols and lines) and show moderate LREE enrichment indicated by steep slopes from La to Sm.
'By comparison, typical calc-alkaline granitoids from the Jurassic Vancouver Island Plutonic Suite (pale green) show flatter LREE patterns and more prominent Eu anomalies and plot at higher REEs overall indicative mainly of greater degree of fractionation. MORB rocks from rift related dykes (pale blue) have marked LREE depletion, but similar HREEs..
Plotted by the author in GCDkit4.1 (Janousek et al., 2006).

calc-alkaline rocks in origin, but have steeper a LREE trend indicating LREE enrichment. In strong contrast, a suite of gabbroic dykes from the Anyox area have Mid-Ocean Ridge Basalt ("MORB") compositions and a diagnostic positive sloping LREE trend or LREE depletions caused by depletion of the mantle source more the high degrees of partial melting needed for ocean floor production from mantle peridotites (Wasteneys, 2018a).

In addition to REEs, LILE (Large Ion Lithophile Elements Cs, Rb, Ba. and U), HFSEs (High Field Strength Elements ("HFSE"): Th, Nb, Ta, and Zr) that are incompatible in melts show other diagnostic aspects of the petrogenesis of the rocks such as the contributions and effects from subducting slabs on the mantle melts. In Figure 54 the five Chuchi monzodiorites and shoshonites are shown in contrast to the suite of granitoids from the Island Plutonic Suite

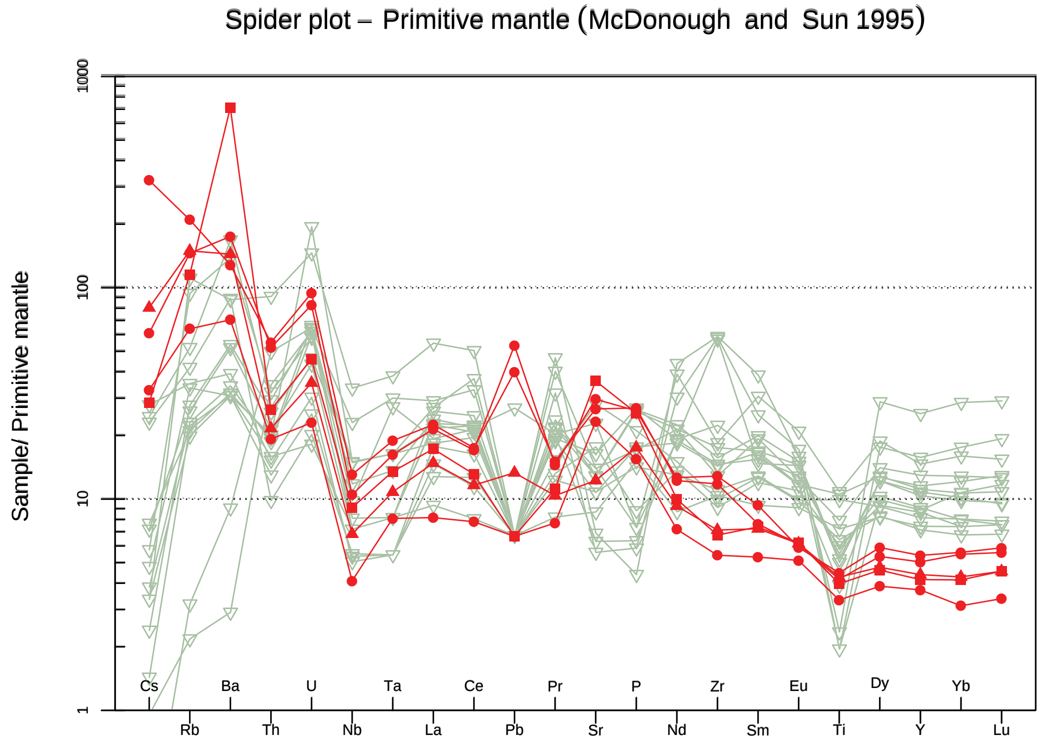


Figure 54: Extended REE Spider plot of Chuchi Lake igneous rocks.
The five monzodiorites are plotted on a background of lines for a calc-alkaline pluton on northern Vancouver Island (same rocks used for Fig. 43) .

The diagnostic calc-alkaline patterns are displayed by IPS granitoids indicated by the strong depletion in Nb, Ta, and Ti.

Plotted by the author in GCDkit4.1 (Janousek et al., 2006) November, 2020.

(Wasteneys, 2018b), which are typical calc-alkaline rocks ranging from gabbros to granites. Strong depletion of selected HFSE is a characteristic of calc-alkaline petrogenesis caused by fluids from the subducted slab changing the pE to more oxidizing conditions which makes the HFSE behave compatibly and thus be retained in the non-melted peridotite. Fluid mobile elements like the LILEs Ba, Rb, U, and Sr also infiltrate the mantle wedge above the subducting, dehydrating slab and add these elements to melts. Thorium is less mobile in fluids and so not transferred the same way and results in a low Th/U. The shoshonites show the effect of LILEs addition to the melt in the mafic rocks relative to the more evolved granitoids from the Island Plutonic Suite. Titanium is depleted in the IPS relative to the compositions of the shoshonites because it is compatible in hornblende, which was crystallizing early. Sr is also depleted in the IPS relative to the Chuchi shoshonites because of early plagioclase crystallization in which Sr substitutes for Ca. Phosphorus (“P”) is depleted in the IPS rocks and enriched in the Chuchi shoshonites indicating relative roles of apatite crystallization depleting P in the IPS and perhaps accumulation in the shoshonites similar to the behaviour of Sr and plagioclase.

Overall, the Chuchi shoshonites show similarities to calc-alkaline petrogenesis, but with greater LILE enrichment, which would include K_2O. Aspects of the general importance of shoshonite geochemistry relative to the copper-gold porphyry alkalic association were discussed about under Regional Geology.

9.6 Airborne Magnetometer Survey of the Property

Cirrus contracted Peter E. Walcott & Associates to conduct an airborne magnetometer survey of the full extent of the Property in October, 2020. The job was completed on October June 14, 2019 and two contour maps were delivered including a Total Magnetic Intensity (TMI) and First Vertical Derivative (1VD) shown on Figures 56 and 57.

9.6.1 Airborne Magnetic Survey Specifications

The airborne magnetic survey as described by Alex Walcott (*pers. comm.*, Nov, 2020) was conducted using a stinger type system mounted on an ASTAR helicopter operated by Silver King Helicopters Ltd of Smithers, British Columbia. The stinger unit consists of three main components – C-824 Cesium Magnetometer™ manufactured by Geometrics San Jose, California, Bartington Mag-03 Fluxgate™, and Optilogic RS-400™ Laser Range Finder. The C-824 Cesium Magnetometer is an extremely sensitive magnetic sensor capable of providing sensitivity up to 0.01 nT and sampling rates up to 1000 Hz. On this survey a sampling rate of 50 Hz was employed. The Mag-03™ was connected to a Kana8™ 24-bit digitizer inside the helicopter, where the analog output from the X, Y, and Z components where digitized and synchronized to a GPS timing signal. The respective digital outputs, were connected to a logging computer where the respective input was synchronized to an NTP time server, utilizing a GPS timing signal. Flight line navigation data and helicopter height data was obtained using Hemisphere R330 GNSS™ receiver and Optilogic RS400™ laser range finder with a 10 Hz update rate. Data logging and navigation were carried out utilizing Picoenviotech ANAV™ software on a Panasonic CF-19 Toughbook™ computer with a secondary 7" daylight viewable pilot navigation monitor. The ground station consisted of two GSM 19 Overhauser™ magnetometers to measure variations in the total intensity of the earth's magnetic field to an accuracy of plus or minus one nT during the period of the survey. The survey coverage consisted of some 52 east-west orientated flight lines at 100 meter intervals and 8 orthogonal N-S tie lines at 500 meter spacings (Fig. 55).

9.6.2 Data Processing and Presentation

The survey data was processed using Geosoft Oasis Montaj software, utilizing base station data to correct for diurnal magnetic drift and then corrected for positioning errors due to instrument delay (lag). The data from the four tie lines was used to level (adjust) the main flight line data after which the data was "gridded" on a 20 meter cell size using Geosoft Bigrid software algorithm. The gridded data was filtered using Geosoft MagMap software module for evaluation and presentation. The magnetic data for the survey is presented as colour-scaled Contours of Total Magnetic Intensity ("TMI") and Contours Calculated First Vertical Derivative ("1VD"). Results of the TMI and 1VD are presented below for interpretation.

9.6.3 Interpretation

In general TMI images are negatively affected by increases in clearance height of the sensor above the ground as well as by the depth of overburden. Within the Property, most second growth trees are moderately short and local topographic relief is low so the profiles are interpreted as accurately representing the underlying bedrock. Local surficial geology (see Figure 4 in Item 5.5 above) consists of till veneers and till blankets, which are mainly less than 5 meters thick, except for a few isolated depression-filling features. The first derivative image compensates for variations in height above ground and local relief by calculating a pseudo gradient measured in nT/m which displays the gradient of the magnetic field being measured.

The TMI image in Figure 56 shows several prominent curvilinear bodies, interpreted in Figure 58, with high magnetic responses between 56500 nT and 57600 nT, the maximum

Figure 55: Linepath Map for the Chuchi-South Airborne Magnetic Survey
The Property boundary corresponds to the outer limits of the 52 E-W flight line and the 8 N-S tie lines. Claim lines are also shown in the same line type as the flight lines. Map coordinates are in UTM zone 10 NAD 83. Map provided by Peter E. Walcott and Associates Limited, November, 2020

field intensity in the Property. A single linear feature is also apparent truncating some of the large magnetic bodies. the largest of the magnetic bodies is a 5 km long sigmoidal body that tapers from a few hundred meters width at each end to about 600 meters in the center. An approximate outline of the body is interpreted in Figure 58 using the 1VD image as a guide to possible vertical contacts, which commonly are shown by the “zero” nT/M contour. It probably corresponds to a plutonic body, likely a monzodiorite, with high magnetic susceptibility intruding into Chuchi Lake succession volcanics and sediments, which provide a lower magnetic contrast. A narrower sinuous body lies to the west of the sigmoidal body and may be a dyke intruded during the main phase of plutonism owing to its curvilinear shape. A third body lies in the south central part of the Property and may also correspond to a pluton of about 800 meters diameter with a tapered NW end. Its southern edge appears to be truncated by a fault evident on the 1VD image as a linear alignment of the zero contour across the width of the property and beyond to the east in the magnetic contour map from the BP option of the Skook Property (Barrie et al., 1991). South of the line is a magnetic low area that geological mapping has shown to be a more sedimentary part of the Chuchi Lake Succession (Barrie et al., 1991).

A comparison in Figure 58 of the TMI maps from the Chuchi South survey with those from the airborne magnetic survey done during the BP Resources option of the Skook claims in 1991 (Barrie et al. 1991), shows good correspondence and allows extrapolation of the large scorpion tailed feature to the east as well as the linear fault. Smaller areas of ground based magnetic surveys were completed on Noranda’s Klaw claims in the northern part of the Property in 1989, (Campbell and Bradish, 1990), with readings above 57000 nT indicating a mag high within the present large feature. Noranda subsequently conducted an airborne survey on the Klaw and Norn claims, presently the west and north parts of the Property, which is also shown overlaid

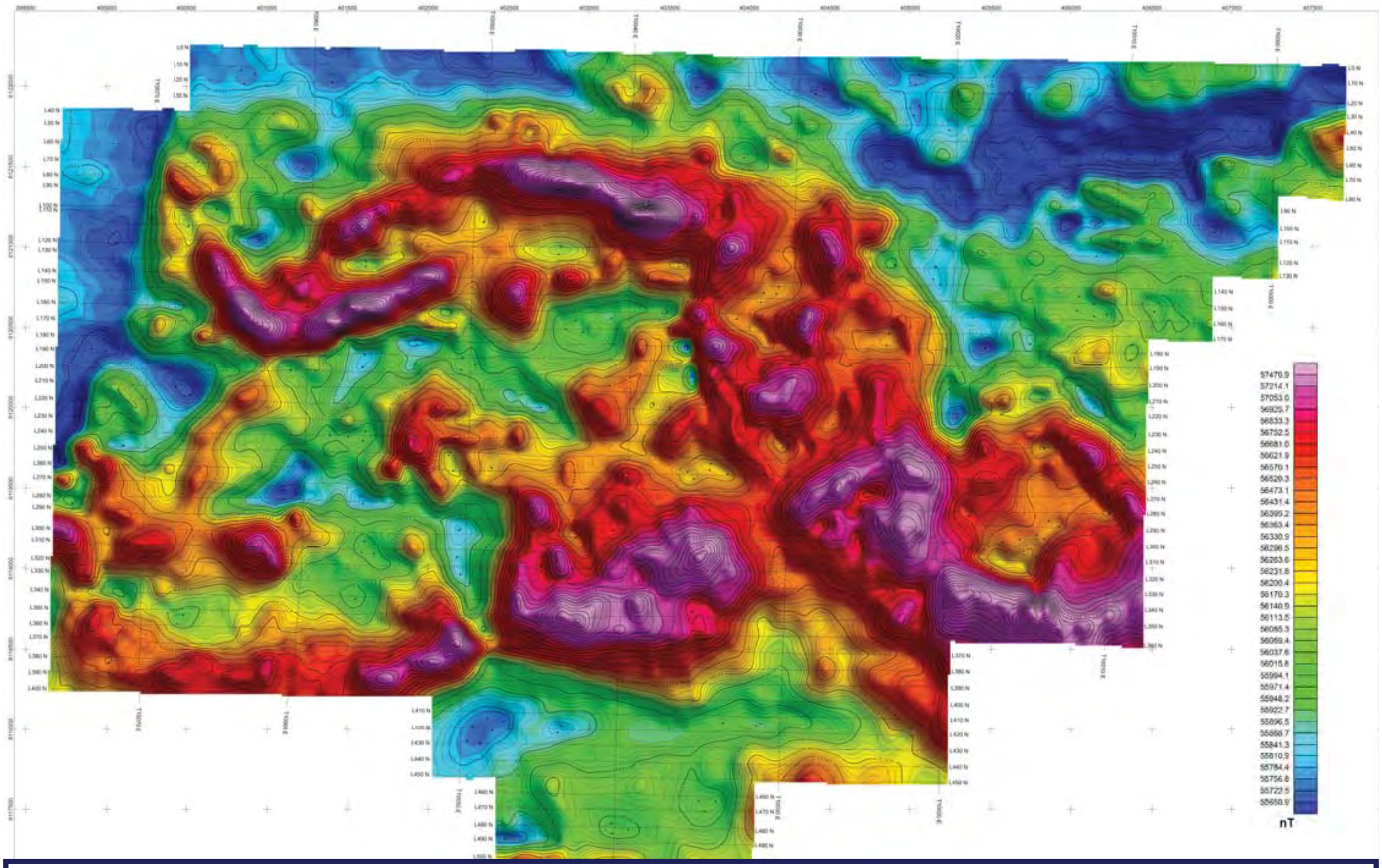


Figure 56: Total Magnetic Intensity from the Chuchi South Airborne Magnetometer Survey. Survey map is from Peter E. Walcott & Associates Ltd.

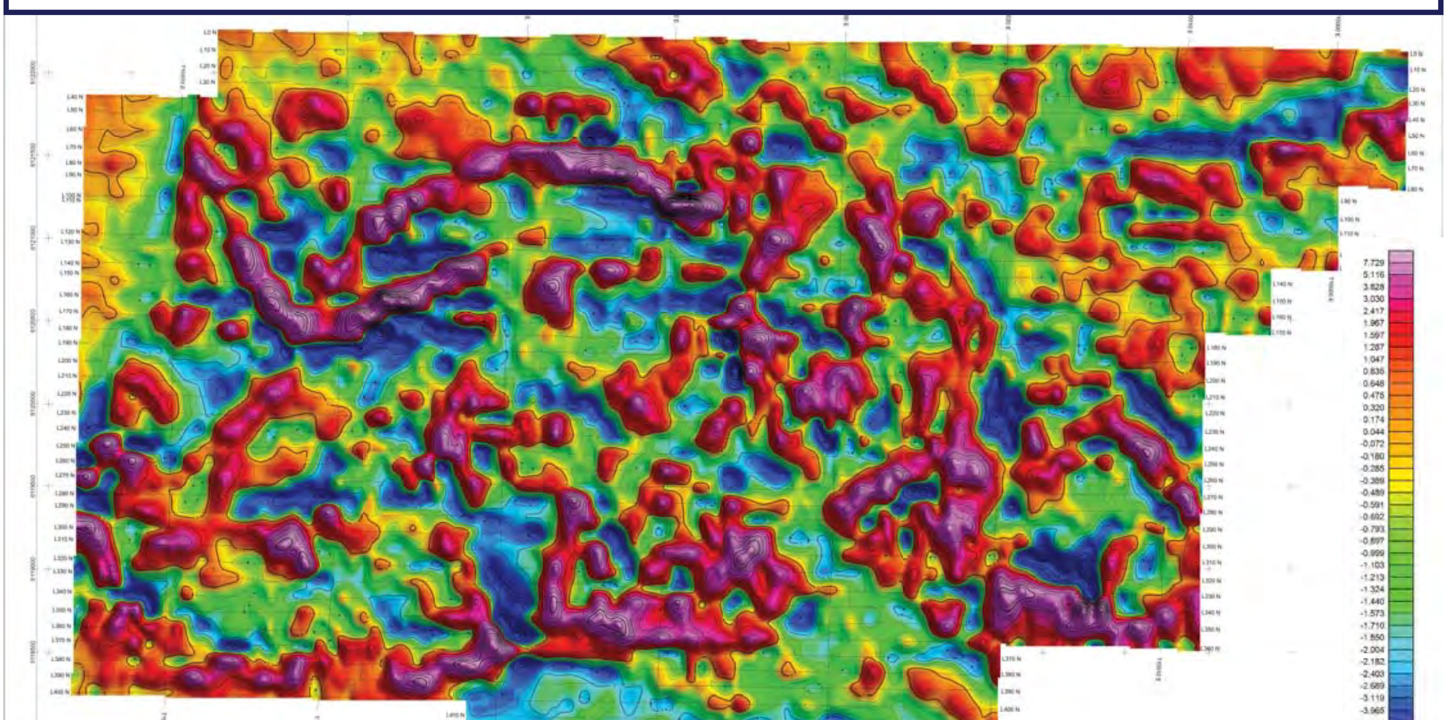


Figure 57: First Vertical Derivative of the Total Magnetic Intensity: Chuchi South Airborne Magnetometer Survey. Note scale is in nT/m and not the same as the scale in the TMI map. Survey map is from Peter E. Walcott & Associates Ltd.

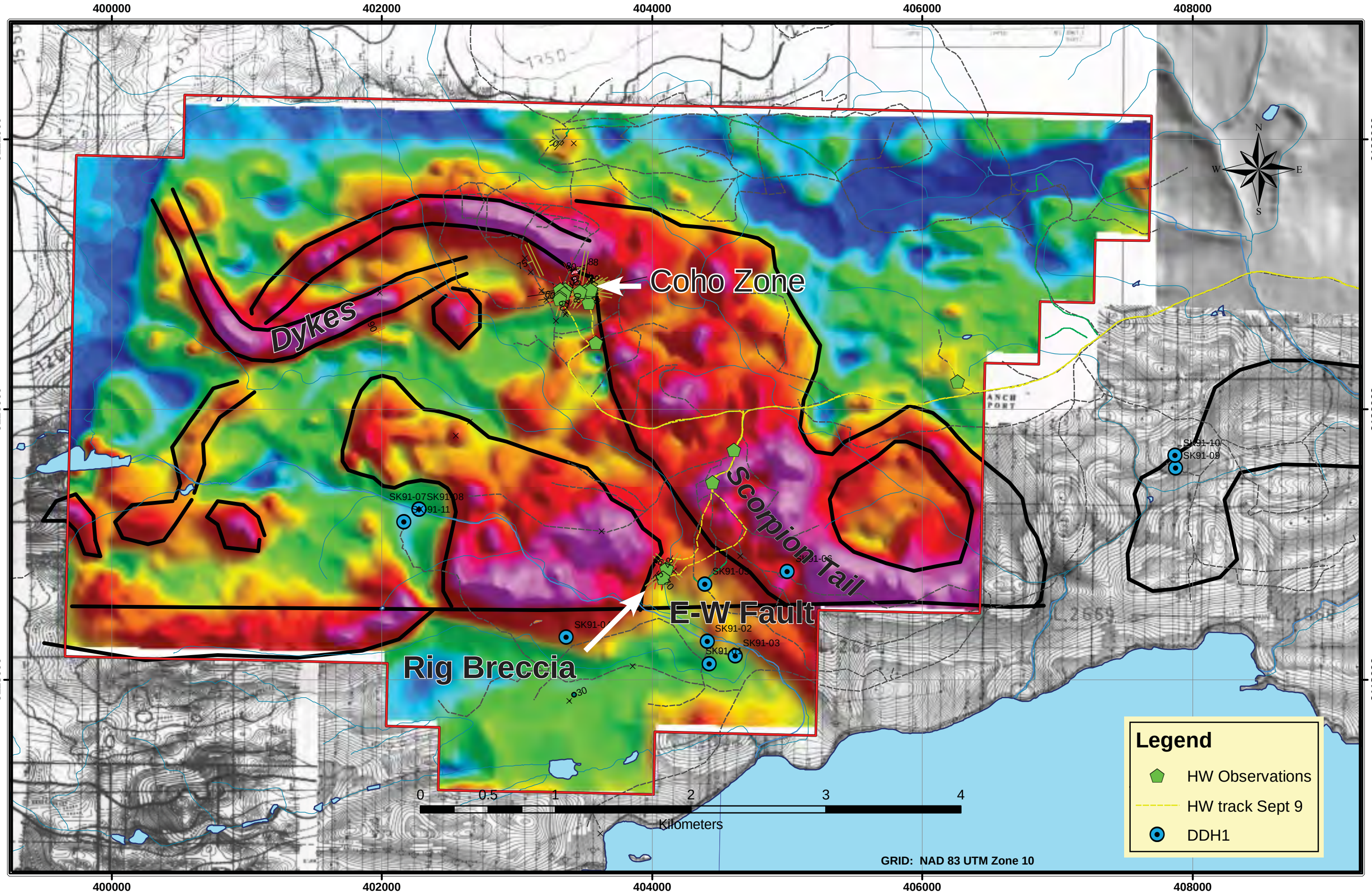


Figure 58: Interpretation of the Chuchi South 2020 Airborne Magnetic Survey Map
The TMI map from Figure 56 is shown here overlaid by the claim boundaries of the Property. Georeferenced black and white contour TMI maps from airborne magnetics surveys by the 1990-1992 BP Resources option of the Skook property (Humphreys, 1991 report 21108; SE part of the map), and the 1990 Noranda survey of the KLAW and Norn claims Campbell, 1990 report 20865). Drill hole locations from the Barrie et al. (1991) and Barnes et al. (1991) BP exploration programs which utilized the mag maps and an IP survey of the Skook claims.
The new airborne magnetometer survey shows good correlation with the Skook survey and allows extrapolation of the large sigmoidal scorpion feature to the east as well as the linear E-W fault. The lack of processing in the Noranda TMI contours makes it more difficult to interpret than the coloured TMI contour image of the Property produced by P. E. Walcott and Associates.
Black interpretation lines were drawn by the author using the 1VD map and following alignments of the "zero" contour. The curved lines may correspond to the contacts of plutonic bodies intruding volcanics or sediments. A possible fault structure, labelled "E-W Fault" appears to truncate the intrusive bodies outlined to the north. The Noranda contours appear more akin to a 1VD map because of their random complexity than a TMI map. Low magnetic areas in blue and green in the NE of the Property are an area of Takla group volcanics of the Chuchi Lake Succession.
For reference the author's traverse track of September 9 is shown in yellow.
Drawn by the author in ArcGIS 9.3, November, 2020.

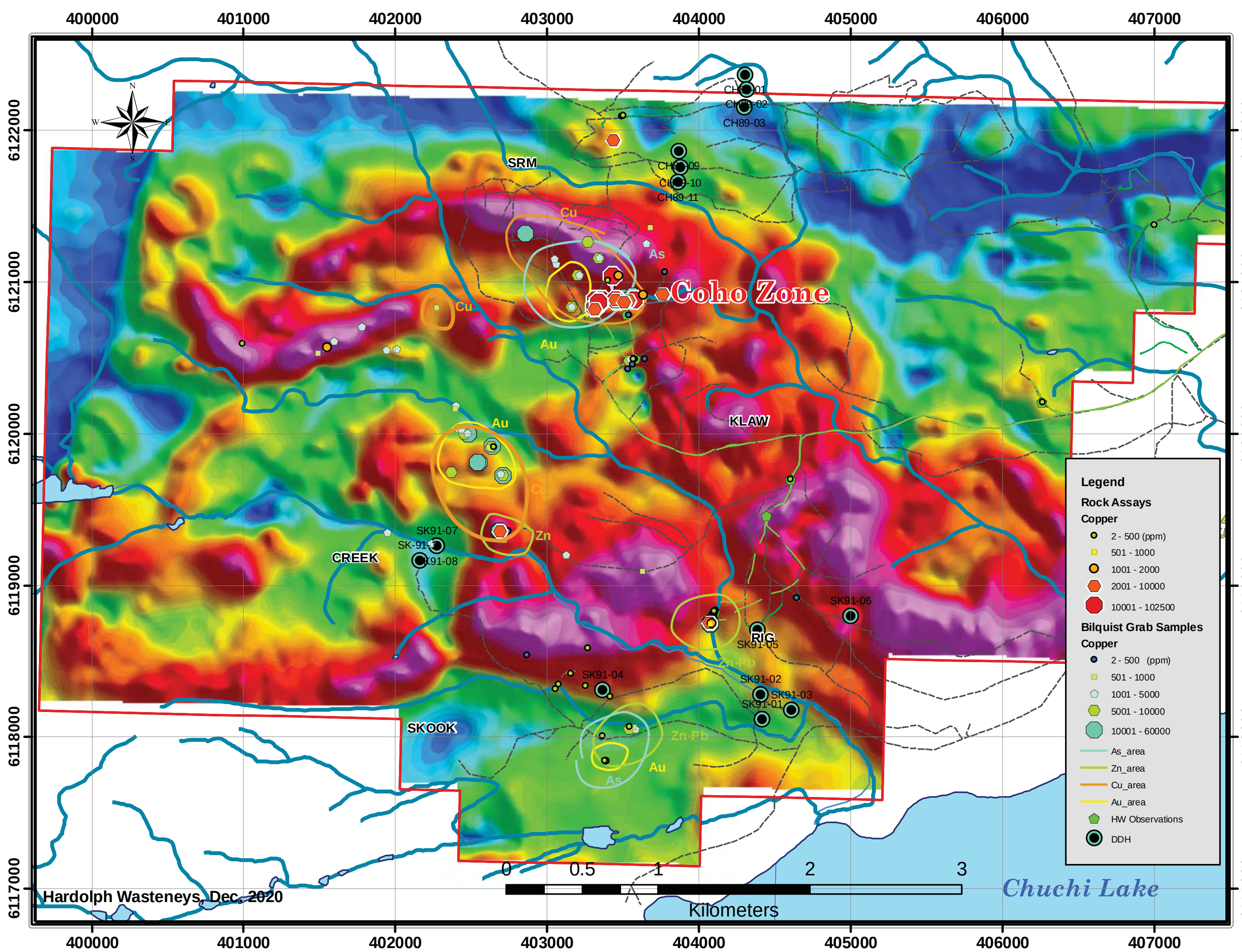


Figure 59: Total Magnetic Intensity Map and Rock Sample Assays
The TMI image is overlain by historical diamond drill holes north of the Coho Zone mag high, south of the Rig Breccia and the E-W fault on Figure 58 in an area of magnetic low, and near the Creek showing, also a magnetic low. Only one hole was drilled in a magnetic high 1 km east of the Rig showing. Values of copper for samples collected in 2020 by Cirrus and previous ones by Ron Bilquist are symbolized in the legend. For reference the author's traverse track of September 9 is shown in yellow.
Drawn by the author in ArcGIS 9.3, November, 2020.

by the present TMI in Figure 56. It was more difficult to interpret having only had minimal processing by correction of diurnal variations and it is not possible to determine what decisions Noranda made using it.

Comparing the company's data set for rock assays with the TMI in Figure 59 shows that many high values for copper are within magnetic highs *possibly* corresponding to area of potassic alteration. Sericitic alteration-related magnetite destruction would be expected to create magnetic susceptibility lows and many of the historic drill holes are located in such zones.

A new work in progress geological compilation map is shown in Figure 59 representing an attempt to subdivide the major intrusive bodies with respect to their magnetic response on the new airborne survey images with petrographic descriptions, whole rock analyses, and field descriptions from previous and current work.

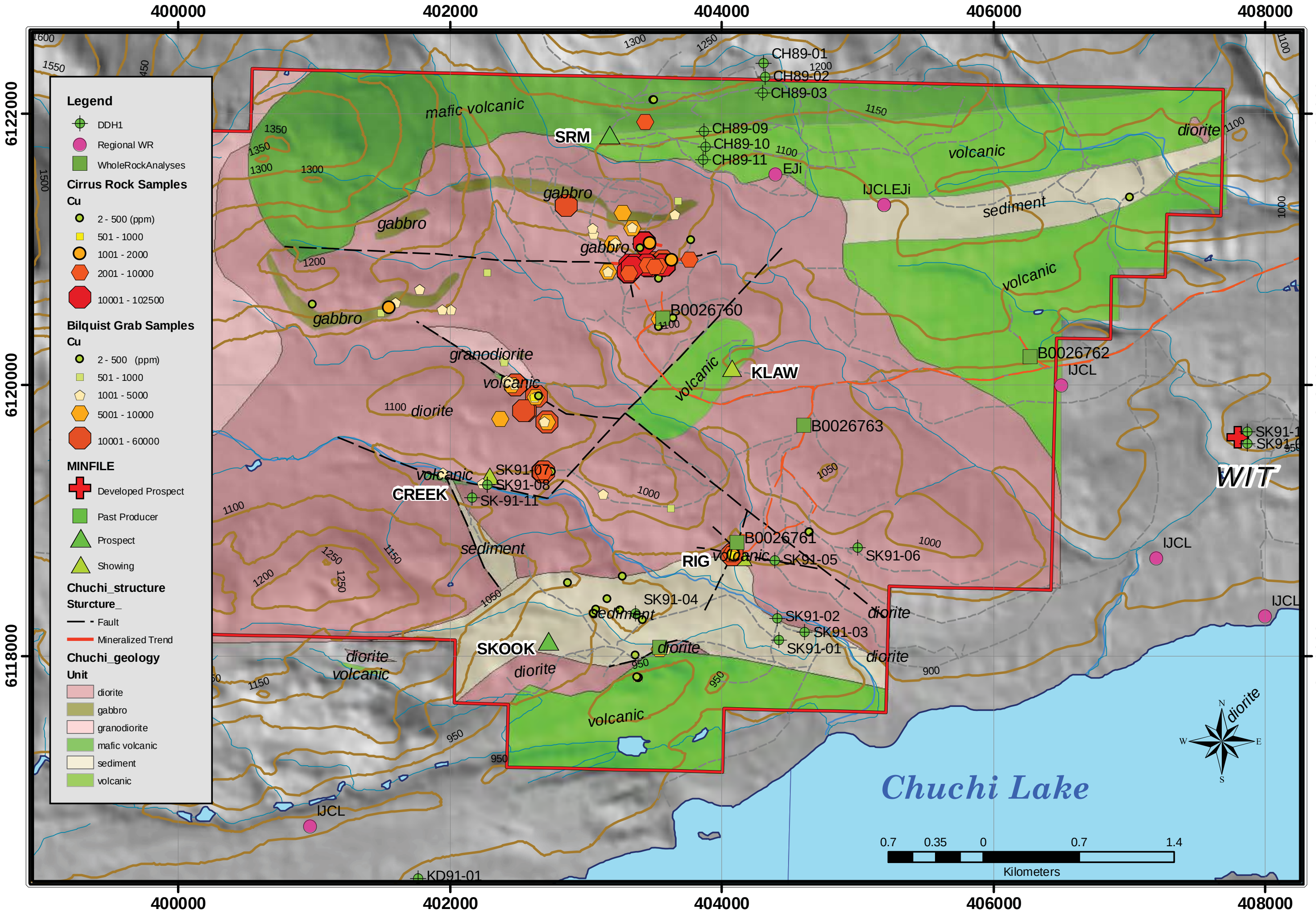


Figure 60: Geological Interpretation of the Chuchi South Property

Compilation of data and geological interpretation by Dr. K. Bjorkman using historical and new field data and the airborne magnetic imagery. Incorporates mapping by Bilquist (2010 to 2019) and previous explorers (e.g. Barrie et al, 1991). Rock sample geochemistry is symbolized for copper from Cirrus and Bilquist data sets. Whole rock sample location from Cirrus and Nelson and Bellefontaine (1996) data. Drill hole locations are compiled from Barnes et al., (1991 SK series), Barrie et al. (1991; KD series), Campbell (1989; CH series). Map drawn in ArcGIS by the author using above data sources. The author's track from Sept 9, 2020 shown in orange dashed line.

10. Drilling

Historical exploration diamond drilling has been undertaken at the Chuchi South on the Property mainly during the BP-Chuchi option project in 1990 and minor follow-up work by Nation Lakes Resources in the few year after. All of the results of the drilling that are available are disclosed in Item 6 History, above.

11. Sample Preparation, Analyses and Security

11.1 Geochemical Analyses

Cirrus collected 47 mineralized and significantly altered specimens from several showings previously known or discovered by prospecting and mapping within the Property. Collection sites were clearly marked as observed by the author in his Property visit and recorded by GPS coordinates and field notes that were compiled in a spreadsheet. Samples were collected into 6 ml plastic sample bags with sample number tags and sealed with plastic zip ties. Locations were recorded by the crew using either handheld Garmin GPS units (Setterfield, and Bilquist) or for detailed precision geological mapping by Bjorkman, Collector™ for ArcGIS, an ESRI application, in conjunction with an Arrow 100™ GPS Receiver, which gives a typical accuracy of 40-80 cm dependent on terrain and tree cover. The Midland Valley application Clino MOVE was also used to record field photos and structural data using a smart phone device. Sample sites were marked in the field with labelled flagging tape.

During the exploration program Cirrus's rock samples were stored in locked vehicles or cabins to prevent public tampering until shipped. Rocks were shipped directly to ALS Canada Ltd ("ALS") on Dollarton Highway in North Vancouver by Cirrus personnel. Reasonable security measures were taken for the exploration samples, given that the results are NOT being relied upon for resource estimates. As a quality control measure, Cirrus inserted 4 field blanks randomly into the 47 sample batch, consisting of pieces of commercially available marble.

The author's field examination included collecting 7 mineralized rocks, 5 from the Coho Zone, and 2 from the Rig Breccia (Fig. 39). The author delivered his rock samples directly to a shipping facility in Prince George for transport to the ALS Global laboratory in North Vancouver, BC.

At the ALS laboratory, the samples were catalogued, dried, crushed, split and pulverized using standard rock and soil preparation procedures. The rocks collected by Cirrus were analysed for 33 elements by ALS protocol ME-ICP61 (Inductively coupled plasma - atomic emission spectroscopy "AES") and for gold by method Au-AA23 using a 30 gram split. The author's field examination rocks were analysed by ALS protocol ME-MS61 (Inductively coupled plasma - mass spectrometric analysis), which provided results for 48 elements at lower detection limits than by ME-ICP61 varying from 1 to 2 orders of magnitude (details in ALS Schedule of Services and Fees). Gold was also analysed by method Au-AA23 from a 30 gram split of the pulp. Both protocols, ME-MS61 and ME-ICP61, involve 4 acid dissolution (H_3ClO_4 -HNO_3 - HCl; dry down and re-dissolution in HCl) and common crushing (70% <2 mm), riffle splitting, and pulverizing (85%< 75µm) specifications.

Whole rock analysis of 5 samples collected by Setterfield and Bjorkman for Cirrus utilized ALS method CCP-Pkg03 which involves selected procedures for each type of element to ensure complete dissolution of particular elements from the most refractory minerals, and measurement of all of each element in the avoiding analytical overlaps. Major elements were measured by fusing a portion of the rock powder with lithium metaborate prior to XRF analysis. Trace elements, and REEs were analyzed by 2 ICP MS methods involving either direct dissolution of an aliquot of the rock powder or of the lithium metaborate fused powder. Carbon and Sulphur were analyzed by Leco furnace.

ALS quality control methods included inserting into the laboratory sample stream a series of appropriate certified rock standards that allow a statistical assessment of accuracy relative to established concentrations of various elements. Precision is assessed by the degree of variation of concentrations reported for an element in successive analyses of the same standard and by reanalysis of a small number of randomly selected field samples. Furthermore, ALS inserts a series of blanks in the laboratory analytical stream to detect contamination. Elements that returned concentrations above the analytical limit for ME-ICP61 or ME-MS61 were reanalyzed using a sequence of quantitative methods for higher concentrations of base and precious metals as required.

The data provided to the author by Cirrus included sample site coordinates, material descriptions, site coordinates, and ALS data files and certificates of analysis of all analytical results as well as QA/ QC data. The author's QA/QC review initially involved scanning the laboratory analytical data in tabular form for unusual trends indicative of laboratory cross contamination such as observing high concentrations of an element at the beginning of an analytical series (assuming that samples were run in order) that declined exponentially in successive samples. No unusual trends were observed, which was further confirmed by a lack of significant departure from normal values in the laboratory and marble field blanks. From reviewing the QA/QC data the author concluded that the analyses were statistically accurate and precise. It was therefore concluded that the data set results were representative of natural element concentrations in rocks.

The author compiled the analytical and sample coordinate data into ArcGIS and checked coordinates for map plotting. In the data compilation in an excel spreadsheet, the author replaced element concentrations that were reported as below detection limit (e.g. <10 ppm) with a numerical value of half the detection limit (e.g. 5 ppm) to allow numerical processing of the data.

ALS is a certified commercial lab with ISO 9001:2000 certification and no connection to Cirrus or the author other than a regular service provider - client relationship. The laboratory in North Vancouver has also been accredited to ISO 17025 standards for specific laboratory procedures by the Standards Council of Canada (SCC). ALS is a subsidiary of ALS Global, which is a leading testing, inspection, certification and verification company head quartered in Brisbane, Australia that services multiple industries globally and employs over 13,000 staff in over 65 countries.

The author acknowledges that reasonable sampling methodology and secure chain-of-custody were adequately maintained during the course of the project. As mentioned above Cirrus's samples were stored in locked facilities until shipped, and the author's samples were in his custody until directly shipped in a secure container to ALS facilities. In any case the project work was in a remote area and accommodations were at a private fishing lodge with no other guests than the project team. The author's samples were analysed under the author's own account at ALS without indication of source and results delivered directly to the author. The author is unaware of any problem with the analytical procedures, field locations, or data handling that would have an adverse affect on the quality of the data that is represented in this report.

12. Data Verification

The Technical Report includes data from the following categories:

1. Historical exploration data including field geological descriptions, geochemical data for rocks and soils, geophysical data from Induced Polarization surveys and airborne magnetometer surveys, and diamond drilling.

2. Current exploration data including 47 rock samples from the Property.

3. Current exploration data from a Property-wide airborne magnetometer survey.

The author reviewed the historical exploration data in assessment reports available in the public domain on the British Columbia Assessment Report Information System and assessed their reliability by their internal consistency with respect to quality controls described and in relation to known geology of the areas surveyed.

The author verified the Cirrus rock geochemical data by analysis of 7 check samples collected from outcrops at significantly mineralized locations reported by Cirrus and shown on Figure 39. Five samples were collected from outcrops judged by the author to be representative of various parts of the Coho Zone showings and two from the Rig Breccia showing, and these were analysed by ALS using ME-MS61 for a suite of 48 elements and Au-AA23 for gold.

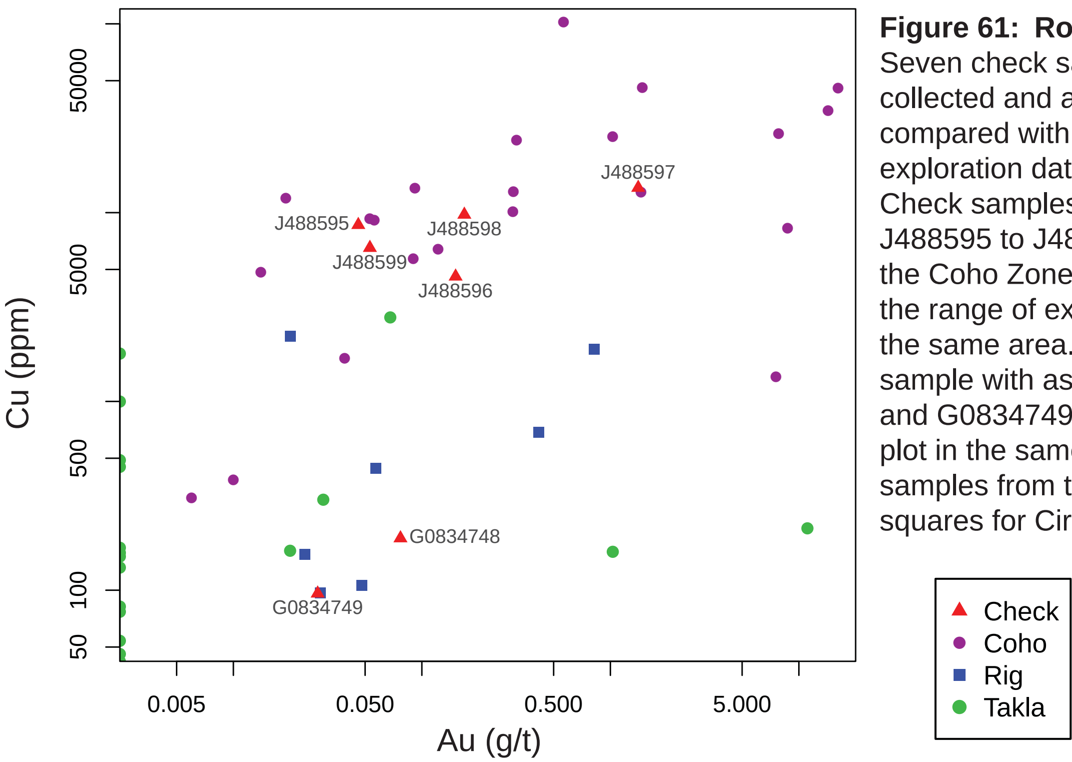


Figure 61: Rock Assay Verification
Seven check samples independently collected and assayed by the author are compared with assays from the Cirrus exploration data set for 2020. Check samples with assay numbers J488595 to J488599 were collected at the Coho Zone and correlate well with the range of exploration samples from the same area. Similarly, two check sample with assay numbers G0834748 and G0834749 are from the Rig Breccia plot in the same area as exploration samples from the Rig Breccia (blue squares for Cirrus samples).

ME-MS61 has lower detection limits than the ME-ICP61 method used by Cirrus at the same laboratory. Results of the author's check analyses are well within the range of element concentrations obtained in Cirrus's samples from the same showings (Fig. 61).

The combined check sample and Cirrus exploration geochemical dataset was also examined by the author in statistical plots (box plots and correlation diagrams) and variation diagrams for trends and patterns that might highlight both natural variations and unusual inconsistencies in the individual data points. All of the variations and trends appeared to be of natural origin revealing important aspects of the geology.

The exploration geochemical data (rock and soil samples) are susceptible to natural variations in the local geological environment and the quality of material collected and thus subject to field decisions on sampling, but not critical in resource evaluations. Rock sample data from early stage exploration was also subject to field decisions and requires evaluation of the context of the collected material, if available, by the qualified person.

Geochemical data, incorporated from previous work, were verified by the same procedures as for the current data, by examining QA/QC information where available and generally reviewing the data sets for unusual non-natural trends indicative of lab contamination. As well, where multiple data sets were available using different analytical procedures than being used in the current exploration programs, elements of material interest were cross checked to discern patterns of under- or over-reporting by the different methods. For older data, prior to the advent of certified commercial labs, the data was verified by the author by comparison with current data.

The geophysical data was verified by examining the internal consistency of the maps and sections and reading the logistics and methodology reports accompanying the data. The author also directly communicated with the geophysicist who conducted the Magnetometer surveys to inquire about conditions on the surveys, equipment issues, and characteristics such as sensor height. As well, the new magnetometer survey data were compared with data from surveys in 1991 contracted by BP and found to be consistent, although the older data presentation is difficult to evaluate.

In the author's opinion the quality of the data collected is wholly adequate for the purposes of early stage exploration of the Chuchi South Property as laid out in this Technical Report (pursuant to item 12 (c) of Form NI 43-101 (F1)) within the limitations described by the author regarding analytical methods used.

13. Mineral Processing and Metallurgical Testing

There has been no historical or recent extraction of rock for the purposes of mineral processing or metallurgical testing undertaken on the Chuchi South Property.

14. Mineral Resource Estimates

The Chuchi South Property is an early stage exploration project; therefore no mineral resource estimates have been made for the Property.

15. Adjacent Properties

The current adjacent property is in the area immediately north of the Property extending to Klawdetelle Creek and immediately west of the Properties north west boundary. The adjacent property is referred to as the Chuchi Property and is owned by Aurico Metals Ltd. It consists of 16 claims bearing names with the word "Chuchi-" and a series of numbers similar to the claim names on the Chuchi South Property, and totalling 6102 hectares in area. No other properties are contiguous with Chuchi South as of the effective date of this report.

Claims have existed at North Chuchi in various configurations since the early 1960s. The main period of intensive exploration took place in the 1980s after Mark Rebagliati staked the Phil group of claims in 1983 and sold them to Digger Resources who in turn optioned them to BP Resources in 1989. Other claims were staked to the north and south including along Klawdetelle Creek by Rio Algom (Dirom and Bentzen, 1972) and to the south as the Skook claims by Nation River Resources and the Klaw claims by Noranda, reviewed above in Item 6 "History".

BP Resources Ltd did extensive exploration work in the area of the present Chuchi Property mainly in the period between 1988 and 1992 including magnetometer surveys, ground IP, soil geochemistry, and diamond drilling. They outlined a significant copper gold porphyry deposit with coincident geochemical Cu-Au anomalies within an IP chargeability anomaly with an offset resistivity high and a cluster of discrete magnetometer highs each 150 meters in diameter shown in Figures 62 to 64). A resource estimate was made during this period of exploration by Digger Resources in 1990, the optionor of the property, but the author could not find the original source of the calculations and concluded that it is not well enough documented to disclose. A tabulation of significant intervals of mineralization in the drill holes is found in Table 3.

Rio Algom explored the KLA property immediately north of the Phil claims and utilized an airborne magnetometer survey, soil geochemistry (Fig. 61), and ground IP (Fig. 63), to design drill targets, which also resulted in discovery of a significant copper-gold porphyry system (Fig. 63) (Campbell, E.A., 1989, 1990, 1991).

The exploration history leading up to the discoveries started in 1971 when Serem Ltee' staked claims north of Chuchi Lake and collected approximately 520 soil samples on a grid centered approximately 2.6 km north of Chuchi Lake outlining a narrow, east-trending 700 m by 50 m soil geochemical anomaly in volcanic rocks. In the 1980s BP-Selco rediscovered the same soil anomaly and copper mineralized rocks at what became known as the BP-Chuchi porphyry copper-gold occurrence (Rebagliati, 2005).

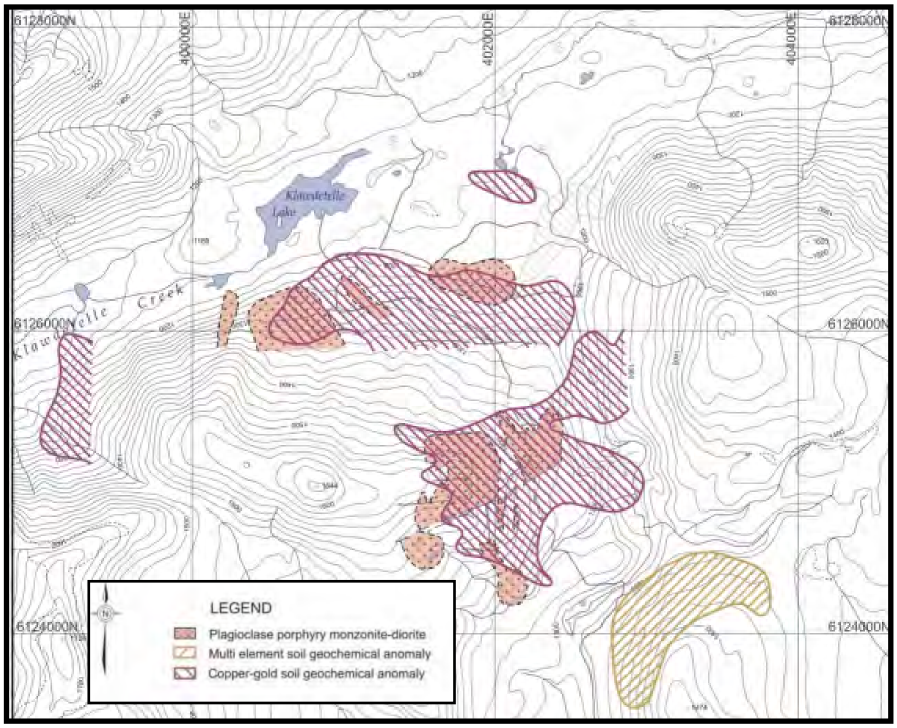


Figure 62: BP-Chuchi Soil Geochemical Anomalies
Plagioclase porphyritic monzonite to diorite stocks in pink tone are overlain by areas of interpreted coincident copper gold geochemical soil anomalies. Copper exceeds 250 ppm, gold 100 ppb, and silver 1 ppm. (Heberlein et al., 1984; Rebagliati et al., 1985; Wong, 1989)
Grid lines are at 2 km spacing for scale and coordinates are in NAD 83 UTM Zone 10. Map adapted from Rebagliati (2005)

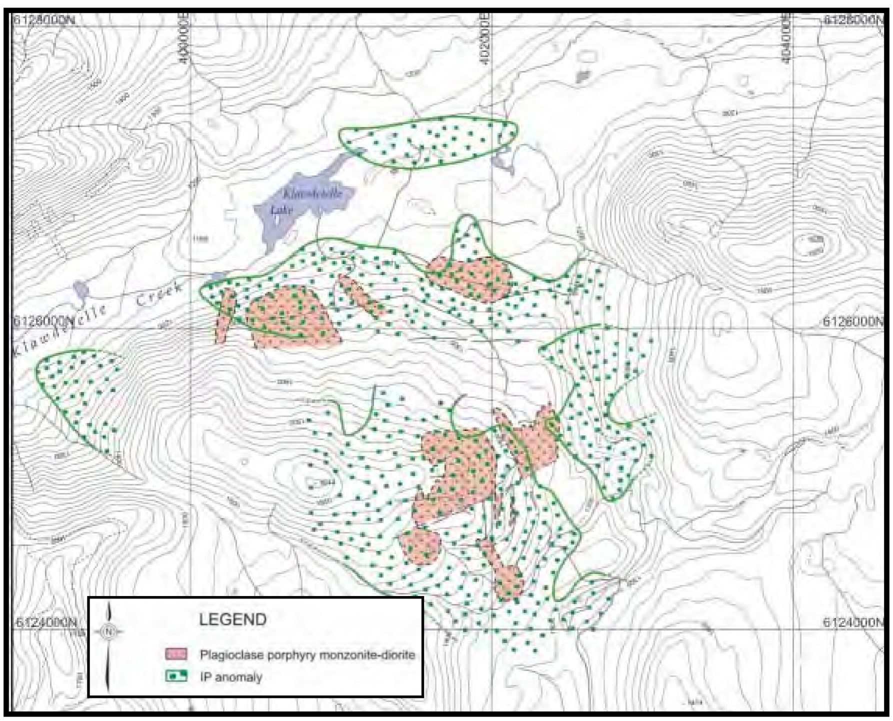


Figure 63: BP-Chuchi IP Anomalies
Plagioclase porphyritic monzonite to diorite stocks in pink tone are overlain by areas of high priority chargeability anomalies.
Grid lines are at 2 km spacing for scale and coordinates are in NAD 83 UTM Zone 10. Map adapted from Rebagliati (2005)

In 1983 Mark Rebagliati staked the Phil claims over a copper-gold-arsenic soil and rock anomaly identified in a regional exploration program by Selco Inc. (Rebagliati, 1983). The copper-gold soil anomaly was subsequently expanded to an area of 600 by 1700 meters and a multi-element (Ag-Pb-Zn-As-Ba) anomaly was outlined to the SE (Fig. 62). The copper-gold anomaly is spatially associated with high copper and gold in rock samples (Heberlein et. al. 1984). In 1985, BP trenched, mapped, and sampled an area centered on the core of the copper-gold geochemical anomaly and came up with three significant intervals: 0.13% Cu and 0.22 g/t Au over 33 m; 0.20% Cu and 0.11 g/t Au over 21 m; and 0.19% Cu and 0.22 g/t Au over 24 m. The mapped host rocks were identified as potassic and propylitic - altered plagioclase monzodiorite porphyry and biotite hornfelsed volcaniclastic siltstone (Rebagliati et. al. 1985).

The discovery of the Mount Milligan copper-gold alkalic porphyry deposit 35 km to the SE in 1987 by Mark Rebagliati spurred more intensive activity. A 150 line-km aeromagnetic survey was flown over the project claims in an attempt to identify buried magnetite-rich plagioclase porphyritic diorite/monzonite stocks similar to those hosting the Mt Milligan porphyry copper-gold deposits. The claims were also explored by 41 line-km of IP and 30 line-km of ground magnetometer surveys over the soil geochemical anomalies (Wong, 1989). The soil geochemical anomalies (Fig. 61) were determined to correspond to areas with IP chargeability anomalies outlined in Figure 62. The SW part of the multi-element anomaly in Figure 61 was tested by six diamond drill holes totaling 763.2 m, but it was concluded that the IP anomaly and overlying soil anomaly was highlighting narrow structural zones with multi-element enrichment of possible of epithermal origin (Wong, 1990). To explore the core of the large copper-gold soil anomaly, three holes, 89-7 to 89-9 located on map in Figure 64 (intervals shown in Table 3), and totaling 613 m, were drilled. Drill hole 89-7, had the best mineralized interval of 100 m grading 0.28% Cu and 0.32 g/t Au and including 16 m grading 0.75% Cu and 1.13 g/t Au (Wong, 1990). This intersection encouraged BP to drill an additional 29 holes in 1991 totaling 5315.7 m within the IP anomaly that was highlighting the sulphide-bearing alteration zone (Wong and Barrie, 1991). The drill holes from the BP exploration are shown on Figure 64, which outlines the combined geochemical and IP anomalies and the altered monzonite porphyry intrusions. The drilling identified a large area of copper and gold-bearing potassic alteration caused by the intrusion of a cluster of small plagioclase porphyritic diorite-monzonite stocks, dykes and sills into Chuchi Lake Succession siltstones, bedded tuffs, agglomerates and andesitic flows.

The area of the multi-element soil anomaly that was interpreted as a possible epithermal vein system by Wong, 1989) may have a different interpretation according to Rebagliati (2005) on the basis of the similarities at the Mount Milligan: numerous polymetallic veins situated peripheral to the Mt Milligan porphyry copper-gold deposits suggest the above zones, interpreted as a separate epithermal vein system, may instead be an outward zone of nearby porphyry mineralization (Rebagliati, 2005).

The reader is cautioned that the presence of significant mineralization in an adjacent property does not necessarily imply the presence or type of mineralization on the Property that is the subject of this Technical Report. The author has been unable to verify the information regarding the BP-Chuchi Property and the information disclosed above is not necessarily indicative to the mineralization on the Property that is the subject of the Technical Report.

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Figure 64 and Table 3 follow

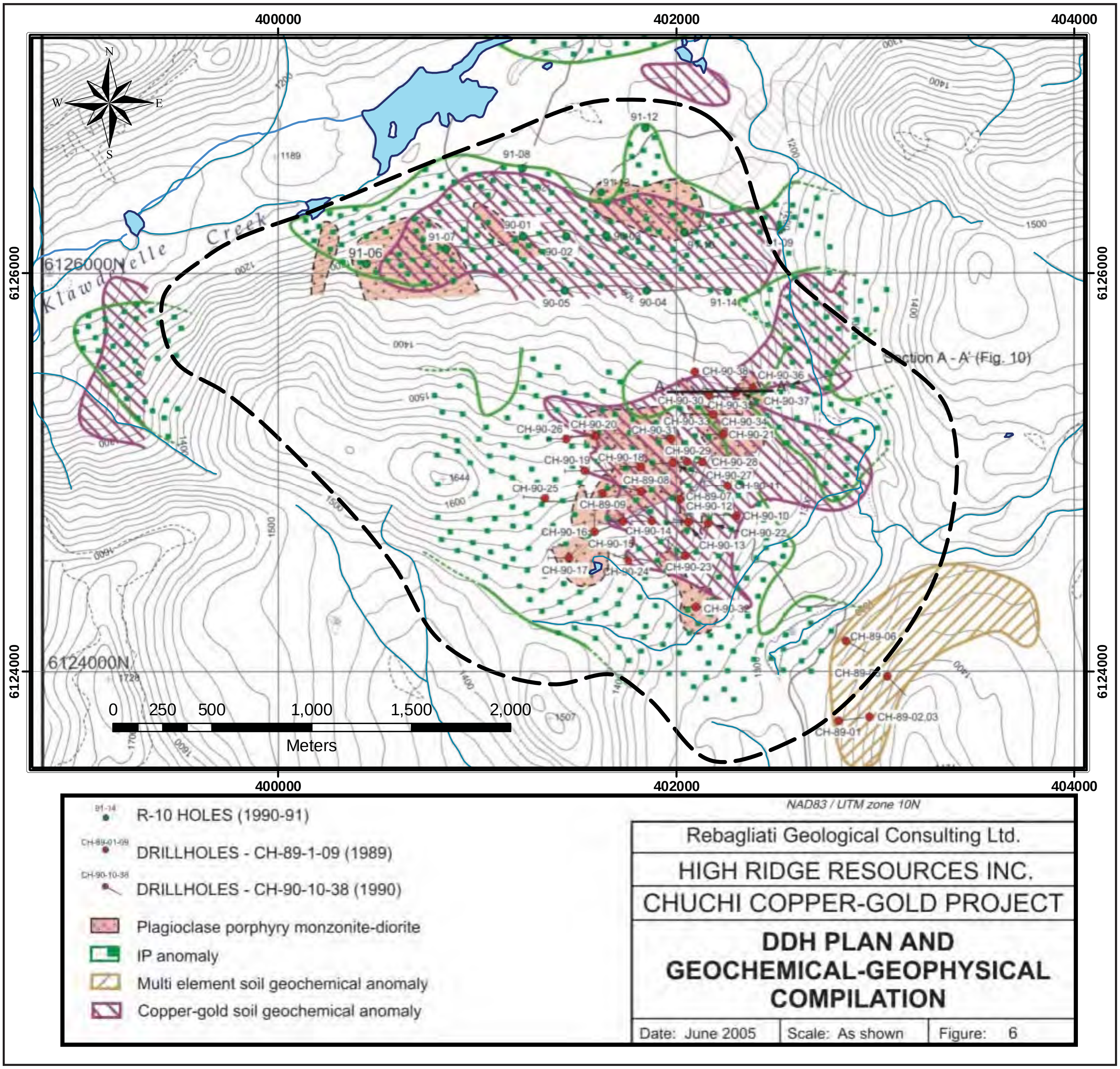

Figure 64: Exploration Compilation of the adjacent BP-Chuchi property by Rebagliati (2005)

The thick dashed line outlines the area shown on Figure 35 as the North Chuchi Halo. Coincident areas of copper gold soil geochemical anomalies shown in Figure 62 (right sloping red hash) and high IP chargeability, shown in Figure 63 (green dots) are focused around several small plagioclase porphyritic monzonite-diorite stocks (red tone). Diamond drill holes targeted (large red dots; labelled) the most promising of the coincident features. Significant intervals of mineralization are tabulated below and drill holes locations labelled on the map. The left sloping hashed area at the lower right is a multi-element soil anomaly. A magnetic high occurs in the area of the map north of 6125900 N, which was the Rio Algom KLA Property and evaluated separately (Campbell, 1990) from the BP-Chuchi to the south. In the BP-Chuchi Phil claims a ground magnetometer survey showed a cluster of pronounced 150 m diameter magnetic highs coincident with the monzonite intrusions (Lloyd and Kilt, 1989).

The area of the KLAW claims of the former BP-Resources property is about 6 kilometers north of Cirrus's Chuchi South Property. Heavy dashed line is the North Chuchi Halo shown in Figure 35.

Grid lines are at 2 km spacing for scale and coordinates are in NAD 83 UTM Zone 10. Map adapted from Rebagliati (2005) by the author in ArcGIS 9.3, December, 2020.

Drill Hole	Interval (m)	Length (m)	% Cu	g/t Au
89-7	38–138.0	100.0	.28	.31
includes	82- 98.0	16.0	.71	1.34
89-8	152-200.0	48.0	.25	.24
89-9	170-186.0	16.0	.11	.20
90–10	20-48.0	28.0	.12	.02
	88-104.0	16.0	.15	.03
90-11	38-60.0	22.0	.13	.05
90-12	22-42.0	20.0	.23	.19
	56-66.0	12.0	.14	.13
	126-134.0	8.0	.15	.34
90-13	8.3-32.0	23.7	.21	.19
	58-68.0	10.0	.23	.36
	146-161.2	15.2	.34	.44
90-14	2.1-16.0	13.9	.13	.22
90-18	3.7– 155.1	151.4	.11	.12
90-20	38–42.0	4.0	.26	.53
	130-142.0	12.0	.15	.32
90-21	50 – 80.0	30.0	.18	.12
	94– 102.0	8.0	.17	.13
	120-130.0	10.0	.18	.16
	150-158.2	8.2	.22	.08
90-22	218-230.0	12.0	.17	.06
	240-246.0	6.0	.48	.29
90-23	38 – 54.0	16.0	.36	.58
	86-94.0	8.0	.22	.21
	180-206.0	26.0	.10	.16
90-24	70 – 84.0	14.0	.20	.05
90-27	32-226.0	194.0	.21	.21
includes	156-226.0	70.0	.30	.34
90 – 29	60–76.0	16.0	.15	.09
	100-124.0	24.0	.15	.11
	130-164.0	34.0	.15	.12
	242-272.0	30.0	.23	.18
90-30	98-256.0	158.0	.22	.10
90-31	12-18.0	6.0	.07	.46
90-32	81-83	2.0	.61	3.14
90-33	39.6-304.5	264.9	.20	.12
includes	64-152.0	88.0	.37	.21
90-34	75.3-213.1	137.8	.14	.08
90-36	51.5-243.5	192.0	.16	.12
90-37	54.3-262.1	207.8	.22	.12
includes	110-154.0	44.0	.35	.18
90-38	132-144.0	12.0	.14	.12

Table 3: Significant Mineralized Intersections from the BP Resources Canada Ltd Drilling Results from the 1989 and 1990 drilling programs (Wong and Barrie, 1991) in the North Chuchi Property. Drill hole locations are labelled on the map in Figure 63.
Data table was compiled by Rebagliati (2005) from Wong and Barrie (1991).

16. Other Relevant Data and Information

There is no additional relevant data or information known to the author that is not disclosed in this technical report on the Chuchi South Property.

17. Interpretation and Conclusions

17.1 Historical Exploration and Regional Geology

The Chuchi South Property is centrally located in the Nation Lakes Porphyry Camp, which is a significant sector of the Quesnel Terrane area hosting a cluster of copper-gold porphyry deposits with a strong alkalic affinity. The Quesnel Terrane stretches for over a 1000 kilometers from southern British Columbia north, and in some intervals hosts clusters of large porphyry copper-gold deposits including Afton, Mt Polley and Copper Mountain and in the vicinity of the Property the recently operational Mount Milligan. Kemess and other copper-gold porphyries lie to the north. At the latitude of the Property the terrane is about 100 km wide and fault bounded on both sides by major dextral fault system separating it from the Cache Creek Terrane in the west and ancestral North America on the east.

The Property is located within a few kilometers of the north shore of Chuchi Lake in a remote, but readily accessible region that has a strong logging industry and large scale mining at Mt Milligan only 32 kilometers to the southeast. The terrane on the Property and its vicinity is moderate in relief and underlain by tills and glacial gravels suitable for mining infrastructure development. The nearest communities are Fort St James, Vanderhoof, and Prince George.

The geology of the Property consists of Upper Triassic and Lower Jurassic shoshonitic volcanic rocks that were deposited subaerially and intruded by stocks and dykes of similar alkalic composition. Whole rock analyses from rocks collected by Cirrus have confirmed a shoshonitic composition in the “dioritic” intrusions of the central part of the Property. The intrusive rocks are an extension of the Hogem Batholith which lies to the north.

The alkalic geochemistry of the igneous rocks is a necessary aspect of the alkalic porphyry copper-gold association. Mafic rocks are typically augite and plagioclase porphyritic, contain primary titanomagnetite, and groundmass potassium feldspar in contrast to more common calc-alkaline volcanic arc rocks which are dominantly hornblende - plagioclase porphyritic. Porphyry copper-gold deposits have particular characteristics e including monzodiorite to monzonitic host intrusions of small size typically in the order of 500 meters that occur in clusters spread over a few kilometers, and are high level apophyses of deeper plutons. The copper-gold deposits occur in clusters proximal to or within the stocks as exemplified by Mount Milligan or the giant Galore Creek deposit, which is in similar age and composition rocks in the Stikine terrane. The porphyry stocks intrude volcanics and derived sediments that are close in age to the intrusions and many common textures indicate intrusion prior to lithification.

Very commonly the volcanic and intrusive host rocks have a crowded feldspar porphyry texture of small plagioclase phenocrysts nearly touching, in addition to the typical augite and biotite phenocrysts, primary magnetite and potassium feldspar. This texture was observed by the author in the eastern part of the property where is is mainly underlain by volcanic strata. The deposits are generally simple in mineralogy with chalcopyrite being the main sulphide in a core zone that is potassically-altered and magnetite-enriched, which is not to be confused with, respectively, the primary K-feldspar in the groundmass and igneous titanomagnetite. Outwards from the chalcopyrite mineralized potassic core, copper /gold ratio drops and the gold grades increase into a zone of propylitic and or sericitic alteration. Discrete sulphide and sulphosalt veins are found in the periphery of the main deposits often causing poly-metallic soil anomalies.

These copper gold deposits amenable to geophysical and geochemical exploration techniques. The first technique of importance is district scale airborne magnetometer surveys to detect the magnetite either in the primary intrusion or the secondary magnetite associated with potassic alteration. Most of the Property was previously surveyed in this way between 1989 and 1991 when BP Resources optioned ground from Noranda and Nation River Resources. Induced polarization survey are essential for closer proximity by detecting chargeability anomalies from stockwork sulphide mineralization. High priority anomalies are discriminated from formational anomalies by high resistivity characteristics. The southern half of the Property was surveyed in 1991 as part of the BP resources program on the Skook Property as it was known. Coincident IP and magnetic anomalies are a strong characteristic of this deposit type and BP discovered a large copper gold porphyry deposit on the BP-Chuchi Property 6 kilometers north using this type of data combined with soil geochemical surveys.

Almost all of the Property has been previously surveyed by soil geochemistry in various phases beginning in 1967, but many of the older surveys did not include gold analyses of any other useful tracers such as arsenic and bismuth. Large copper and gold anomalous areas stretch across the northern part of the Property and also in areas of the south. The soil geochemistry at Mount Milligan was a primary source of the initial discovery there, but has been well studied and shown to be complex with many different types of physical dispersion of anomalous material in all directions around the main deposits. Gaps in anomalous soil results at Mt Milligan were observed directly over the main deposits and many scattered point anomalies lie well beyond the deposits resulting from glacial dispersion related easterly flowing ice sheets and colluvial dispersion down slopes to the west. On the BP-Chuchi property several large copper and gold soil anomalies were found coincident with the geophysical anomalies and proved to directly reflect mineralization. Polymetallic anomalies at the BP-Chuchi were shown to be associated with discrete veins, which could be similar to peripheral vein mineralization at Mount Milligan, classified in some cases as epithermal in origin.

Knowledge of the surficial geology is important in properly interpreting soil geochemical surveys. On the Property overburden consists mainly of thin till veneers and thicker till blankets deposited by east-flowing ice sheets. However, some historic drill holes ran through several tens of meters of gravels, which would also interfere with soil geochemistry. About 12 drill holes on the Property were drilled either by Noranda or by BP, with no significantly mineralized intersections observed. However, in the north part, no IP surveys were used and in the south, only a few holes in the order of 150 meters were drilled on each target. Knowing that the typical copper-gold deposits cover areas of only about 20 hectares while the Property encompasses an area over 150 times that size lends doubt to the probability that the few holes drilled accurately represented the targets.

17.2 Property Exploration Results

The current exploration work by and on behalf of Cirrus has confirmed several characteristics of the geology of the Property that make it prospective for copper-gold alkalic porphyry deposits. These include the presence of shoshonitic volcanic rocks and alkalic intrusions determined by whole rock analyses, large curvilinear magnetic highs possibly indicative of swarms of small high level intrusions, and significant grades of copper and gold in grab samples from the Coho Zone, which happens to be one of the few areas of semi-continuous outcrop on the

Property. The 5 whole rock analyses were from relatively unaltered rocks and 4 of them plot in the shoshonitic field of K_2O-SiO_2 classification diagram. Mineralized rocks from the Coho Zone have very high K/Na ratios up to 60, and while *perhaps* casting doubt on the validity of the K_2O/Na_2O ratios in the 5 whole rock analyses, are clearly the result of depletion of Na to levels below 0.1 wt% associated with the alteration The whole rock analyses conversely show consistent Na_2O ranging from 2.94 to 3.82 and K_2O from 1.6 to 4.26.

The 47 grab samples collected for Cirrus plus the author's 7 check samples show a good range of copper and gold grades ranging for gold from sub detection 0.005 g/t to 16.15 g/t and for copper from 42 to 102500 ppm (10.2%). Moreover, over half the numbers for gold are over 0.053 g/t with an average of 1.41 g/t and for copper half are over 1745 ppm and with an overall average of 8720 ppm (or 0.87 %). At the Coho Zone grades are generally higher with half the gold values above 0.3 g/t and averaging 2.88 g/t and for copper half the values are over 1.295% averaging 1.95%. Generally, these numbers represent local zones of visibly higher grade mineralization to be expected of grab samples at this stage in the evaluation of the Property.

The airborne magnetic survey provides definitive information that requires a significant amount of field checking through geological mapping to properly interpret. Magnetic highs probably correspond to magnetite phyric intrusive and volcanic rocks including monzogabbros and absarokites, but may also be areas of potassic alteration. However, any significant copper gold porphyry system with potassic alteration may also have peripheral propylitic or sericitic alteration that would be magnetite destructive by oxidation to hematite and would create an annular low magnetic zone.

17.3 Risks and Uncertainties in the Interpretation of the Exploration Results

Exploration results directly obtained by Cirrus include initial geological mapping and compilation of previous work, assaying of mineralized rock samples from a few selected sites and zones on the Property, and an airborne magnetometer survey of the whole Property. Concurrently, the exploration has been guided by compilation and review of previous exploration work disclosed in the History section of this report. At the current stage of exploration in some areas there are significant uncertainties in the interpretation of the available data.

Soil geochemical anomalies on the Property, delineated by previous work, reflect to some degree glacial dispersion in an easterly direction down ice from source mineralization, which causes uncertainty in attributing an anomaly to the rocks directly underlying it. Moreover, as has been documented at Mount Milligan there could be other dispersal mechanisms such as hydromorphic and colluvial processes that have not been recognized, further complicating interpretation of geochemical anomalies. The risk of misinterpretation of soil geochemical anomalies on the Property is that potential drilling targets will be missed. However, it is understood from surficial geological surveys, that glacial material on the Property is mainly thin till layers that have been moved in one direction only and therefore the risk is relatively low. Overcoming the risk is best done by mapping the surficial geology.

The interpretation of the rock assays may bias attention towards areas that in the porphyry model are actually peripheral to main zones of mineralization. Discrete veins may be mineralized by sulphosalt minerals such as tennantite giving both high copper and high silver assays. Arsenic analyses show a good correlation with copper in the assays available, but it is unknown if this is an indication of peripheral or core zoning. High gold zones with low copper-gold ratios are also part of the alkalic porphyry deposit model, but high gold assays may not be from such a zone and instead may be related to peripheral veining. The risk is that interpretation of assays alone may lead to incorrect use of the deposit model and result in false targets. Mitigation of this risk may be achieved by careful consideration of the detailed geology of the mineralized samples including identification of the host rock types. In this case, crowded feldspar porphyritic monzodiorites are a key mineralizing host rock and should be a criterion in evaluating the importance of assay results.

Results from the airborne magnetometer survey have been subjected to a preliminary interpretation in this report. Assigning rock type to the anomalies on the TMI image has to deal with uncertainty in the presence of secondary or primary magnetite, both of which produce a magnetic high, as well as magnetic lows caused either by sediments or by magnetite destructive alteration. Correct interpretation should involve considering alterative explanations for magnetic patterns and determining ways of resolving them.

Induced Polarization ("IP") surveys are a powerful tool in porphyry deposit exploration. Cirrus has not yet conducted any IP work, but the southern half of the Property was surveyed by BP in 1991 prior to a minimal drilling program. Chargeability anomalies are a necessary indication of porphyry type mineralization, but they are not a sufficient indication and can have other explanations. A risk inherent in IP interpretation is assuming that a chargeability anomaly indicates a mineralized system and committing exploration expenditures on that basis. Strong IP anomalies may also be formational, indicated by coincident high conductivity or low resistivity, and representing e.g. sedimentary rocks with authigenic pyrite. Careful evaluation and prioritization before selecting drill targets should include evaluation of coincident magnetic anomalies and, using the criteria discussed above, coincident geochemical anomalies of the correct suite of anomalous elements.

17.4 Impacts of Risks and Uncertainties on Project Viability

To be viable the project objective is to discern a significant copper-gold alkalic porphyry system that warrants further exploration. While the Property has been identified as having geological indications consistent with alkalic porphyry copper-gold deposits, there is no certainty that such a deposit exists in the Property. If one does exist, then the impact of risks is in not discovering the deposit before exploration funds run out. If one does not exist, then the risk is in spending too much money on exploring for one by missing definitive negative signs early in the exploration of the Property.

18. Recommendations

18.1 Exploration Priorities and Methods

The choice of exploration methods on the Property has to consider the available exploration data and the surface characteristics. The Property has a low percentage of outcrop except around incised topographic features like the ravine in the Coho zone or the creek through the Rig Breccia. Terrain relief is moderate to low and the area is heavily forested, both with second growth and primary forest. Old logging roads and exploration trails abound, but many are impassable even on foot.

The project now has a complete airborne magnetometer survey of the entire Property and there are old surveys that extend to the east and west. The old survey data are only recorded as black and white contour maps, which are difficult to interpret, but might be amenable to some sort of upgrade. Ideally the old digital data could be found. The old data might be reconstructed to compare with the new data and the extensions beyond the Property might be used to interpret patterns in the Property magnetic data.

IP data exists for the southern half of the Property that was the area of the Skook claims. However, the survey only measured the 1 to 4 separations from the current electrode and deeper soundings may be important for accurate interpretation. The old data might be reprocessed if available as digital records or the pseudo sections might be digitized. No budget can be recommended for this since it is not assured that the old data can be reprocessed.

No IP data is known for the northern half of the Property and this should be a major priority for exploration especially in the vicinity of the Coho Zone. It is recommended that new IP surveys use arrays designed for the alkalic porphyry type of target and with the known depth of overburden. Inversions of the data are an excellent aid for interpretation and should be constructed both for vertical profile along lines and as horizontal depth maps. At a minimum a dipole length of 100 meters and measuring the 1st to 6th or better 10th separations should be used. That would give imaging to between 250 and 500 meters depth. Line cutting may be required although in the author's experience with recent IP surveys, the main requirement is a reasonably accessible, but not necessarily straight lines through bush since inversion techniques and good GPS station data can readily compensate.

However, it would be useful to measure to deeper levels to establish more about the broad structure of any anomalies encountered. Double surveying using combinations of dipole lengths and logistically feasible separations should considered to get more precision near surface and greater depth in a single pass. Examples might be 50 m dipoles measuring 1 to 4 separations combined with a 100 meter dipole measuring the 2nd to 8th separations. Alternative two pass methods might be employed provided inversions are made of all the data.

At a minimum the area of the Coho anomaly should be surveyed probably with N-S lines 1500 to 2000 meters long and spaced at a maximum of 250 meters apart, with a minimum of 5 lines. This should take about 6 to 8 days for a contract geophysics company with a 5 person crew, including mobilization and cost in the order of $40,000. Line cutting could be done in tandem with the IP survey and perhaps by a member of the IP crew as needed especially if this facilitated occasionally doing more complex arrays requiring a 6th person.

Old soil geochemical data has been reviewed and some has been digitized, such as the Noranda survey of the Klaw claims that used to cover much of the northern half of the Property. The existing data was acquired over about a 25 year period from the earliest days in the 1960s when analytical techniques were confined to AAS which could only measure single elements to the early days of ICP measurements in the 1980s when whole suites of elements could be rapidly measured simultaneously. Hence the quality of measurements has varied and availability of analytes has increased dramatically to include many pathfinder elements. Threshold levels in the data sets have also been variously interpreted and for example early reports quoted 110 ppm Cu, while later reports used 250 ppm as the anomalous level. This variation may reflect the area surveyed or it may reflect differences in sensitivity of analytical methods either between AAS and ICP or even between labs. Where surveys overlap, the data sets should be compared and appropriate thresholds assigned or the data adjusted by some factor. This may produce greater coverage, but in many cases older surveys did not include gold or any pathfinders such as arsenic. Where coverage does not exist, new surveys should be considered. Additionally, small numbers of samples might be collected to tie together the old survey data areas. If IP survey grid lines are cut, those should also be soil sampled where logging disturbance is not great and existing data is suspect. Otherwise, samples should be collected adjacent to roads outside of the disturbed road building material. Likely, the quality of soil sampling and processing did not change significantly.

Essential to the success of the project is accurate geological mapping to delineate the kind of small crowded porphyritic monzodiorite intrusions that are typical of the alkalic porphyry clan of deposits. The major impediment to mapping is actually finding outcrops in the area and getting through dense bush. Efforts at partial road clearing should be considered. Vehicle access is not required although ATVs might be an asset for longer distances. Line cutting of grids is should not be considered except for IP surveys. Methods to consider include heavy tracked rotary mulchers capable of cutting through alder and spruce saplings overgrowing roads, or simple trail along old roads and through bush making to facilitate rapid foot access by geologists. the former may require permits, while the latter would not.

Mapping should document rock types thoroughly and initially focus on establishing clear unambiguous lithological characteristics for perhaps three plutonic units of significant extent. The purpose would be to establish an order of intrusion and aim to find the most prospective granitoid types.

18.2 Recommended Program and Budget

The exploration program recommended is in two phases. The first is a limited program to determine the nature of mineralization in the Coho Zone by mapping, IP geophysics, and lithogeochemistry. The second is contingent on finding positive indications of a porphyry system by means of the results of the first phase and involves completion of a IP geophysics across the Property and drill intensive exploration of targets.

A budget is proposed for the first phase amounting to $110,657 is presented in Table 4. It is predicated on a 10 line, 20 line kilometer IP survey of a 400 hectare area centered on the Coho Zone, and geological mapping and lithogeochemistry on the remainder of the Property. Improvements to access by line cutting and footpath clearing along old roads should also be contemplated, but are not essential. The field work would involve at least two experienced geologists involved first in systematic recompilation and reprocessing of the of geophysical, geochemical, and geological data reviewed in this report, and second in field mapping of the Property, direction of the IP survey, and follow-up work on results.

Chuchi South Project

ITEM	days	rate	COST
Geologist	25	$800.00	$20,000.00
Geologist	15	$800.00	$12,000.00
IP Survey days	10	$4,130.00	$41,300.00
Mob-demob geophysics	2	$2,050.00	$4,100.00
Camp/accommodation	15	$500.00	$7,500.00
transport crew	15	$200.00	$3,000.00
Geochemistry: soils	150	$42.95	$6,442.50
Geochemistry: rocks	100	$48.15	$4,815.00
Line cutting	7	$1,000.00	$7,000.00
Administration	6	$750.00	$4,500.00
			$110,657.50

Table 4: Chuchi South: Recommended Phase One Budget

Contingent on positive indications a second phase program should pursue drill targets with ten drill holes averaging 300 meters each and a 40 line kilometre IP survey of the remaining parts of the Property that appear prospective. The budget for the second phase program is presented in Table 5 and amounts to $837,850.00.

Chuchi South Project: ***Phase II***			
ITEM	**days**	**rate**	**COST**
Geologist	25	$800.00	$20,000.00
Geologist	25	$800.00	$20,000.00
Assistants (2 for 15 days)	30	$400.00	$12,000.00
IP Survey days	20	$4,130.00	$82,600.00
Mob-demob geophysics	2	$2,050.00	$4,100.00
Camp/accommodation	15	$500.00	$7,500.00
transport crew	15	$200.00	$3,000.00
Diamond drilling	3000	$200.00	$600,000.00
Geochemistry: drill core	1000	$48.15	$48,150.00
Line cutting	12	$1,000.00	$12,000.00
Road clearing kilometres	20	$1,200.00	$24,000.00
Administration	6	$750.00	$4,500.00
			$837,850.00

Table 5: Chuchi South Project: Phase Two Budget

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20. Certificate of Qualified Person

Statement of Qualifications: Hardolph Wasteneys Ph.D., P.Geo.

I, Hardolph Wasteneys, Ph.D, P.Geo., resident near Strathcona Park Lodge, Upper Campbell Lake at 40960 Gold River Highway, Campbell River, British Columbia, do hereby certify that my qualifications, stated below, apply to the National Instrument 43-101 F1 Technical Report on the Chuchi South Property, Central British Columbia (the "Technical Report") authored by me as of the effective date of July 7, 2021.

1. I am a self employed Professional Geoscientist registered as a member of the Association of Professional Engineers and Geoscientists of British Columbia, member number 32102, and have worked primarily in mineral exploration, mining, geological and U-Pb geochronological research, and geological education since 1976.
2. I graduated with the degree of Bachelor of Science in Geological Engineering, Mineral Resources option from the Faculty of Applied Science, Queen's University, Kingston in 1979 by which date I had 10 months of geological field experience in Ontario, British Columbia and NWT.
3. My degree of Doctor of Philosophy was granted by Queen's University, Kingston in 1990 in the field of economic geology with research specialized in the study of epithermal ore deposits and shoshonitic volcanics of southern Peru under the supervision of Prof. Alan H. Clark. My research work involved 3 months of field work at a remote mine.
4. In post-doctoral research I worked at the Jack Satterley Geochronology Laboratory in the Royal Ontario Museum directed by Dr. T. E. Krogh from 1990 to 1997 in the field of U-Pb geochronology and completed numerous independent studies on the timing of ore deposition and regional metamorphism in collaboration with university and government survey geologists and resulting in several publications in peer reviewed international journals.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Properties ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
7. Relevant field experience for evaluation of the Chuchi South Property includes exploration and research in volcanogenic massive sulphide deposits at Palmer (Haines AK, 2006 to 2009 and 2020), in magmatic hydrothermal deposits at Brynnor (iron skarn 2008-2009 Vancouver Island), copper skarns and porphyries (Galore Creek, 2011; Vancouver Island, ongoing), molybdenum porphyries (Cassiar, 1979) and exploration for porphyry copper deposits in the Dease Lake area (2013-2014). My recent exploration work has focused on epithermal and precious metal vein deposits in the Terrace - Smithers area. My Ph.D. thesis research was on establishing connections between magmatic hydrothermal ore deposits and shoshonitic/alkalic magmatism.
8. I have no beneficial interest in Cirrus Gold Corp., am independent of the entities applying all of the tests in Section 1.5 of NI 43-101 and hold no interests in any aspects of the Chuchi South Property.
9. I have not had prior involvement with the Chuchi South Property that is the subject of the Technical Report.
10. I am responsible for all aspects of the Technical Report including my presentation and interpretation of the Cirrus Gold Corp. field data
11. I visited the Chuchi South Property on September 9, 2020 for the purposes of this Technical Report.
12. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

July 7, 2021

21. Consent Form

To: British Columbia Securities Commission

Alberta Securities Commission

Canadian Securities Exchange

Dear Sirs/Mesdames:

Re: Cirrus Gold Corp. (the "Issuer")

I, Hardolph Wasteneys, Ph.D., P.Geo, do hereby consent to the public filing of the technical report entitled "NI 43-101 Technical Report on the Chuchi South Property, Central British Columbia" and dated effective July 7, 2021 (the "Technical Report") by the "Issuer" with the securities regulatory authorities referred to above. I do further hereby consent to the use of extracts from, or a summary of, the Technical Report, in the final prospectus of the Issuer dated July 7, 2021 (the "Final Prospectus") and to being named in the Final Prospectus.

I confirm that I have read the Final Prospectus and that the disclosure in the Final Prospectus fairly and accurately represents the information in the Technical Report that supports the disclosure in the Final Prospectus.

I have no reason to believe that there are any misrepresentations in the information contained in the Final Prospectus that is derived from the Technical Report or that are within my knowledge as a result of the services performed by me in connection with the Technical Report.

Hardolph Wasteneys, Ph.D. P.Geo.

July 7, 2021

Date and Signature Page

Effective Date of this Report: July 7, 2021
Last Revision Date: July 7, 2021

Date of Signing: July 7, 2021

Hardolph Wasteneys

Hardolph Wasteneys Ph.D. P.Geo.