

BC Geological Survey
Assessment Report
38988



ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: 2019 Prospecting and Geochemistry of the Sparrowhawk Project

TOTAL COST: \$35801.79

AUTHOR(S): Jeff Kyba
SIGNATURE(S):

A handwritten signature in blue ink, appearing to read "JKYBA", written over a horizontal line.



NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):
STATEMENT OF WORK EVENT NUMBER(S)/DATE(S) : 5768404

YEAR OF WORK: 2019

PROPERTY NAME: Sparrowhawk

CLAIM NAME(S) (on which work was done): 1065672, 106578, 106750, 1065674, 1065746, 1065747, 1065673, 1065695, 1065925

COMMODITIES SOUGHT: copper, gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 093L 219, 093M 003, 093M 160, 093M 198, 093M 199, 093M 201

MINING DIVISION: Omineca

NTS / BCGS: 90M/1E

LATITUDE: 55 ° 05 ' _____ "

LONGITUDE: 126 ° 11 ' _____ " (at centre of work)

UTM Zone: 9 EASTING: 678675 NORTHING: 6103720

OWNER(S): ARCWEST EXPLORATION INC.

MAILING ADDRESS: 2300 – 1177 W HASTINGS ST. VANCOUVER BC V6E 2K3

OPERATOR(S) [who paid for the work]: ARCWEST EXPLORATION INC.

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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) BABINE INTRUSIONS, PORPHYRY COPPER - GOLD, BELL, GRANISLE, MORRISON, BIOTITE FELDSPAR PROPHYRY

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:
33939, 33643, 31469, 29629

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock		46	2000
Other			
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic		9913 HA	33801.79
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other			
		TOTAL COST	35801.79

ASSESSMENT REPORT ON
PROSPECTING AND GEOCHEMISTRY
OF THE SPARROWHAWK PROJECT

North-Eastern Babine Lake
ARCWEST EXPLORATION INC.

Mineral Titles Online Tenure Numbers
1065672, 1065673, 1065674, 1065695, 1065746, 1065747, 1065748, 1065750, 1065925, 1065927,
1065929 and 1065931

OMINECA MINING DIVISION
NTS 093M/1E 55°05' N 126°11' W

for

ArcWest Exploration Inc.
2300 - 1177 West Hastings St.

Vancouver BC

V6E 2K3

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2.0 Introduction

The Sparrowhawk Project encompasses 9,913 hectares located approximately 80 kilometres northeast of the town of Houston in the Central Interior of the Province of British Columbia. The mineral claims are within the Omineca Mining Division on NTS map sheet 093M/1E. ArcWest Exploration Inc. has 100% interest in the property.

The northern Babine Lake area has attracted mineral exploration for close to one hundred years owing to occurrences of copper bearing minerals on the shores of Babine Lake, notably on Newman Peninsula and MacDonald Island. Extensive exploration and development led to the discovery of two mines in the 1960's and early 1970's, the Granisle Mine on MacDonald Island, and the Bell Copper Mine on Newman Peninsula. Granisle produced 472 million pounds of copper, 2.2 million ounces of silver and 219,667 ounces of gold from 52 million tonnes of ore. Bell produced 672 million pounds of copper, 1.2 million ounces of silver and 414,293 ounces of gold from 77 million tonnes of ore. Exploration in the mid 20th century also led to the discovery of the Hearne Hill and Morrison Deposits, located approximately 20 kilometres north of the Bell Mine.

As reserves were being depleted at the Bell Mine in the late 1980's, a concerted effort was made by Noranda Minerals Inc. to discover and develop new reserves to support further mining. Regional exploration led to the discovery of copper occurrences on the Sparrowhawk prospect, about 7.5 kilometres northeast of the Bell Mine.

The Bell Mine ceased production in 1992 due to low metal prices, despite remaining copper-gold resources. The mineral tenures northeast of the Bell Mine, including the Sparrowhawk occurrence, were allowed to lapse. The ground was acquired by Midland Recording Services Ltd. in October 2006. Midland actively explored the ground in 2007 to 2017. Their work led to the discovery of several occurrences of copper mineralization in bedrock and in float. Midland Recording Services sold the Sparrowhawk Property to ArcWest Exploration Inc. in January 2019.

This assessment report describes the 2019 prospecting and rock sampling work program completed between June 9 – 14. Forty-six rock samples were collected.

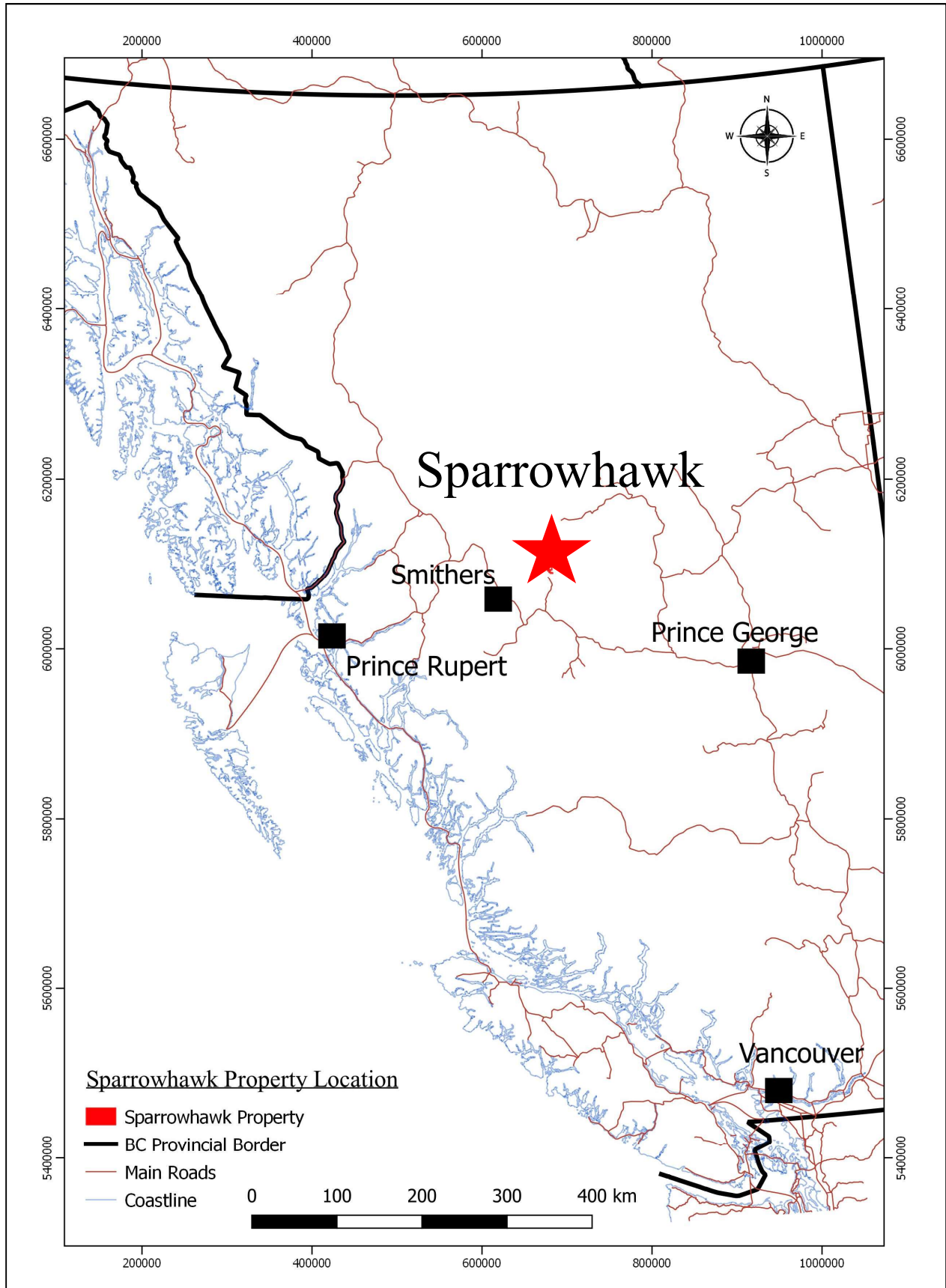


Figure 1. Sparrowhawk property location.

2.1 History and Ownership

The Northern Babine Lake area has been intermittently explored by several operators over the past 100 years. The first reported activity was early in the twentieth century when Charles Newman, for whom Newman Peninsula is named, worked some veins exposed on the lake shore with limited underground development. Bartley McCrea, a local pioneer from Topley BC explored outcroppings of malachite on McDonald Island in the first half of the 20th century. The work of these mining pioneers led to the development of the Granisle Mine in 1965, and the development of the Bell Mine in 1972.

The area north of the Bell Mine was included in the rush of exploration that followed development of the two mines in the nineteen sixties and nineteen seventies. The area was partially covered by the Vez claims in 1966, the Ben Claims in 1970, and by Noranda Exploration in the nineteen eighties (Henneberry, 2007). The Sparrowhawk showing was discovered in the late nineteen eighties. Noranda Exploration conducted geochemical surveys, airborne geophysical surveys, and ground geophysical surveys over the showing. Three diamond drill holes were reportedly completed, but the results were not made public.

2.2 Property Description

The Sparrowhawk Mineral Claims previously held by Midland Recording Services were vended to ArcWest Exploration Inc. on January 10th 2019. Additional contiguous mineral claims were acquired by staking on Mineral Title Online by ArcWest staff on January 14th and 21st 2019. The total area of the Sparrow hawk property now covers 9,913.4 hectares.

Table 2.2.1 Summary of Mineral Tenures

Tenure Number	Owner Name	Percent Ownership	Issue Date	Status	Area (Hectares)
1065672	ARCWEST EXPLORATION INC.	100	2019/JAN/10	GOOD	1685.3197
1065673	ARCWEST EXPLORATION INC.	100	2019/JAN/10	GOOD	1738.9671
1065931	ARCWEST EXPLORATION INC.	100	2019/JAN/21	GOOD	872.7753
1065746	ARCWEST EXPLORATION INC.	100	2019/JAN/14	GOOD	555.3265
1065747	ARCWEST EXPLORATION INC.	100	2019/JAN/14	GOOD	536.8203
1065748	ARCWEST EXPLORATION INC.	100	2019/JAN/14	GOOD	777.8411
1065925	ARCWEST EXPLORATION INC.	100	2019/JAN/21	GOOD	798.0964
1065927	ARCWEST EXPLORATION INC.	100	2019/JAN/21	GOOD	613.286
1065929	ARCWEST EXPLORATION INC.	100	2019/JAN/21	GOOD	74.2977
1065674	ARCWEST EXPLORATION INC.	100	2019/JAN/10	GOOD	1316.0302
1065750	ARCWEST EXPLORATION INC.	100	2019/JAN/14	GOOD	870.6903
1065695	ARCWEST EXPLORATION INC.	100	2019/JAN/11	GOOD	73.983

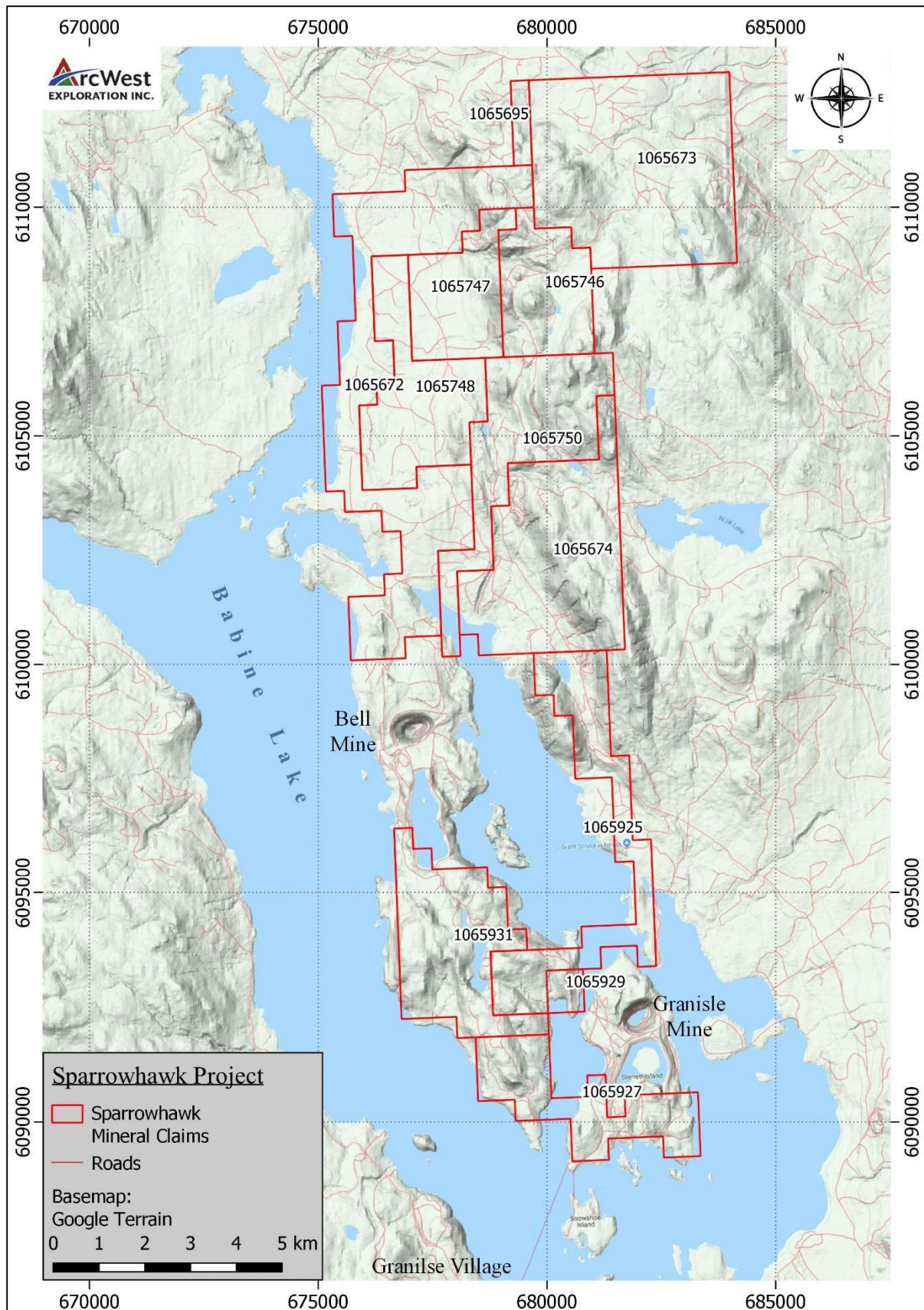


Figure 2. Sparrowhawk location and mineral claims.

2.3 Accessibility and Infrastructure

The property is located approximately 80 kilometres northeast of the town of Houston in the Central Interior of British Columbia, and is approximately 20 kilometres northeast of the Village of Granisle

Houston is a major supply and industrial centre and is serviced by the CNR transcontinental railway as well as provincial Highway 16. Both rail and highway corridors connect the central BC hub of Prince George to the international port of Prince Rupert. Daily air service to Vancouver is available from Smithers, BC, approximately 70 kilometres west of Houston along highway 16. The village of Granisle was founded to support the Granisle and Bell Mines during their development in the nineteen sixties. With the closure of the mines, the village has become a retirement community. Services available include post office and a convenience / auto service store.

From Houston, access to the property is by road using a two-wheel drive vehicle in fair weather and four-wheel drive vehicle in poor weather. Road access to the property is granted first travelling east from Houston on Highway 16 to the intersection Highway 118 at Topley. From Topley, access is north on Highway 118 to the Michelle Bay ferry landing on Babine Lake, approximately 40 kilometres on pavement. Permission to board the ferry must be obtained from Canfor Forest Products in Houston. The ferry crossing is approximately 4 kilometres across Babine Lake to the Nose Bay ferry landing on the eastern shore. Access is then by vehicle on the Nose Bay and Hagan Forest Service Roads. Multiple logging roads now cross the property and provide partial road access however road deactivations and impassable vegetation growth on past road corridors are common challenges.

2.4 Climate and Physiography

The property lies in the Central Interior physiographic region of central British Columbia. Relief is moderate to steep on the property with a maximum difference in elevation of approximately 550 metres. Elevation ranges from 711 metres at the shore of Babine Lake to approximately 1280 metres on top of the rounded hills. The property covers at least eight kilometres of the scarp of the Morrison Fault, the most prominent structure in the area. The western portion of the property occupies a portion of the downthrown block of the fault, which forms the Babine Lake valley. The eastern portion of the property covers the uplifted block east of Morrison Fault.

Climate is transitional between the Coast Ranges and the Central Interior with typically short cool summers and long relatively mild winters. Annual temperature variation ranges between -25 to +25 degrees Celsius. Snowpack in the winter varies from 1 to 4 metres. The operating season for ground-based activities such as geological mapping, surface sampling and geophysical surveys would extend from approximately early May to late October. With adequate support, diamond drilling can be conducted year-round.

Outside the numerous cut blocks in varying stages of reforestation, the property is covered by a mature stand of mixed coniferous and deciduous trees with variable understory growth. Newer cut blocks are covered with logging debris and charred stumps. Replanted blocks have plantations of juvenile pine trees.

2.5 Economic Assessment Overview

The rocks underlying the Babine Project area are principally fragmental volcanic and sedimentary rocks of the Lower Jurassic Telkwa Formation of the Hazelton Group. These rocks are in faulted contact with sedimentary rocks of the Cretaceous Skeena Group, which are exposed on the western shore of Newman Peninsula. Stocks and plugs of Biotite Feldspar porphyry were emplaced along the major structural breaks in the Babine Region, the Newman Fault and the Morrison Fault. Economic and sub-economic deposits of copper and gold were emplaced in and around the Eocene intrusions. Surrounding each stock are extensive zones of pervasive hydrothermal alteration and sulphide mineralization. Sulphide contents commonly range between 1 and 8 per cent, and locally reach 15 per cent. Within the zones of hydrothermal alteration, several zones have been identified which host porphyry style mineralization with economic grades of copper and gold.

Sulphide mineralization exists primarily as pyrite and chalcopyrite fractures fillings, with lesser amounts of disseminated sulphides. Mineralization occurs both in the intrusive rocks and the adjacent country rocks.

2.6 Exploration Concept

The porphyry copper-gold deposits of the Babine Lake region occur along the major regional structural breaks. The Granisle, Bell, North Newman and Old Fort deposits are localized along the trace of the Newman Fault. There is a spacing of approximately 5 to 7 kilometres between deposits. The Morrison Fault is parallel to the Newman Fault, but is a much more prominent feature. The only occurrences of porphyry copper – gold mineralization discovered to date along the Morrison Fault are the Morrison and Hearne Hill deposits. The exploration concept of the Babine Project is to explore the traces of the major regional faults, particularly the Morrison Fault, for hidden or buried centres of porphyry copper – gold mineralization. On the uplifted blocks, where scattered outcrops maybe observed and residual soils have developed, conventional prospecting and soil sampling are used to look for mineralization or alteration halos associated with the Babine deposits. On the down drop blocks in the Babine Trench, however, outcrop is scarce and geophysical methods must be employed.

2.7 History

The following summary of history has been gained and modified from Minfile Assessment and Technical Reports filed for the Sparrowhawk Property. This history is sourced from Price (2013) Technical Report on the Sparrowhawk Property.

1966: New Far North Explorations completed 56.4 line miles (90.2 line km) of geochemical soil sampling and geological mapping on their Vez 1-40 and Tal 1-23 claims. Soil lines were spaced 400 feet (122 m) with sample stations every 300 feet (91 m). A definite, northwest trending, geochemical anomaly was identified in a deep, swampy ravine in the southeast corner of the claim block. This survey covers much of the northwestern section of the present claim block.

1970: Torwest Resources Ltd. completed 34.5 line km (21.6 line miles) of geochemical soil sampling on their Ben 1-20 and Ben 23-38 claims. Soil lines were spaced at 244 metre (800 foot) intervals with sample stations every 61 metres (200 feet). The survey revealed copper in soil anomalies with pronounced east-west alignments. Stronger anomalies occur in the eastern part of the grid. Torwest continued the exploration of the Ben claims in 1971, completing 34.5 line km of magnetic and 34.5 line km of electromagnetic surveys, as well as, geological mapping and a further 9 line km (5.7 line miles) of auger soil geochemical surveys. The soil and geophysical anomalies were not found to be coincident. The geological mapping located widely disseminated pyrite but little signs of copper mineralization. These surveys cover much of the east central section of the claim group.

1973: Quintana Minerals Corporation completed geological mapping and rock sampling over most of their claim block and recovered 520 samples. Two areas were identified for follow-up, a copper occurrence near BAB 131 claim and a carbonate alteration zone on TONJA 100 claim.

1981: The ground appears to have lain idle until the early 1980's when Noranda Exploration Company, Limited (who had the adjacent Bell Copper Mine) staked a 3.5 to 4 kilometre wide strip on the eastern shore of Babine Lake. During 1981, Noranda established a cut grid totalling 63.5 line kilometres. They completed soil geochemistry (869 samples) and 51 line kilometres of ground magnetometer survey and 51 line kilometres of IP. Several IP anomalies and magnetic features worthy of follow-up were identified.

1989: Noranda again acquired ground in the area in 1989, including the Sparrowhawk property. They cut a 3.2 km base line and 27 km of cross line and collected 254 soil samples as well as completed mapping and prospecting. Noranda continued exploration in 1990. They cut an additional 30.9 kilometres of line, collected 86 soil samples, and completed 15.75 line km of dipole – dipole IP and 18.7 line km of magnetic geophysical surveys. Diamond drilling on three high chargeability IP anomalies was recommended. The drilling was completed though the data is not in the public file. The centre of the present Babine 1-22 claims covers the old Sparrowhawk claims. Noranda also explored peripheral ground to the north of the Sparrowhawk. They collected 63 rocks and 16 silts from the Nuniz claims, locating patchy disseminations and stringers of chalcopyrite within weakly developed propylitic andesite. (Assessment Report 22156).

1998: Booker Gold Explorations Inc., now Pacific Booker Minerals Inc., explored the Wolf and Buzz claim blocks in the late 1990's (Assessment Report 25401, Assessment Report 25402). Most of their effort was concentrated on the Wolf block, covering the old Noranda Sparrowhawk claims. Geological mapping and prospecting, soil sampling (98 samples) and rock sampling (17 samples) were completed on the Wolf block. Mapping located Biotite Feldspar Porphyry (BFP) and some copper mineralization and two copper soil anomalies on the property, (Assessment Report 25401). Geological mapping and prospecting, soil sampling (26 samples) and rock sampling (3 samples) were completed on Buzz block. Prospecting located Biotite Feldspar Porphyry (BFP) boulders and sulphide mineralization on the property, (Assessment Report 25402). Following the closure of the Bell Copper and Granisle copper mines, interest in the area waned and the mineral tenures northeast of the Bell Mine, including the Sparrowhawk occurrence, were allowed to lapse.

2006: Midland Recording Services Ltd. Acquired the Sparrowhawk property in October 2006 and actively explored the ground in 2007. Their work led to the discovery of several copper occurrences of

copper in bedrock and in float that had not been previously reported. The most recent work was a soil geochemical survey using basal till sampling in selected areas (Assessment Report 31469).

In 2007, a two-part geochemical survey was completed and resulted in 65 rock chip samples and the acquisition of additional ground (Assessment Report 29629).

In 2009, Geoscience BC released airborne magnetic and electromagnetic data for the Quest West project which included coverage over the Sparrowhawk property. The survey was flown at 4 km line spacing. Profiles along parts of the survey lines displayed similarities to signatures obtained over the deposits at Bell and Granisle.

Copper Point Mining Corporation optioned the claims from Midland in 2011 and contracted Geotech Ltd. to complete airborne electromagnetic and magnetic geophysical surveys. Additional work included prospecting and rock sampling (Assessment Report 33139).

In 2012, exploration was focussed around two airborne geophysical anomalies delineated by the 2011 airborne survey. The work completed in 2012 including flagged line grids, chainsaw cut lines, soil and rock sampling, prospecting and geological mapping. The program resulted in 11 kilometres of line cutting with 43 rock and 86 soil samples being collected. Extensive soil sampling was completed on the Sparrowhawk grid which totalled 353 samples. The samples were not analysed due to financial constraints.

Two anomalous conductive zones were outlined by the 2011 airborne survey, both lie near the eastern shore of Babine Lake. The North zone anomaly measures approximately 1500 by 2500 metres long, and is more circular in plan view. The South zone anomaly is more linear in nature, measuring approximately 2500 metres long (north-south) by 500 metres wide (east-west). Two grids with minor soil sampling were done on each zone. A total of 40 samples were taken from the South Grid on two lines and 33 samples on the North Grid from one line.

In 2012, Raven mapped the eastern portion of the Sparrowhawk grid. Mapping confirmed the regional geology with a thick assemblage of intermediate to mafic volcanic flows and tuffs ranging from andesitic to basaltic. Rare disseminated chalcopyrite was observed in the mafic rocks but never in economic concentrations; many of the samples with chalcopyrite assayed in the 200 parts per million copper range (Assessment Report 33939). Of the few lines mapped to the west, local rhyolite flows were observed but not over any significant lengths nor did they contain copper-gold mineralization.

In 2013 Barry Price, P.Geo., authored a Technical Report on the Sparrowhawk Property. Due to financial constraints, Copper Point was unable to meet their obligations and the claims were returned to Midland Recording Services.

Between 2013 and 2018, Midland conducted limited exploration work. In January 2019, the Sparrowhawk Property was sold to Sojourn Exploration Inc. which subsequently changed name to ArcWest Exploration Inc.

Arcwest completed petrographic and spectral studies during early 2019 which were followed up with prospecting and rock sampling in June 2019.

3.0 Geological Setting

3.1 Regional Geological Setting

The Sparrowhawk Property is located in the Skeena Arch, a fault mesh network and topographic high separating the Bowser and Netchako plateaus. The rocks underlying the Sparrowhawk mineral tenures have been assigned to Lower to Middle Jurassic Hazelton and Skeena Groups (MacIntyre, 2001). The oldest rocks in the area are the andesitic fragmental unit of the Middle Jurassic (Toarcian) Saddle Hill Volcanics (ImJvb) of the Hazelton Group. These rocks have been described as brown weathering green to greenish grey feldspar phyrlic flows and occupy the highlands on the eastern portion of the property.

The Morrison Fault crosses the claim block with an orientation of N10W. The down-dropped block on the western half of the claims is occupied by younger sedimentary rocks of the Lower Cretaceous Skeena Group. The latter are obscured by trench fill composed of an unknown thickness of unconsolidated sand, gravel and glacial sediments. One outcrop of intrusive rocks attributed to the Eocene Babine Igneous Suite is exposed west of kilometre 30 on the Hagan Forest Service road.

The sequence has been intruded by plugs of Biotite Feldspar Porphyry (BFP) at the Bell, Granisle and Morrison porphyry copper deposits, and by Late Cretaceous intrusion of hornblende –biotite diorite / quartz diorite and gabbro.

3.2 Geology of the Sparrowhawk Occurrence

The Sparrowhawk occurrence is located approximately 7.5 kilometres northeast of the Bell Mine. The area is underlain by marine volcanic rocks attributed to the Saddle Hill Formation (MacIntyre, 2001). Interest in the area was revived in the late nineteen eighties as a broad zone of reddish carbonate alteration was exposed as logging progressed up Hatchery arm. The Sparrowhawk occurrence is comprised of chalcopyrite and limonite cemented breccia which is reminiscent of the Hearne Hill Breccia pipe, associated with the Morrison Lake Porphyry Cu-Au deposit (Ogryzlo et al, 1994).

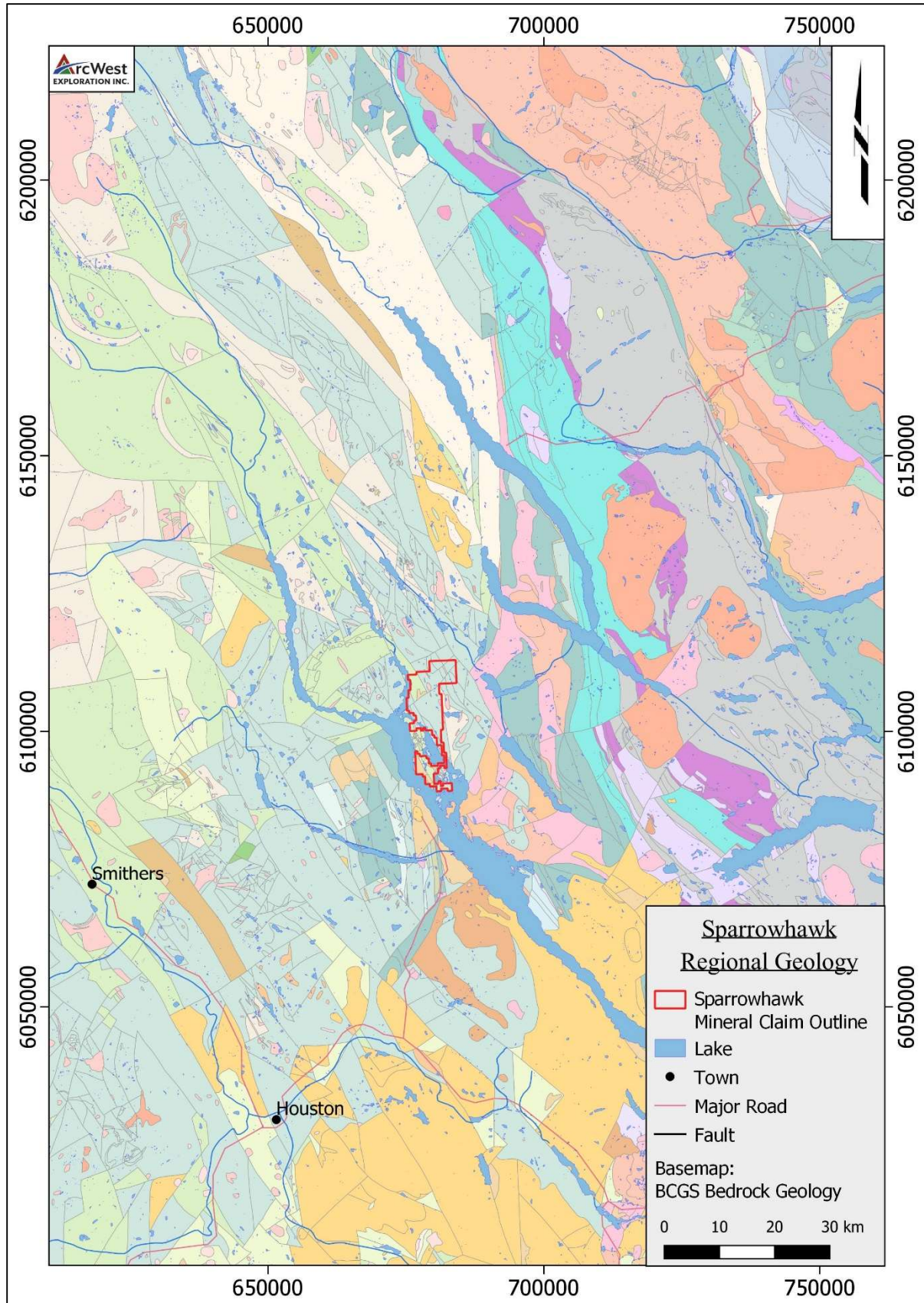


Figure 3. Sparrowhawk Mineral Claims and current BCGS regional geology (<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/geoData/Pages/default.aspx>).

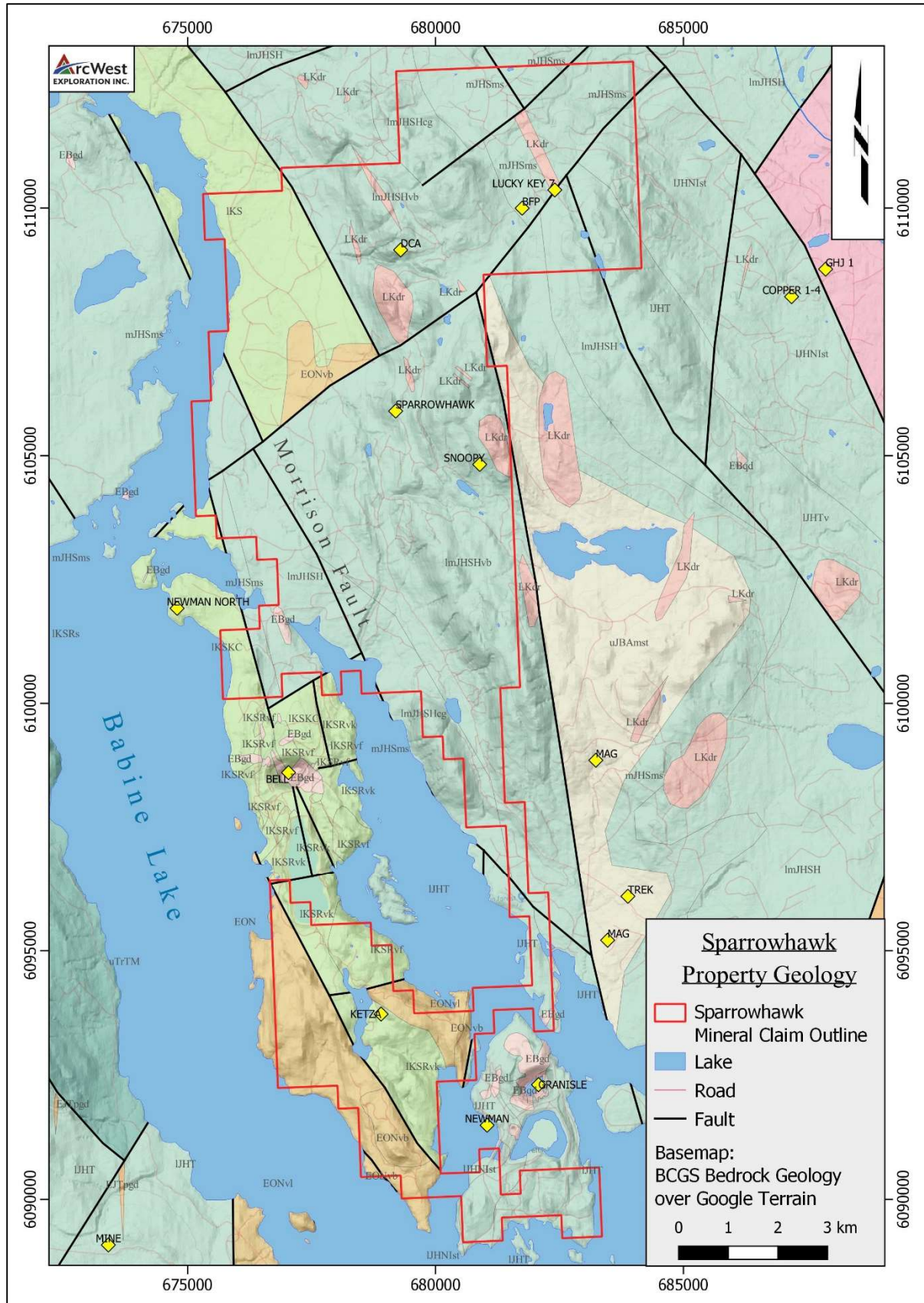


Figure 4. Sparrowhawk Mineral Claim outline, current BCGS bedrock geology and MINFILE locations. Legend found in Table 3.1

(<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/geoData/Pages/default.aspx>).

Table 3.1 Geological Legend to Figure 4.

(<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/geoData/Pages/default.aspx>).

Unit Label	Suite	Stratigraphic Name	Formation name	Rock type	Age	Description
EBgd	Babine Plutonic Suite	Babine Plutonic Suite - Biotite-Feldspar Porphyritic Phase	Biotite-Feldspar Porphyritic Phase	granodioritic intrusive rocks	Eocene	Biotite+/-hornblende-plagioclase porphyritic granodiorite; 35-40 percents, 2-4 millimeter plagioclase phenocrysts.
EBqd	Babine Plutonic Suite	Babine Plutonic Suite - Quartz Diorite to Granodiorite Phase	Quartz Diorite to Granodiorite Phase	quartz dioritic intrusive rocks	Eocene	Biotite-hornblende granodiorite to quartz diorite; equigranular to sub-porphyritic
EEvl	Nechako Plateau Group	Nechako Plateau Group - Endako Formation	Megacrystic Porphyry Dykes	feldspar porphyritic intrusive rocks	Eocene	Megacrystic feldspar porphyry dikes; probably comagmatic with porphyritic flows in the upper Takla volcanic succession; may also be comagmatic with megacrystic flows in the Saddle Hill volcanic succession
EON	Nechako Plateau Group	Nechako Plateau Group - Newman Formation		dioritic intrusive rocks	Eocene	Hornblende+/-biotite diorite to quartz diorite; minor gabbro; fine to coarse grained
EONvb	Nechako Plateau Group	Nechako Plateau Group - Newman Formation - Porphyritic Flows Member	Granodiorite to Monzonite Phase	granodioritic intrusive rocks	Eocene	Granodiorite to monzonite, fine-grained, equigranular to feldspar porphyritic; pink to salmon weathering
EONvl	Nechako Plateau Group	Nechako Plateau Group - Newman Formation - Breccia Member	Tochcha Lake Stock	dioritic intrusive rocks	Eocene	Foliated hornblende diorite
IJHN1st	Hazelton Group	Hazelton Group - Nilkitkwa Formation	Quartz Monzonite Phase	granodioritic intrusive rocks	Early Jurassic	Biotite-hornblende granodiorite to quartz monzonite; medium to coarse grained; grey to salmon weathering (179-176 Ma)
IJHT	Hazelton Group	Hazelton Group - Telkwa Formation - Felsic to Intermediate Volcanic Member		syenitic to monzonitic intrusive rocks	Early Jurassic	Red to pink monzonite, quartz monzonite, monzogranite
EJTpfp	Topley Intrusive Suite	Topley Intrusive Suite - Megacrystic Porphyry Dykes	Porphyritic Phase	granodioritic intrusive rocks	Late Triassic to Early Jurassic	Biotite-hornblende-plagioclase porphyritic granodiorite; 194 Ar-Ar isotopic age
EJTpgd	Topley Intrusive Suite	Topley Intrusive Suite - Porphyritic Phase	Porphyritic Phase	granodioritic intrusive rocks	Late Triassic to Early Jurassic	Biotite-hornblende-plagioclase porphyritic granodiorite; 194 Ar-Ar isotopic age
EJTpgd	Topley Intrusive Suite	Topley Intrusive Suite - Porphyritic Phase		dioritic intrusive rocks	Late Triassic to Early Jurassic	Hornblende diorite; tonalite, locally foliated
EMJSPd	Spike Peak Intrusive Suite	Spike Peak Intrusive Suite		dioritic intrusive rocks	Early Jurassic to Middle Jurassic	Hornblende+/-biotite diorite to quartz diorite; minor gabbro; fine to coarse grained
LKdr				undivided sedimentary rocks	Late Cretaceous to Eocene	Sandstone, siltstone, shale, mudstone, pebble conglomerate
LKdr			Kitsuns Creek Formation	undivided sedimentary rocks	Late Cretaceous to Eocene	Feldspathic and volcanic sandstone, siltstone, shale, mudstone, locally carbonaceous to coal bearing; minor polymictic volcanic clast conglomerate; fluvial to fluvial-deltaic; Berriasian to Hauterivian
IKS	Skeena Group	Skeena Group	Red Rose Formation	undivided sedimentary rocks	Early Cretaceous	Medium to thick-bedded quartzo-feldspathic sandstone, siltstone, chert-pebble conglomerate; local red weathering siltstone and mudstone interbeds; fluvial to fluvial-deltaic, common detrital muscovite; lower Albian to Cenomanian; in part correlati
IKSKC	Skeena Group	Skeena Group - Kitsuns Creek Formation	Saddle Hill Formation	conglomerate, coarse clastic sedimentary rocks	Early Cretaceous	Green, brown and maroon weathering mafic and felsic volcanic clast conglomerate, feldspathic wacke, dark grey siltstone, chert, lapilli tuff
IKSRs	Skeena Group	Skeena Group - Red Rose Formation	Smithers Formation	marine sedimentary and volcanic rocks	Early Cretaceous	Marine, shallow-water feldspathic sandstone, siltstone, feldspathic wacke; locally glauconitic and limy; minor ash, crystal and lapilli tuff, volcanic breccia, volcanic-pebble conglomerate, limestone; very fossiliferous; early Bajocian to early Ba

Unit Label	Suite	Stratigraphic Name	Formation name	Rock type	Age	Description
IKSRvf	Skeena Group	Skeena Group - Rocky Ridge Formation - Subvolcanic Rhyolite Domes	Smithers Formation	marine sedimentary and volcanic rocks	Early Cretaceous	Marine, shallow-water feldspathic sandstone, siltstone, feldspathic wacke; locally glauconitic and limy; minor ash, crystal and lapilli tuff, volcanic breccia, volcanic-pebble conglomerate, limestone; very fossiliferous; early Bajocian to early Ba
IKSRvk	Skeena Group	Skeena Group - Rocky Ridge Formation - Subvolcanic Rhyolite Domes		limestone, marble, calcareous sedimentary rocks	Early Cretaceous	Massive, grey, bioclastic limestone; argillaceous, thin bedded, recrystallized limestone with chert nodules; Sakmarian and Artinskian conodonts
IJHTv	Hazelton Group	Hazelton Group - Telkwa Formation	Nilkitkwa Formation	argillite, greywacke, wacke, conglomerate turbidites	Lower Jurassic	Shallow to deep marine feldspathic wacke, siltstone and conglomerate; well-bedded; contains upper Sinemurian to Toarcian macrofossils; a: submarine basalt flows (Ankwell Member)
ImJHSH	Hazelton Group	Hazelton Group - Saddle Hill Formation	Ashman Formation	argillite, greywacke, wacke, conglomerate turbidites	Lower Jurassic to Middle Jurassic	Feldspathic wacke to dark grey, thin-bedded siltstone and shale; coarse grained, shallow water marine facies contain latest Bathonian to early Oxfordian ammonites and bivalves
ImJHSH	Hazelton Group	Hazelton Group - Saddle Hill Formation		conglomerate, coarse clastic sedimentary rocks	Lower Jurassic to Middle Jurassic	Polymictic pebble to boulder conglomerate, brown, maroon and red weathering, poorly-sorted, matrix supported, contains rounded to subrounded augite-plagioclase phyrlic basalt, limestone, chert and granitic clasts; locally contains brown siltstone
ImJHSHcg	Hazelton Group	Hazelton Group - Saddle Hill Formation - Volcaniclastic-Sedimentary Member	Moosevale Formation	argillite, greywacke, wacke, conglomerate turbidites	Lower Jurassic to Middle Jurassic	Graphitic siltstone, feldspathic wacke, argillaceous limestone, siliceous mudstone, chert-limestone clast conglomerate, andesitic lapilli tuff; medium to thin-bedded, brown and dark grey weathering (=Moosevale Formation); mainly Norian in age
mJHSmS	Hazelton Group	Hazelton Group - Smithers Formation	Rocky Ridge Formation - Subvolcanic Rhyolite Domes	alkaline volcanic rocks	Middle Jurassic	Subaerial to subaqueous augite-plagioclase phyrlic alkaline basalt to basaltic andesite, plagioclase phyrlic greenish grey andesite to dacite; dark grey aphyric basalt, green to maroon mafic lapilli tuff, volcanic breccia, minor interbedded shale, s
mJHSmS	Hazelton Group	Hazelton Group - Smithers Formation	Saddle Hill Formation	undivided volcanic rocks	Middle Jurassic	Undivided subaerial to submarine basalt, andesite, dacite and rhyolite flows, tuffs and related volcaniclastic rocks
MJSPgd	Spike Peak Intrusive Suite	Spike Peak Intrusive Suite - Quartz Monzonite Phase	Saddle Hill Formation	undivided volcanic rocks	Middle Jurassic	Undivided subaerial to submarine basalt, andesite, dacite and rhyolite flows, tuffs and related volcaniclastic rocks
MJSPsy	Spike Peak Intrusive Suite	Spike Peak Intrusive Suite	Saddle Hill Formation	basaltic volcanic rocks	Middle Jurassic	Brown weathering, green to greenish grey feldspar phyrlic basaltic flows, volcanic breccia, aquagene tuff, hyaloclastite, peperite breccia, locally amygdaloidal and pillowed; local flow banded rhyolite domes and interbeds of limy siltstone and limes
uJBAmst	Bowser Lake Group	Bowser Lake Group - Ashman Formation	Saddle Hill Formation - Subvolcanic Rhyolite Domes	rhyolite, felsic volcanic rocks	Middle Jurassic to Late Jurassic	White weathering, flow banded feldspar phyrlic dacite to rhyolite domes, flows and extrusive breccia; part of Saddle Hill volcanic succession
ImJHSHvb	Hazelton Group	Hazelton Group - Saddle Hill Formation - Mafic Submarine Volcanic Member	Endako Formation	coarse volcaniclastic and pyroclastic volcanic rocks	Lower Jurassic to Middle Jurassic	Dark grey, aphyric, amygdaloidal and vesicular basalt flows, minor flow top breccia; bladed plagioclase phyrlic andesite
ImJHSHvc	Hazelton Group	Hazelton Group - Saddle Hill Formation - Intermediate Volcanic Member	Newman Formation	andesitic volcanic rocks	Lower Jurassic to Middle Jurassic	Hornblende +/- biotite-feldspar phyrlic andesite to dacite flows, breccia and lahar; minor basalt; extrusive equivalent of the Babine Intrusions; isotopic ages 54-50 Ma
ImJHSHvf	Hazelton Group	Hazelton Group - Saddle Hill Formation - Subvolcanic Rhyolite Domes	Newman Formation	basaltic volcanic rocks	Lower Jurassic to Middle Jurassic	Massive, sheet to columnar jointed flows; may include subvolcanic plugs and necks
ImJHvf	Hazelton Group	Hazelton Group	Newman Formation	coarse volcaniclastic and pyroclastic	Lower Jurassic to Middle Jurassic	Volcanic breccia

Unit Label	Suite	Stratigraphic Name	Formation name	Rock type	Age	Description
				volcanic rocks		
ImJHvl	Hazelton Group	Hazelton Group	Telkwa Formation	andesitic volcanic rocks	Lower Jurassic to Middle Jurassic	Andesitic lapilli, crystal and ash tuff, maroon to greenish grey, medium to thick bedded, minor feldspar phyrlic andesite flows
LTrJTpgd	Topley Intrusive Suite	Topley Intrusive Suite - Granodiorite to Monzonite Phase	Telkwa Formation	undivided volcanic rocks	Late Triassic to Early Jurassic	Undivided maroon air fall tuffs, feldspar phyrlic andesite flows and volcanic breccia, amygdaloidal basalt flows, related epiclastic and volcanoclastic rocks; Sinemurian
LTrJTpT	Topley Intrusive Suite	Topley Intrusive Suite - Tochcha Lake Stock	Rocky Ridge Formation - Subvolcanic Rhyolite Domes	rhyolite, felsic volcanic rocks	Late Triassic to Early Jurassic	Flow banded feldspar phyrlic to aphyric rhyolite to rhyodacite, submarine flows, flow breccia and subvolcanic domes
uTrJcg				coarse volcaniclastic and pyroclastic volcanic rocks	Late Triassic to Early Jurassic	Lapilli tuff, breccia, volcanic conglomerate with pink, flow banded rhyolite, monzonite, feldspar phyrlic andesite clasts
uTrTM	Takla Group	Takla Group - Moosevale Formation		coarse volcaniclastic and pyroclastic volcanic rocks	Late Triassic	Lapilli tuff, breccia, volcanic conglomerate with pink, flow banded rhyolite, monzonite, feldspar phyrlic andesite clasts; flow banded rhyolite; feldspar phyrlic dacite or andesite
uTrTsm	Takla Group	Takla Group - Savage Mountain Formation	Savage Mountain Formation	basaltic volcanic rocks	Late Triassic	Pyroxene, pyroxene-plagioclase and pyroxenehornblende-plagioclase phyrlic basalt to andesite flows, volcanic breccia and volcanic conglomerate, thick bedded, green to greenish grey, 208 Ar-Ar isotopic age (=Savage Mountain Formation)
uTrTv	Takla Group	Takla Group		undivided volcanic rocks	Late Triassic	Undivided pyroxene phyrlic basalt, andesite, and breccia; lesser amounts of felsic tuff and marine sedimentary rocks
uTrTvb	Takla Group	Takla Group		basaltic volcanic rocks	Late Triassic	Coarse grained pyroxene rich basalt
uTrTvl	Takla Group	Takla Group		coarse volcaniclastic and pyroclastic volcanic rocks	Late Triassic	Volcanic breccia agglomerate and conglomerate containing pyroxene phyrlic basalt clasts
PAIs	Asitka Group	Asitka Group	Saddle Hill Formation	volcaniclastic rocks	Early Permian	Maroon to greenish grey weathering feldspar phyrlic lapilli, crystal and ash tuff, volcanic breccia, lahar, tuffaceous mudstone, siltstone and conglomerate, grey ash flow tuff and feldspar phyrlic dacite to rhyolite domes and flows, locally contains

4.0 Deposit Type and Exploration Model

Porphyry copper-gold deposits are large, relatively low-grade deposits that occur in orogenic settings. They are commonly accompanied by extensive envelopes of hydrothermal alteration that can affect several cubic kilometres of rock, and sulphide envelopes commonly referred to as pyrite haloes. The mineralization tends to be introduced into the country rocks as fine disseminations and fracture fillings. The deposits tend to be zoned, both in sulphide and alteration mineralogy with the primary controls on mineralization being pressure, temperature, structure, and the chemical composition of the enclosing rock. The deposits commonly exhibit radial symmetry around the central stock, with Cu, Mo and Au zoned in concentric shells.

The development of hydrothermal alteration and pyrite haloes makes this type of deposit amenable to geochemical and geophysical surveying. The footprint of the alteration halo may have a diameter of from 3 to 5 kilometres. In the case of past-producing nearby deposits, the alteration halos and their associated deposits have been eroded and modified by glaciation. Dispersion of metallic elements in the till sheets which cover blind deposits can produce exploration targets which are larger than the primary bedrock dispersion halos. In the case of deposits covered by glacio-lacustrine clay, outwash sand and gravels or volcanic ash, the basal layer of glacial till is the preferred geochemical sampling horizon.

Porphyry copper deposits are characterized by halos of disseminated sulphide mineralization, principally chalcopyrite and pyrite. The disseminated nature of the sulphides responds well to Induced Polarization geophysical surveys, where an electrical charge is induced into the ground, and the decay of this charge at sulphide grain boundaries can be measured. However, if sulphide concentrations are sufficiently high, or if the grains are partially in contact, electromagnetic methods may be used. These methods essentially induce a secondary electrical field in a conductor and measure the polarization of the secondary field. Although not applicable to all porphyry copper-molybdenum deposits, electromagnetic methods may be effective in mapping sulphides in porphyry exploration if sulphide concentrations are sufficiently high.

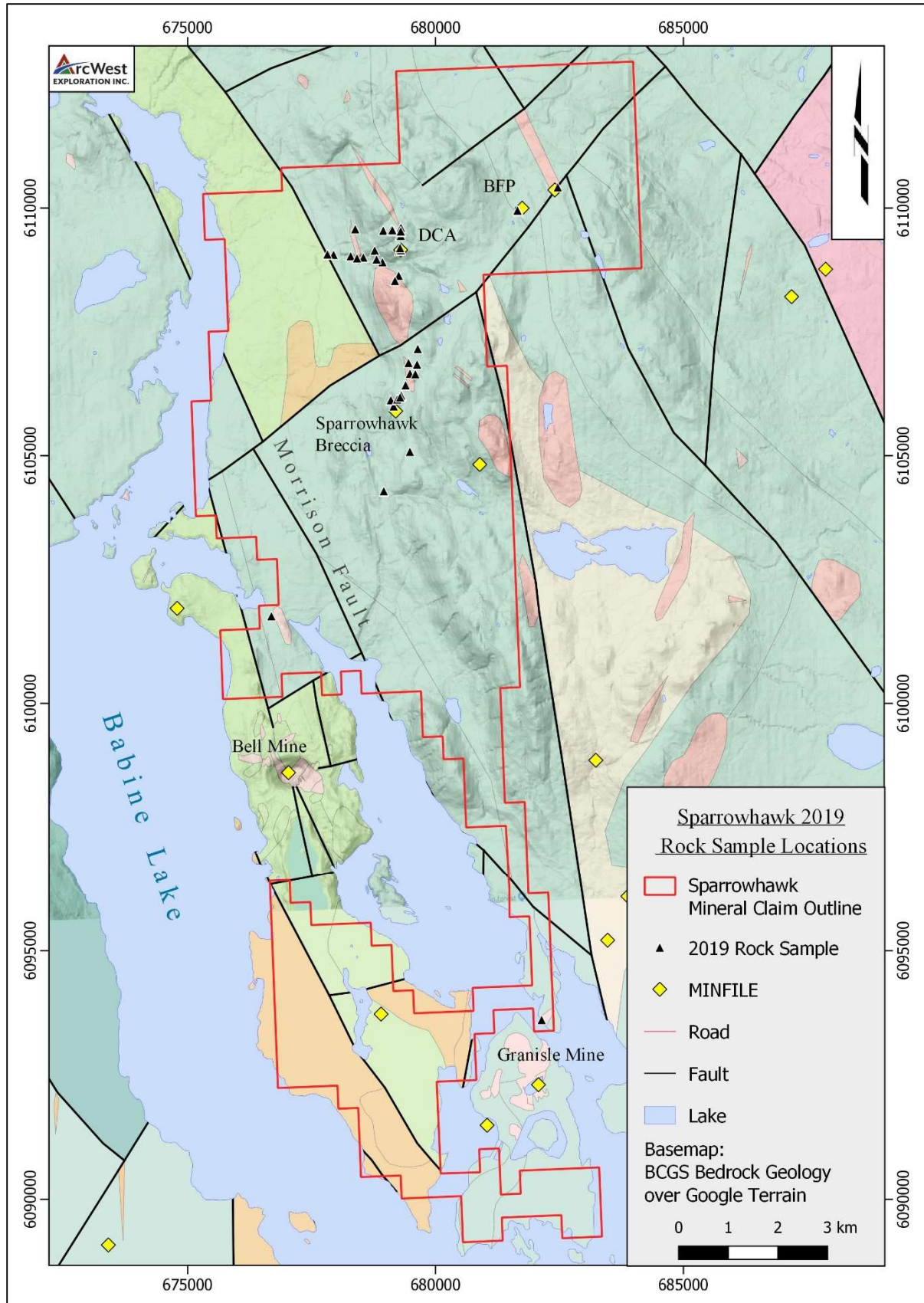


Figure 5. Sparrowhawk bedrock geology with 2019 rock sample locations.

5.0 Results

Forty-six rock samples were collected across the Sparrowhawk property between June 9th-14th and are displayed in Appendices E and F. This program aimed to validate historic metal values and expand known zones of copper-gold mineralization. Progress was reduced due to heavily overgrown logging roads and cut blocks which slowed movements and restricted outcrop exposure. Outcrop observed on the western side of the Morrison Fault was almost entirely obscured by glacial sediments except for two samples of biotite-feldspar-porphyry with weakly elevated copper-gold values collected near the property boundary.

Most samples (44 of 46) were collected on the eastern side of the Morrison Fault in the vicinities of the Sparrowhawk and DCA showings. Seven samples from around the Sparrowhawk showing returned anomalous copper values up to 0.31% (S8500054) and 0.13% (S850055); significantly lower than reported historic results. Moderate to heavy forest regeneration led to poor outcrop exposure which may have obscured the best copper-bearing zones.

Samples collected in the DCA area also returned lower copper values than historically reported. Grab sample S848413 returned 0.744% copper from a fine grained, amygdaloidal mafic volcanic rock containing 2-10 mm wide calcite-chalcopyrite filled amygdules. Similar lithologies sampled from the DCA showing returned up to 0.158% Cu.

Approximately 350 m north of the DCA showing, a zone of east-west trending quartz stockwork veining was observed to extend over 300 m strike length and at least 80 m wide. Veins consist primarily of fine-grained quartz with very fine-grained magnetite margins and trace very fine grained galena. Individual vein widths range from 0.1 – 10 cm wide and are hosted within fine grained, strong chlorite altered microdiorite. Vein densities vary between 5 – 30 % but can reach up to 80% of the rock locally. Geochemical values of the stockwork zone were not anomalous in copper or gold.

6.0 Discussion and Conclusion

The rock sampling and prospecting program completed between June 9th – 14th confirmed the location of previously documented copper showings at Sparrowhawk and DCA areas. The lower copper-gold values returned in 2019 samples compared to historic results in similar areas are at least partially due to reduced outcrop exposure and restrictive sample quality. The presence of copper bearing rocks on the eastern side of the Morrison Fault (MF) may indicate a blind, copper bearing porphyry system exists on or west of the MF, similar to the fault off-set observed between the Morrison and Hearn Hill deposits.

The delineation of a 300 x 80 m quartz stockwork zone in the DCA area on the eastern side of the Morrison Fault indicates a significant amount of fluid movement which may be related to a blind porphyry style system. This area of stockwork quartz veining contains densities typically between 5- 35% with local concentrations up to 80%, the highest known densities outside of the Bell and Ganisle open pits. Despite weak base and precious metal values, further exploration work is recommended to determine the full extent of the stockwork zone and prospect for areas containing copper-gold values.

Additional exploration work focussing on the western side of the Morrison Fault is also recommended to evaluate potential for buried porphyry copper-gold mineralization.

7.0 Recommendations

1. Phase 1: \$500,000

-Reverse circulation drilling and top of bedrock sampling: 12 holes (4 lines of 3 holes, 100 – 150 m hole spacing, 150 m line spacing) targeting EM conductors on the west side of the Morrison fault. Drill minimum 2 m into bedrock and assess for porphyry-style mineralization and alteration.

-Reopen grown over logging roads to allow driving access to stockwork zone.

-Prospect stockwork zone

2. Phase 2: \$1,000,000

Diamond drilling: 10 x 400 m drill holes defined by geophysical, geochemical and geological constraints returned from phases 1.

8.0 References

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Appendix A Rock Sample Descriptions

sample	easting	northing	type	sample description	Au (ppm)	Cu (ppm)
S848401	679481.109	6105083.971	Grab	Fragmental volcanics and crystal tuff. Hard, medium green mottled matrix.	0.001	255
S848402	679319.056	6106205.425	Grab	Andesitic to fragmental volcanics. Strong mag silica overprint of matrix. Irregular sulphide rich qtz-cal-cpy-py-mag veinlets	0.005	939
S848403	679090.986	6106107.719	Grab		0.014	20
S848404	679152.855	6106002.195	Grab	Strongly magnetic	0.001	20
S848405	679393.475	6106421.546	Grab	Subcrop	0.0001	45
S848406	679453.246	6106877.566	Grab	20m outcrop of feldspar porphyry.	0.0001	42
S848407	679625.747	6106846.107	Grab		0.0001	33
S848408	679639.705	6107159.983	Grab		0.0001	490
S848409	681673.508	6109936.411	Grab	Small outcrop weakly magnetic siltstone	0.0001	33
S848411	677817.105	6109067.578	Grab	Stream cobble of greenish equigranular Diorite brecciated by significant qtz-mag-cpy-py stockwork.	0.004	2170
S848412	678377.777	6109577.193	Grab	Strongly magnetic equigranular plag-hbl Diorite. Nearby clearing is a swampy meadow.	0.0001	36
S848413	678943.762	6109547.741	Grab	Dark green amygdaloidal andesite or basalt flow within fragmental volcanics. Calcite and chalcopryrite in amygdules 2-10mm	0.008	7440
S848414	679107.622	6109567.618	Grab	Medium green Micro Diorite or volcanics (?) With strong silica overprint. Minor Diffuse qtz-mag veinlets or fluid conduits. Very fine grained magnetite.	0.0001	14
S848415	679154.074	6109537.31	Grab	Large area of outcrops over >50m. Strongly fine grained Diorite or silicified volcanic. Green. Sheeted squiggly quartz veinlets and stockworks with very fine magnetite.	0.0001	31
S848416	679303.214	6109519.025	Grab	Finely porphyritic Diorite or strongly silicified crystal tuff. Narrow Qtz-mag stockwork with Diffuse margins	0.0001	11
S849851	679394.255	6106426.968	Grab	FLOAT: Angular boulder	0.002	1045

sample	easting	northing	type	sample description	Au (ppm)	Cu (ppm)
S849960	682138.234	6093614.05	Grab	Quartz-plag-biotite porphyry: Light -int grey-white, very fine grained ground mass with fine-med grained plag and finer grained biotite phenos. ~ 800 m from Granisle pit	0.0001	13
S850001	679126.673	6109556.583	Grab	Sheeted. Barren qtz veins 1 to 10mm spaced sub cm. Mag clots, Diss and infreq stringer. Rare py in qtz vein. Chl with minor ep	0.0001	24
S850002	679296.431	6109532.937	Grab	Sheeted and wormy qtz veins in silicified volc/intr?	0.0001	166
S850051	676687.395	6101766.3	Grab	Contact zone btw saddle hill fm volc and qfp, trace ml stain on fractures . Trace ds py	0.0001	254
S850052	678954.279	6104278.03	Grab	Int green-grey, fine grained weakly ch altered matrix with subrounded-sub angular ash crystal tuff fragments. Mod-strong pv fe-cb fracture fill. Com ds and blebby py	0.001	96
S850053	678954.59	6104289.406	Grab	Qtz-cb vein 4 cm wide hosted in fe-cb altered ash-crystal tuff.	0.001	41
S850054	679305.04	6106220.132	Grab	Sparrowhawk breccia: matrix (25%) int-light grey and orang, fine grained siliceous in part, fe oxide in part, fine grained magnetite. Clasts (75%): silica altered volc fragments, chalcopyrite clasts up to 10 mm across	0.004	3190
S850055	679096.483	6106126.407	Grab	Int green-grey, very fine grained siliceous and chlorite magnetite matrix (15%) with fine grained ash and siliceous grey, green and maroon clasts. Common ds and int py and lesser cp. moderate matrix fill fine grained magnetite., weak- moderately magnetic	0.079	1355
S850056	679225.694	6106140.735	Grab	Int grey, fine grained siliceous gmass with sub-euhedral 1-3mm plag phenos. Mod-strong pv si re, mod he re of mafics? Trace fine ds py and lesser cp	0.0001	52
S850057	679283.61	6106182.281	Grab	Grey, fine grained si-mt-py matrix (30%) with si replaced volc clasts (70%). Common ds py and minor ds cp	0.05	12

sample	easting	northing	type	sample description	Au (ppm)	Cu (ppm)
S850058	679482.58	6106661.681	Grab	Beige-light buff brown and maroon, fine grained, siliceous, mod fine grained fe oxide (he?) sub mm stringers	0.001	1945
S850059	679590.81	6106650.554	Grab	SUBCROP: int grey, fine grained si flooded matrix and fine grained volc clasts, common very fine- fine grained ds, vein concordant and blebby cp. common ml stain.	0.014	5110
S850060	679254.279	6108638.68	Grab	Int grey, v fine grained si flooded frag. Minor blebby py	0.004	22
S850061	679180.045	6108533.415	Grab	Mod magnetic	0.012	1175
S850062	682463.118	6110421.644	Grab	Int grey-green weathering light beige-grey, fine grained, equigranular, non magnetic, common sub mm to 15 cm scale qtz-ch veins with trace vc cp	0.002	85
S850063	681650.804	6109954.675	Grab	ANGULAR FLOAT: Int grey-green, med grained equigranular plag-hbl-qtz. Weakly magnetic, minor fine grained ds and int cp. Major water course crossing (~10m) not passable by atv	0.001	79
S850064	678543.019	6109005.524	Grab	Int-light grey, very fine grained-aphanitic, strongly magnetic. Trace very fine py. Comm mm scale cb-qtz veins and ch slips	0.0001	43
S850066	677842.478	6109063.844	Grab	Irregular shaped FLOAT: Int grey-light brown, fine grained equigranular qtz-hbl-plag-bt with-st bt re of hbl. Comm mm scale qtz-py-cp veinlets. Weakly magnetic	0.098	3030
S850067	677941.444	6109060.666	Grab	Sub rounded FLOAT: Light grey-beige fine grained si-se-py gmass with med-coarse plag-qtz and lesser bt phenos. Com int and ds py and minor cp. weakly magnetic.	0.01	320
S850068	678286.02	6109031.663	Grab	Int grey, aphanitic with minor mm scale plag lath phenos. Mod-strongly magnetic. Minor very fine ds py. Mod fe oxide fracture coating. Hard, hackly fracture.	0.0001	5
S850069	678414.941	6108988.917	Grab	Int grey, aphanitic with minor mm scale plag lath phenos. Mod-strongly magnetic. Minor very fine ds py. Mod fe oxide fracture coating. Hard, hackly fracture.	0.003	46
S850070	678808.682	6108965.822	Grab	Int grey weathering light orange, very fine grained, mod-st frx, common fe cb veins and ff, minor sub mm scale py veinlets and stringers. Weak-non magnetic.	0.0001	2

sample	easting	northing	type	sample description	Au (ppm)	Cu (ppm)
S850071	678927.444	6108910.539	Grab	Int grey-green, fine grained equigranular hbl Diorite. Strongly magnetic. Trace ve fie ds py. Minor sub mm scale py stingers.	0.0001	37
S850072	679261.637	6109137	Grab	Int grey-maroon, apheric siliceous gmass with subhedral plag phenos. Trace ds cp. and ml stain. Minor cb-qtz-he veins. Strongly magnetic	0.0001	133
S850073	679297.122	6109152.244	Grab	Int-dark green-grey, very fine to fine to fine grained, strongly magnetic, massive in part, amygdaloidal in part. Common sub mm scale cb veinlets and stringers with minor vc cp. minor mm scale vugs. minor fine localized ds cp. amygdules filled with cb-qtz	0.0001	678
S850074	679283.325	6109196.589	Grab	Light and dark grey, apheric matrix with angular maroon and light grey-white (rhy?) clasts. Common sub mm scale qtz vein stockwork trending 101/68, Minor amygdules filled with cb-qtz and rare cp up to 1cm with Minor ml rim. Strongly magnetic.	0.001	1580
S850075	679277.881	6109455.632	Grab	Int green-grey, fine grained micro-Diorite, mod pv ch re, st pv si re, abundant qtz and qtz-mt veins up to 80% of rock volume. Very fine mt vein margins in part. Minor spec hematite. Mod-st magnetic. Veins trend 234/88 - 260/88	0.0001	11
S850076	679297.272	6109443.711	Grab	Int green-grey, fine grained micro-Diorite, mod pv ch re, st pv si re, abundant qtz and qtz-mt veins up to 30% of rock volume. Very fine mt vein margins in part. Minor fine-coarse sib-euhedral py	0.0001	5
S850077	679300.295	6109605.05	Grab	ANGULAR FLOAT: Int grey and green, fine grained gen massive, mod ch re hbl, common sub mm scale spec hem veinlets with fine grained interstitial cp. mod-st magnetic.	0.0001	87
S850078	678771.633	6109147.054	Grab	TALUS: int -dark green, med grained qtz-hbl Diorite. Strongly magnetic. Weak-mod ch re hbl. Tr ds py	0.0001	25

sample	Ag	Mo	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Cd
S848401	0.4	2	6	200	22100	2	10	80	0.6	0.2	23000	0.7
S848402	0.3	4	0.2	19	8900	10	1	30	1.1	0.2	17400	0.05
S848403	0.02	1	0.2	44	20600	11	1	90	0.05	0.2	2100	0.05
S848404	0.2	1	0.2	36	29600	6	1	50	0.5	0.2	2000	0.05
S848405	0.02	1	0.2	20	7300	4	1	30	1	0.2	16400	0.05
S848406	0.02	1	0.2	10	3200	6	1	30	1.1	0.2	12700	0.05
S848407	0.02	1	0.2	4	2500	12	1	20	0.05	0.2	20800	0.05
S848408	0.02	1	0.2	15	9000	8	1	140	0.9	0.2	41100	0.05
S848409	0.2	0.1	15	221	24800	4	10	140	0.05	0.2	41600	0.6
S848411	0.4	1	0.2	41	30500	2	1	170	0.05	0.2	16100	0.05
S848412	0.02	1	0.2	32	9100	3	1	60	0.05	0.2	11600	0.05
S848413	1.9	1	0.2	48	18300	0.2	1	80	0.05	3	10000	0.05
S848414	0.02	1	0.2	38	8200	0.2	1	30	0.05	0.2	8100	0.05
S848415	0.02	1	0.2	40	14700	0.2	1	20	0.05	0.2	14100	0.05
S848416	0.02	1	0.2	28	6100	0.2	1	20	0.05	0.2	7100	0.05
S849851	0.3	1	0.2	11	9100	7	1	40	0.9	0.2	13000	0.05
S849960	0.3	1	3	686	13400	0.2	1	230	0.05	0.2	16200	1.7
S850001	0.02	1	0.2	53	11000	0.2	1	30	0.05	0.2	9700	0.05
S850002	0.2	0.1	0.2	40	15000	0.2	1	20	0.5	0.2	13800	0.05
S850051	0.02	1	11	101	17400	6	1	70	0.5	0.2	10000	0.05
S850052	0.02	1	4	144	31800	3	1	30	0.05	2	26800	0.05
S850053	0.02	0.1	5	88	20400	2	1	30	0.05	0.2	147000	0.05
S850054	0.02	1	2	26	14800	11	1	20	1.1	2	19500	0.05
S850055	0.02	2	0.2	24	15800	11	1	90	0.05	0.2	2900	0.05
S850056	0.02	0.1	0.2	15	10400	4	1	20	0.05	0.2	10300	0.05
S850057	0.02	1	2	30	18000	25	1	20	0.7	4	8300	0.05
S850058	0.02	1	0.2	39	23800	2	1	40	0.5	0.2	11000	0.05
S850059	0.5	3	13	33	11000	12	1	50	0.05	4	15300	0.05
S850060	0.02	1	2	32	9100	10	1	10	0.05	0.2	5700	0.05

sample	Co	Cr	Fe	Ga	Hg	K	La	Mg	Mn	Na	Ni	P
S848401	19	33	53300	10	0.1	300	10	17700	1165	700	20	920
S848402	18	9	129000	1	1	100	10	6000	536	800	6	160
S848403	31	166	99600	10	0.1	1000	1	17100	794	500	18	910
S848404	28	13	95900	10	0.1	400	1	33400	955	500	8	570
S848405	3	7	49400	1	0.1	100	1	7500	749	1000	1	90
S848406	3	6	16900	1	0.1	300	30	800	578	1000	0.1	120
S848407	1	12	23100	1	0.1	200	1	500	521	1200	0.1	730
S848408	13	12	67200	1	0.1	100	10	10100	1135	700	12	840
S848409	10	7	34400	10	0.1	1200	10	7000	1895	700	6	3140
S848411	36	183	63800	10	1	200	10	34800	1335	600	55	320
S848412	18	1	47000	10	0.1	1100	10	4800	714	900	0.1	2220
S848413	15	5	71000	10	0.1	100	40	18500	1000	700	11	500
S848414	3	3	37200	10	0.1	100	10	6400	630	1100	0.1	1110
S848415	10	3	49200	10	1	100	10	12700	1165	900	0.1	1020
S848416	3	4	32600	1	0.1	100	10	5300	587	1300	0.1	1100
S849851	3	5	50500	10	0.1	100	10	6500	558	800	5	50
S849960	9	17	25700	10	0.1	1800	20	10800	810	900	13	1090
S850001	6	3	41300	10	1	100	10	8800	1140	1000	0.1	990
S850002	10	1	54400	10	0.1	100	10	12000	1115	900	1	980
S850051	13	29	33600	10	0.1	800	20	14600	730	800	21	1080
S850052	30	34	85600	10	1	400	10	28100	1245	600	26	1780
S850053	10	4	60000	10	1	400	1	15900	5250	300	10	410
S850054	31	6	67200	10	0.1	100	1	12300	934	600	9	440
S850055	66	20	48500	10	0.1	100	1	9900	610	900	10	980
S850056	12	7	62600	1	1	600	1	4100	653	900	6	450
S850057	333	7	142000	10	1	500	1	9800	621	600	19	910
S850058	13	14	72000	20	0.1	100	10	20800	892	800	12	970
S850059	37	8	49600	10	0.1	100	10	8400	725	1000	9	920
S850060	77	19	30500	1	0.1	100	1	9400	800	1100	21	650

sample	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W
S848401	1500	0.2	17	24	2	4100	1	1	158	1
S848402	1500	0.2	9	15	2	100	1	1	175	1
S848403	2900	0.2	15	3	2	400	1	1	61	1
S848404	500	0.2	21	4	2	100	1	1	267	1
S848405	10	0.2	9	11	2	300	1	1	43	1
S848406	100	0.2	5	5	2	100	1	1	3	1
S848407	10	0.2	7	9	2	200	1	1	38	1
S848408	1300	0.2	18	28	2	300	1	1	204	1
S848409	5900	0.2	7	57	2	3200	1	1	98	1
S848411	2400	0.2	5	9	2	2100	1	1	170	1
S848412	400	0.2	5	20	2	3500	1	1	199	1
S848413	5900	2	7	6	2	4100	1	1	280	1
S848414	10	0.2	7	5	2	3300	1	1	18	1
S848415	10	2	13	9	2	2700	1	1	59	1
S848416	10	0.2	3	4	2	2500	1	1	22	1
S849851	600	0.2	7	6	2	100	1	1	37	1
S849960	900	0.2	5	128	2	300	1	1	58	1
S850001	10	0.2	8	6	2	2500	1	1	44	1
S850002	200	0.2	10	7	2	100	1	1	41	1
S850051	300	3	5	24	2	100	1	1	52	1
S850052	2500	2	20	49	2	100	1	1	221	1
S850053	800	2	20	224	2	10	1	1	210	1
S850054	1300	3	22	12	2	100	1	1	97	1
S850055	8500	0.2	9	4	2	100	1	1	19	1
S850056	500	2	6	7	2	100	1	1	37	1
S850057	14600	0.2	11	5	2	100	1	1	130	1
S850058	1100	0.2	19	7	2	100	1	1	182	1
S850059	3600	0.2	16	9	2	400	1	1	114	1
S850060	5400	0.2	5	3	2	2700	1	1	86	1

sample	Ag	Mo	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Cd
S850061	0.4	5	0.2	25	11000	0.2	1	130	0.05	0.2	3100	0.05
S850062	0.02	0.1	8	88	46700	2	10	20	0.05	0.2	50100	0.05
S850063	0.02	0.1	10	91	18500	3	1	90	0.05	0.2	15000	0.05
S850064	0.02	0.1	0.2	23	16100	4	1	10	0.05	0.2	21200	0.05
S850066	1.4	23	7	112	17900	4	1	340	0.05	3	10800	0.05
S850067	0.9	3	6	54	21700	9	1	140	0.05	0.2	13000	0.05
S850068	0.02	1	0.2	8	8700	0.2	1	10	0.5	0.2	4300	0.05
S850069	0.02	1	0.2	17	18800	2	1	20	0.05	2	9700	0.05
S850070	0.02	0.1	0.2	4	1600	0.2	1	10	0.05	0.2	7100	0.05
S850071	0.02	0.1	0.2	21	16500	0.2	1	10	0.05	0.2	21100	0.05
S850072	0.02	0.1	0.2	18	5800	2	1	20	0.5	0.2	14300	0.05
S850073	0.3	0.1	4	48	16100	2	1	10	0.05	5	13100	0.05
S850074	0.02	0.1	3	30	6200	0.2	1	30	0.05	0.2	15800	0.05
S850075	0.02	1	2	43	16400	0.2	1	20	0.05	2	7500	0.05
S850076	0.02	0.1	0.2	33	9400	3	1	20	0.5	0.2	6400	0.05
S850077	0.02	0.1	2	48	25800	3	1	20	0.6	2	6900	0.05
S850078	0.02	0.1	2	73	9200	4	1	60	0.05	0.2	9800	0.05

sample	Co	Cr	Fe	Ga	Hg	K	La	Mg	Mn	Na	Ni	P
S850061	10	25	21400	1	0.1	1700	10	7400	466	700	31	270
S850062	22	15	40600	10	0.1	200	1	17700	547	600	32	390
S850063	18	39	39000	10	0.1	1500	10	14400	546	1000	28	2700
S850064	27	7	83500	10	1	100	1	17400	1375	800	9	520
S850066	14	64	27000	10	1	8500	20	17400	184	1000	48	1200
S850067	22	61	38800	10	0.1	800	20	19500	336	700	43	1520
S850068	6	4	39000	10	0.1	300	1	7100	455	1100	1	810
S850069	25	7	98100	10	0.1	100	1	23100	865	800	9	580
S850070	6	5	45200	1	0.1	10	1	400	281	1100	1	570
S850071	23	1	61700	10	0.1	10	1	15300	1020	900	4	700
S850072	4	6	34300	1	1	100	1	4900	594	1100	2	620
S850073	22	7	87500	10	1	100	1	16500	1300	900	14	540
S850074	12	7	51500	1	0.1	100	1	7400	919	1000	5	820
S850075	7	2	51700	10	1	100	1	13800	1185	900	1	990
S850076	16	3	40600	10	0.1	100	10	7400	768	1100	1	1030
S850077	27	13	72100	10	1	100	10	24700	1605	800	12	1560
S850078	18	1	47000	10	0.1	1400	1	4800	541	900	1	2310

sample	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W
S850061	2400	0.2	3	15	2	200	1	1	51	1
S850062	100	0.2	4	27	2	1700	1	1	122	1
S850063	800	0.2	5	34	2	2600	1	1	93	1
S850064	200	0.2	10	13	2	3400	1	1	312	1
S850066	6100	0.2	8	47	2	2000	1	1	96	1
S850067	8700	0.2	6	38	2	300	1	1	90	1
S850068	100	0.2	9	4	2	100	1	1	10	1
S850069	100	0.2	16	4	2	1600	1	1	210	1
S850070	200	0.2	9	4	2	300	1	1	61	1
S850071	600	0.2	4	9	2	2300	1	1	246	1
S850072	200	0.2	8	7	2	100	1	1	32	1
S850073	600	0.2	6	7	2	4100	1	1	345	1
S850074	600	0.2	3	10	2	3800	1	1	168	1
S850075	10	0.2	13	6	2	1100	1	1	48	1
S850076	300	0.2	3	3	2	2600	1	1	27	1
S850077	400	0.2	5	15	2	2000	1	1	205	1
S850078	200	0.2	5	18	2	2100	1	1	197	1

9.0 Appendix B Assay Certificates

*****IMPORTANT NOTE*****

The following Assay Certificates contain samples from Sparrowhawk and Eagle projects areas. The Eagle samples are not pertinent to this report.



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To: **ARCWEST EXPLORATION INC.**
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Plus Appendix Pages
Finalized Date: 3-JUL-2019
Account: SOJEXP

CERTIFICATE TR19146512

Project: Eagle and Sparrowhawk
P.O. No.: Quote #1012175
This report is for 76 Rock samples submitted to our lab in Terrace, BC, Canada on 17-JUN-2019.

The following have access to data associated with this certificate:

JEFF KYBA
TYLER RUKS

NIGEL LUCKMAN

SCOTT MCBRIDE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
LOG-23	Pulp Login - Rcvd with Barcode

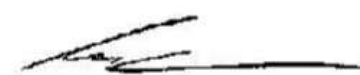
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
Ag-OG46	Ore Grade Ag - Aqua Regia	
ME-OG46	Ore Grade Elements - AquaRegia	ICP-AES
Cu-OG46	Ore Grade Cu - Aqua Regia	
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:


Colin Ramshaw, Vancouver Laboratory Manager



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Finalized Date: 3-JUL-2019
Account: SOJEXP

Project: Eagle and Sparrowhawk

CERTIFICATE OF ANALYSIS TR19146512

Sample Description	Method Analyte Units LOD	WEI-21 kg 0.02	Au-ICP21 ppm 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
S849951		1.70	0.003	0.7	1.25	34	<10	80	<0.5	<2	0.77	0.5	22	40	115	4.89
S849952		1.58	0.003	0.5	1.81	36	<10	140	<0.5	<2	1.17	<0.5	18	37	89	4.20
S849953		2.31	0.001	0.3	3.83	15	10	120	<0.5	<2	2.86	<0.5	16	36	71	4.86
S849954		1.41	0.001	0.3	1.64	4	10	50	<0.5	<2	0.95	<0.5	19	4	348	5.29
S850001		1.33	<0.001	<0.2	1.10	<2	<10	30	<0.5	<2	0.97	<0.5	6	3	24	4.13
S850002		0.82	<0.001	0.2	1.80	<2	<10	20	0.5	<2	1.38	<0.5	10	1	168	5.44
S849851		1.78	0.002	0.3	0.91	7	<10	40	0.9	<2	1.30	<0.5	3	5	1045	5.05
S849960		1.78	<0.001	0.3	1.34	<2	<10	230	<0.5	<2	1.62	1.7	9	17	13	2.57
S849961		0.13	0.894	6.6	1.14	40	<10	50	<0.5	4	0.41	4.9	14	20	6760	6.51
S849801		1.95	0.013	0.6	8.02	<2	10	230	<0.5	<2	5.29	<0.5	44	3	672	8.79
S849802		1.18	<0.001	0.4	6.25	<2	10	1840	<0.5	<2	4.48	<0.5	54	5	964	11.95
S849803		1.18	0.004	1.1	6.06	<2	10	150	<0.5	<2	4.23	<0.5	43	4	1485	10.55
S849804		0.76	0.030	1.0	1.47	50	<10	50	<0.5	<2	8.1	<0.5	51	10	1425	10.85
S849805		1.82	1.790	38.8	2.96	381	10	30	<0.5	3	1.93	0.9	74	2	>10000	12.30
S849806		1.46	0.165	16.4	1.44	10	60	30	1.0	16	0.86	1.1	79	2	>10000	15.55
S849807		1.50	0.020	1.3	2.33	4	10	100	<0.5	<2	1.13	<0.5	47	2	2220	7.29
S848401		1.16	0.001	0.4	2.21	2	10	80	0.6	<2	2.30	0.7	19	33	255	5.33
S848402		2.21	0.005	0.3	0.89	10	<10	30	1.1	<2	1.74	<0.5	18	9	939	12.90
S848403		1.24	0.014	<0.2	2.06	11	<10	90	<0.5	<2	0.21	<0.5	31	166	20	9.96
S848404		1.24	0.001	0.2	2.96	6	<10	50	0.5	<2	0.20	<0.5	28	13	20	9.59
S848405		1.04	<0.001	<0.2	0.73	4	<10	30	1.0	<2	1.64	<0.5	3	7	45	4.64
S848406		1.18	<0.001	<0.2	0.32	6	<10	30	1.1	<2	1.27	<0.5	3	6	42	1.69
S848407		1.43	<0.001	<0.2	0.25	12	<10	20	<0.5	<2	2.08	<0.5	1	12	33	2.31
S848408		0.96	<0.001	<0.2	0.90	8	<10	140	0.9	<2	4.11	<0.5	13	12	490	6.72
S848409		1.56	<0.001	0.2	2.48	4	10	140	<0.5	<2	4.16	0.6	10	7	33	3.44
S848410		Not Recvd														
S848411		1.86	0.004	0.4	3.05	2	<10	170	<0.5	<2	1.61	<0.5	36	183	2170	6.38
S848412		0.68	<0.001	<0.2	0.91	3	<10	80	<0.5	<2	1.16	<0.5	18	1	36	4.70
S848413		0.98	0.008	1.9	1.83	<2	<10	80	<0.5	3	1.00	<0.5	15	5	7440	7.10
S848414		0.72	<0.001	<0.2	0.82	<2	<10	30	<0.5	<2	0.81	<0.5	3	3	14	3.72
S848415		0.93	<0.001	<0.2	1.47	<2	<10	20	<0.5	<2	1.41	<0.5	10	3	31	4.92
S848416		1.28	<0.001	<0.2	0.61	<2	<10	20	<0.5	<2	0.71	<0.5	3	4	11	3.26
S848417		0.10	0.317	2.6	1.66	27	10	80	<0.5	3	0.84	2.3	11	30	2480	4.50
S849901		2.85	0.004	1.5	5.94	4	10	180	<0.5	3	3.43	<0.5	58	7	3030	13.40
S849902		2.02	0.043	1.3	0.86	5	<10	10	1.2	2	2.07	<0.5	9	4	1910	4.40
S849903		2.64	0.022	0.7	4.27	6	10	60	<0.5	2	3.39	<0.5	38	7	1495	8.87
S849904		1.80	0.009	0.9	1.08	31	<10	10	<0.5	<2	1.36	<0.5	8	2	1440	2.09
S849905		2.15	2.42	>100	0.85	1385	<10	10	<0.5	26	0.09	<0.5	230	<1	>10000	30.2
S849906		1.37	0.035	0.8	2.44	5	10	40	<0.5	2	2.45	<0.5	40	3	5570	5.69
S849907		2.25	0.719	11.3	1.91	34	<10	80	<0.5	4	0.55	<0.5	52	2	>10000	10.55

***** See Appendix Page for comments regarding this certificate *****



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Total # Pages: 3 (A - C)
Plus Appendix Pages
Finalized Date: 3-JUL-2019
Account: SOJEXP

Project: Eagle and Sparrowhawk

CERTIFICATE OF ANALYSIS TR19146512

Sample Description	Method Analyte Units LOD	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
		Ca ppm 10	Hg ppm 1	K % 0.01	La ppm 10	Mg % 0.01	Mn ppm 5	Mo ppm 1	Na % 0.01	Ni ppm 1	P ppm 10	Pb ppm 2	S % 0.01	Sb ppm 2	Sc ppm 1	Sr ppm 1
S849951		10	<1	0.06	<10	0.87	637	10	0.09	59	280	6	2.36	<2	11	17
S849952		10	<1	0.05	<10	0.92	598	4	0.09	36	440	6	1.35	<2	7	27
S849953		10	1	0.11	<10	1.31	882	1	0.35	24	580	<2	0.49	2	16	130
S849954		10	1	0.11	10	1.34	1065	2	0.07	7	1610	2	0.02	<2	6	59
S850001		10	1	0.01	10	0.88	1140	1	0.10	<1	990	<2	<0.01	<2	8	6
S850002		10	<1	0.01	10	1.20	1115	<1	0.09	1	980	<2	0.02	<2	10	7
S849851		10	<1	0.01	10	0.65	558	1	0.08	5	50	<2	0.06	<2	7	6
S849960		10	<1	0.18	20	1.08	810	1	0.09	13	1090	3	0.09	<2	5	128
S849961		<10	<1	0.30	<10	0.32	612	162	0.02	15	470	105	4.92	4	1	36
S849801		10	1	0.10	10	1.74	806	<1	0.57	12	5010	<2	0.03	2	3	1315
S849802		10	1	1.02	10	2.63	503	1	0.33	14	7250	<2	0.02	<2	7	693
S849803		10	1	0.09	<10	1.19	693	<1	0.22	9	370	<2	0.12	<2	7	594
S849804		10	1	0.08	10	1.16	1990	11	0.02	35	520	<2	0.07	<2	11	128
S849805		10	1	0.06	<10	1.11	1045	170	0.01	6	1220	21	4.64	<2	6	38
S849806		10	1	0.01	<10	0.98	587	48	0.01	8	2680	2	2.03	<2	3	30
S849807		10	1	0.15	10	1.92	696	2	0.04	3	2320	2	0.14	<2	7	37
S848401		10	<1	0.03	10	1.77	1165	2	0.07	20	920	6	0.15	<2	17	24
S848402		<10	1	0.01	10	0.60	536	4	0.08	6	160	<2	0.15	<2	9	15
S848403		10	<1	0.10	<10	1.71	794	1	0.05	18	910	<2	0.29	<2	15	3
S848404		10	<1	0.04	<10	3.34	955	1	0.05	8	570	<2	0.05	<2	21	4
S848405		<10	<1	0.01	<10	0.75	749	1	0.10	1	90	<2	<0.01	<2	9	11
S848406		<10	<1	0.03	30	0.08	578	1	0.10	<1	120	<2	0.01	<2	5	5
S848407		<10	<1	0.02	<10	0.05	521	1	0.12	<1	730	<2	<0.01	<2	7	9
S848408		<10	<1	0.01	10	1.01	1135	1	0.07	12	840	<2	0.13	<2	18	28
S848409		10	<1	0.12	10	0.70	1895	<1	0.07	6	3140	15	0.59	<2	7	57
S848410																
S848411		10	1	0.02	10	3.48	1335	1	0.06	55	320	<2	0.24	<2	5	9
S848412		10	<1	0.11	10	0.48	714	1	0.09	<1	2220	<2	0.04	<2	5	20
S848413		10	<1	0.01	40	1.85	1000	1	0.07	11	500	<2	0.59	2	7	6
S848414		10	<1	0.01	10	0.64	630	1	0.11	<1	1110	<2	<0.01	<2	7	5
S848415		10	1	0.01	10	1.27	1165	1	0.09	<1	1020	<2	<0.01	2	13	9
S848416		<10	<1	0.01	10	0.53	587	1	0.13	<1	1100	<2	<0.01	<2	3	4
S848417		<10	<1	0.28	<10	0.57	750	240	0.07	23	720	79	2.22	3	2	54
S849901		10	<1	0.15	<10	1.23	696	<1	0.17	21	130	4	0.09	<2	5	448
S849902		10	<1	0.01	<10	0.55	491	<1	0.12	4	590	6	0.12	2	5	26
S849903		10	1	0.05	<10	1.47	990	1	0.10	23	60	3	0.10	<2	8	261
S849904		10	1	<0.01	<10	0.50	554	<1	0.11	2	220	3	0.10	2	3	15
S849905		<10	1	<0.01	<10	0.22	256	9	0.02	13	190	11	4.14	6	1	4
S849906		10	<1	0.15	10	0.91	233	1	0.04	6	2220	3	0.07	<2	2	31
S849907		20	<1	0.33	10	0.79	200	11	0.05	10	1680	8	2.77	<2	2	23



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Sample Description	Method Analyte Units LOD	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	Ag-OC46	Cu-OC46
		Th ppm 20	Ti % 0.01	Ti ppm 10	U ppm 10	V ppm 1	W ppm 10	Zn ppm 2	Ag ppm 1	Cu % 0.001
S849951		<20	0.20	<10	<10	124	<10	108		
S849952		<20	0.19	<10	<10	113	<10	76		
S849953		<20	0.23	<10	<10	152	<10	52		
S849954		<20	0.17	<10	<10	190	<10	71		
S850001		<20	0.25	<10	<10	44	<10	53		
S850002		<20	0.01	<10	<10	41	<10	40		
S849851		<20	0.01	<10	<10	37	<10	11		
S849960		<20	0.03	<10	<10	58	<10	686		
S849961		<20	0.01	<10	<10	18	<10	822		
S849801		<20	0.15	<10	<10	418	<10	46		
S849802		<20	0.44	<10	<10	457	<10	68		
S849803		<20	0.18	<10	<10	599	<10	45		
S849804		<20	0.29	<10	<10	538	<10	39		
S849805		<20	0.02	<10	20	76	<10	65	4.52	
S849806		<20	0.07	<10	<10	135	<10	352	2.57	
S849807		<20	0.25	<10	10	170	<10	96		
S848401		<20	0.41	<10	<10	158	<10	200		
S848402		<20	0.01	<10	<10	175	<10	19		
S848403		<20	0.04	<10	<10	61	<10	44		
S848404		<20	0.01	<10	<10	267	<10	36		
S848405		<20	0.03	<10	<10	43	<10	20		
S848406		<20	0.01	<10	<10	3	<10	10		
S848407		<20	0.02	<10	<10	38	<10	4		
S848408		<20	0.03	<10	<10	204	<10	15		
S848409		<20	0.32	<10	<10	98	<10	221		
S848410										
S848411		<20	0.21	<10	<10	170	<10	41		
S848412		<20	0.35	<10	<10	199	<10	32		
S848413		<20	0.41	<10	<10	280	<10	48		
S848414		<20	0.33	<10	<10	18	<10	38		
S848415		<20	0.27	<10	<10	59	<10	40		
S848416		<20	0.25	<10	<10	22	<10	28		
S848417		<20	0.04	<10	<10	31	<10	454		
S849901		<20	0.19	<10	<10	740	<10	42		
S849902		<20	0.11	<10	<10	70	<10	24		
S849903		<20	0.23	<10	<10	436	<10	68		
S849904		30	0.03	<10	<10	42	<10	19		
S849905		<20	<0.01	<10	<10	13	10	382	143	28.3
S849906		<20	0.21	<10	<10	180	<10	44		
S849907		<20	0.19	<10	<10	122	<10	65		2.68

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CERTIFICATE OF ANALYSIS TR19146512

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Au-ICP21 Au ppm 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
S849908		1.88	0.049	3.9	1.71	9	10	70	0.6	3	1.23	<0.5	47	2	5530	9.01
S849909		2.40	0.125	8.9	1.71	13	30	40	0.8	5	2.00	0.9	71	1	>10000	13.40
S849910		1.74	0.001	0.2	1.90	5	<10	60	0.5	2	1.33	<0.5	13	2	819	6.92
S849911		1.20	2.70	29.2	0.38	28	40	90	<0.5	9	0.24	<0.5	32	1	>10000	12.15
S849912		1.88	0.006	0.3	1.55	4	10	90	<0.5	2	0.86	<0.5	23	2	1180	7.26
S849913		1.62	0.022	0.7	3.10	2	<10	40	<0.5	<2	2.29	<0.5	28	31	671	6.19
S849914		0.10	0.324	2.8	1.73	28	10	60	<0.5	2	0.87	2.3	11	31	2540	4.58
S850051		1.26	<0.001	<0.2	1.74	6	<10	70	0.5	<2	1.00	<0.5	13	29	254	3.36
S850052		1.48	0.001	<0.2	3.18	3	<10	30	<0.5	2	2.68	<0.5	30	34	96	6.66
S850053		2.25	0.001	<0.2	2.04	2	<10	30	<0.5	<2	14.7	<0.5	10	4	41	6.00
S850054		2.17	0.004	<0.2	1.48	11	<10	20	1.1	2	1.95	<0.5	31	6	3190	6.72
S850055		1.72	0.079	<0.2	1.58	11	<10	90	<0.5	<2	0.29	<0.5	66	20	1355	4.85
S850056		2.41	<0.001	<0.2	1.04	4	<10	20	<0.5	<2	1.03	<0.5	12	7	52	6.26
S850057		1.18	0.050	<0.2	1.80	25	<10	20	0.7	4	0.83	<0.5	333	7	12	14.20
S850058		1.57	0.001	<0.2	2.36	2	<10	40	0.5	<2	1.10	<0.5	13	14	1945	7.20
S850059		1.87	0.014	0.5	1.10	12	<10	50	<0.5	4	1.53	<0.5	37	8	5110	4.96
S850060		1.72	0.004	<0.2	0.91	10	<10	10	<0.5	<2	0.57	<0.5	77	19	22	3.05
S850061		2.54	0.012	0.4	1.10	<2	<10	130	<0.5	<2	0.31	<0.5	10	25	1175	2.14
S850062		2.63	0.002	<0.2	4.67	2	10	20	<0.5	<2	5.01	<0.5	22	15	85	4.06
S850063		2.02	0.001	<0.2	1.85	3	<10	90	<0.5	<2	1.50	<0.5	18	39	79	3.90
S850064		1.94	<0.001	<0.2	1.61	4	<10	10	<0.5	<2	2.12	<0.5	27	7	43	8.35
S850065		Not Recvd														
S850066		2.07	0.098	1.4	1.79	4	<10	340	<0.5	3	1.08	<0.5	14	64	3030	2.70
S850067		2.35	0.010	0.9	2.17	9	<10	140	<0.5	<2	1.30	<0.5	22	61	320	3.88
S850068		1.31	<0.001	<0.2	0.87	<2	<10	10	0.5	<2	0.43	<0.5	6	4	5	
S850069		1.63	0.003	<0.2	1.88	2	<10	20	<0.5	2	0.97	<0.5	25	7	46	9.81
S850070		1.32	<0.001	<0.2	0.16	<2	<10	10	<0.5	<2	0.71	<0.5	6	5	2	4.52
S850071		1.65	<0.001	<0.2	1.65	<2	<10	10	<0.5	<2	2.11	<0.5	23	1	37	6.17
S850072		1.63	<0.001	<0.2	0.58	2	<10	20	0.5	<2	1.43	<0.5	4	6	133	3.43
S850073		1.55	<0.001	0.3	1.61	2	<10	10	<0.5	5	1.31	<0.5	22	7	678	8.75
S850074		1.10	0.001	<0.2	0.62	<2	<10	30	<0.5	<2	1.58	<0.5	12	7	1580	5.15
S850075		1.35	<0.001	<0.2	1.64	<2	<10	20	<0.5	2	0.75	<0.5	7	2	11	5.17
S850076		1.82	<0.001	<0.2	0.94	3	<10	20	0.5	<2	0.64	<0.5	16	3	5	4.06
S850077		1.56	<0.001	<0.2	2.58	3	<10	20	0.6	2	0.69	<0.5	27	13	87	7.21
S850078		1.44	<0.001	<0.2	0.92	4	<10	60	<0.5	<2	0.98	<0.5	18	1	25	4.70
S850079		0.12	0.908	5.9	0.95	38	<10	40	<0.5	3	0.38	4.6	12	18	6360	6.31

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Sample Description	Method Analyte Units LOD	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
		Ca ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm
S849908		10	<1	0.12	20	1.08	594	13	0.05	7	2270	6	0.44	2	3	59
S849909		10	1	0.04	<10	1.27	847	25	0.03	16	2440	<2	0.84	<2	4	43
S849910		10	<1	0.15	10	1.25	643	1	0.07	4	2160	5	0.02	<2	5	44
S849911		<10	1	0.11	<10	0.19	69	61	0.03	3	2680	5	2.21	<2	2	16
S849912		10	<1	0.17	10	1.06	602	2	0.08	5	2380	3	0.03	<2	6	38
S849913		10	<1	0.28	10	1.64	416	1	0.29	22	3750	2	2.73	<2	5	186
S849914		<10	<1	0.29	<10	0.58	767	241	0.07	23	740	77	2.25	3	2	55
S850051		10	<1	0.08	20	1.46	730	1	0.08	21	1080	11	0.03	3	5	24
S850052		10	1	0.04	10	2.81	1245	1	0.06	26	1780	4	0.25	2	20	49
S850053		10	1	0.04	<10	1.59	5250	<1	0.03	10	410	5	0.08	2	20	224
S850054		10	<1	0.01	<10	1.23	934	1	0.06	9	440	2	0.13	3	22	12
S850055		10	<1	0.01	<10	0.99	610	2	0.09	10	980	<2	0.85	<2	9	4
S850056		<10	1	0.06	<10	0.41	653	<1	0.09	6	450	<2	0.05	2	6	7
S850057		10	1	0.05	<10	0.98	621	1	0.06	19	910	2	1.46	<2	11	5
S850058		20	<1	0.01	10	2.08	892	1	0.08	12	970	<2	0.11	<2	19	7
S850059		10	<1	0.01	10	0.84	725	3	0.10	9	920	13	0.36	<2	16	9
S850060		<10	<1	0.01	<10	0.94	800	1	0.11	21	850	2	0.54	<2	5	3
S850061		<10	<1	0.17	10	0.74	466	5	0.07	31	270	<2	0.24	<2	3	15
S850062		10	<1	0.02	<10	1.77	547	<1	0.06	32	390	8	0.01	<2	4	27
S850063		10	<1	0.15	10	1.44	546	<1	0.10	28	2700	10	0.08	<2	5	34
S850064		10	1	0.01	<10	1.74	1375	<1	0.08	9	520	<2	0.02	<2	10	13
S850065		10	1	0.85	20	1.74	184	23	0.10	48	1200	7	0.61	<2	8	47
S850066		10	<1	0.08	20	1.95	336	3	0.07	43	1520	6	0.87	<2	6	38
S850068		10	<1	0.03	<10	0.71	465	1	0.11	1	810	<2	0.01	<2	9	4
S850069		10	<1	0.01	<10	2.31	865	1	0.08	9	580	<2	0.01	<2	16	4
S850070		<10	<1	<0.01	<10	0.04	281	<1	0.11	1	570	<2	0.02	<2	9	4
S850071		10	<1	<0.01	<10	1.53	1020	<1	0.09	4	700	<2	0.06	<2	4	9
S850072		<10	1	0.01	<10	0.49	594	<1	0.11	2	620	<2	0.02	<2	8	7
S850073		10	1	0.01	<10	1.65	1300	<1	0.09	14	540	4	0.06	<2	6	7
S850074		<10	<1	0.01	<10	0.74	919	<1	0.10	5	820	3	0.06	<2	3	10
S850075		10	1	0.01	<10	1.38	1185	1	0.09	1	990	2	<0.01	<2	13	6
S850076		10	<1	0.01	10	0.74	768	<1	0.11	1	1030	<2	0.03	<2	3	3
S850077		10	1	0.01	10	2.47	1605	<1	0.08	12	1560	2	0.04	<2	5	15
S850078		10	<1	0.14	<10	0.48	541	<1	0.09	1	2310	2	0.02	<2	5	18
S850079		<10	1	0.25	<10	0.29	577	138	0.03	14	440	102	4.79	3	1	33

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Sample Description	Method Analyte Units LOD	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	Ag-OG46	Cu-OG46
		Th ppm	Ti %	Ti ppm	U ppm	V ppm	W ppm	Zn ppm	Ag ppm	Cu %
		20	0.01	10	10	1	10	2	1	0.001
S849908		<20	0.16	<10	<10	145	<10	110		
S849909		<20	0.09	<10	<10	113	<10	232		1.245
S849910		<20	0.16	<10	<10	167	<10	55		
S849911		<20	0.03	<10	<10	30	<10	123		1.420
S849912		<20	0.19	<10	<10	191	<10	98		
S849913		<20	0.38	<10	<10	138	<10	47		
S849914		<20	0.04	<10	<10	32	<10	458		
S850051		<20	0.01	<10	<10	52	<10	101		
S850052		<20	0.01	<10	<10	221	<10	144		
S850053		<20	<0.01	<10	<10	210	<10	88		
S850054		<20	0.01	<10	<10	97	<10	28		
S850055		<20	0.01	<10	<10	19	<10	24		
S850056		<20	0.01	<10	<10	37	<10	15		
S850057		<20	0.01	<10	<10	130	<10	30		
S850058		<20	0.01	<10	<10	182	<10	39		
S850059		<20	0.04	<10	<10	114	<10	33		
S850060		<20	0.27	<10	<10	86	<10	32		
S850061		<20	0.02	<10	<10	51	<10	25		
S850062		<20	0.17	<10	<10	122	<10	88		
S850063		<20	0.26	<10	<10	93	<10	91		
S850064		<20	0.34	<10	<10	312	<10	23		
S850065										
S850066		<20	0.20	<10	<10	96	<10	112		
S850067		<20	0.03	<10	<10	90	<10	54		
S850068		<20	0.01	<10	<10	10	<10	8		
S850069		<20	0.16	<10	<10	210	<10	17		
S850070		<20	0.03	<10	<10	81	<10	4		
S850071		<20	0.23	<10	<10	246	<10	21		
S850072		<20	0.01	<10	<10	32	<10	18		
S850073		<20	0.41	<10	<10	345	<10	48		
S850074		<20	0.38	<10	<10	168	<10	30		
S850075		<20	0.11	<10	<10	48	<10	43		
S850076		<20	0.26	<10	<10	27	<10	33		
S850077		<20	0.20	<10	<10	205	<10	48		
S850078		<20	0.21	<10	<10	197	<10	73		
S850079		<20	0.01	<10	<10	16	<10	759		

***** See Appendix Page for comments regarding this certificate *****



ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com/geochemistry

To: **ARCWEST EXPLORATION INC.**
2300-1177 WEST HASTINGS ST.
VANCOUVER
VANCOUVER BC V6E 2K3

Page: **Appendix 1**
Total # Appendix Pages: **1**
Finalized Date: **3-JUL-2019**
Account: **SOJEXP**

Project: Eagle and Sparrowhawk

CERTIFICATE OF ANALYSIS TR19146512

CERTIFICATE COMMENTS									
	LABORATORY ADDRESSES								
Applies to Method:	<p>Processed at ALS Terrace located at 2912 Molitor Street, Terrace, BC, Canada.</p> <table border="0"> <tr> <td>CRU-31</td> <td>CRU-QC</td> <td>LOG-21</td> <td>LOG-23</td> </tr> <tr> <td>PUL-31</td> <td>PUL-QC</td> <td>SPL-21</td> <td>WEI-21</td> </tr> </table>	CRU-31	CRU-QC	LOG-21	LOG-23	PUL-31	PUL-QC	SPL-21	WEI-21
CRU-31	CRU-QC	LOG-21	LOG-23						
PUL-31	PUL-QC	SPL-21	WEI-21						
Applies to Method:	<p>Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.</p> <table border="0"> <tr> <td>Ag-OG46</td> <td>Au-ICP21</td> <td>Cu-OG46</td> <td>ME-ICP41</td> </tr> <tr> <td>ME-OG46</td> <td></td> <td></td> <td></td> </tr> </table>	Ag-OG46	Au-ICP21	Cu-OG46	ME-ICP41	ME-OG46			
Ag-OG46	Au-ICP21	Cu-OG46	ME-ICP41						
ME-OG46									

Appendix C Statement of Expenditures

Exploration Work type	Comment	Days			Totals
Personnel (Name)* / Position	Field Days (actual days)	Days	Rate	Subtotal*	
Jeff Kyba - VP Exploration	June 9 - 13	5	\$1,000.00	\$5,000.00	
Nigel Luckman - COO	June 9 - 13	5	\$1,000.00	\$5,000.00	
Scott McBride - Senior Geologist	June 9 - 13	5	\$750.00	\$3,750.00	
Bruno Kieffer - Geologist	June 9 - 13	5	\$650.00	\$3,250.00	
				\$17,000.00	\$17,000.00
Office Studies			List Personnel		
Report preparation	Jeff Kyba	2.0	\$1,000.00	\$2,000.00	
				\$2,000.00	\$2,000.00
Ground Exploration Surveys	Area in Hectares/List Personnel				
Reconnaissance		9200	<i>captured in Personnel</i>		
Prospect		9200	<i>field expenditures above</i>		
Geochemical Surveying	Number of Samples	No.	Rate	Subtotal	
Rock	44	44.0	\$40.00	\$1,760.00	
				\$1,760.00	\$1,760.00
Transportation		No.	Rate	Subtotal	
truck rental	Two trucks	12.00	\$125.00	\$3,000.00	
ATV	One Side-by-side	12.00	\$135.00	\$1,620.00	
fuel			\$0.00	\$1,000.00	
Other	ATV trailer	12.00	\$30.00	\$360.00	
Ferry	1 vehicle, 1 driver	1.00	\$183.50	\$183.50	
				\$6,163.50	\$6,163.50
Mobilization					
Personnel (Name)* / Position	Field Days (list actual days)	Days	Rate	Subtotal*	
Jeff Kyba - VP Exploration	June 14-15	2	\$1,000.00	\$2,000.00	
Nigel Luckman - COO	June 14,	1	\$1,000.00	\$1,000.00	
Scott McBride - Senior Geologist	June 14,	1	\$750.00	\$750.00	
Bruno Kieffer - Geologist	June 14-15	2	\$650.00	\$1,300.00	
				\$5,050.00	\$5,050.00
Accommodation & Food	Rates per day				
Hotel	Babine Resort (2 rooms, 2 nights)	4.00	\$90.00	\$720.00	
Hotel (ferry state room)	De-mob night ferry	1.00	\$120.00	\$120.00	
Lodge	Morrison Camp 4 nights, 4 rooms (all incl.)	16.00	\$160.00	\$2,560.00	
Meals	day rate	4.00	\$75.00	\$300.00	
				\$3,700.00	\$3,700.00
Freight, rock samples				\$0.00	\$128.29
				\$128.29	\$128.29
TOTAL Expenditures					\$35,801.79

Appendix D Statement of Qualifications

QP CERTIFICATE – JEFFREY KYBA

To Accompany the Report titled “ASSESSMENT REPORT ON THE 2019 PROSPECTING AND GEOCHEMISTRY OF THE SPARROWHAWK PROJECT; OMINECA MINING DIVISION, NORTHEASTERN BABINE LAKE, BRITISH COLUMBIA” dated July 15th, 2019 for ArcWest Exploration Inc.

I, Jeffrey William Kyba, of the Village of Masset, British Columbia, hereby certify that:

1. I am presently Vice President of Exploration for ArcWest Exploration Inc. with a business address located at:

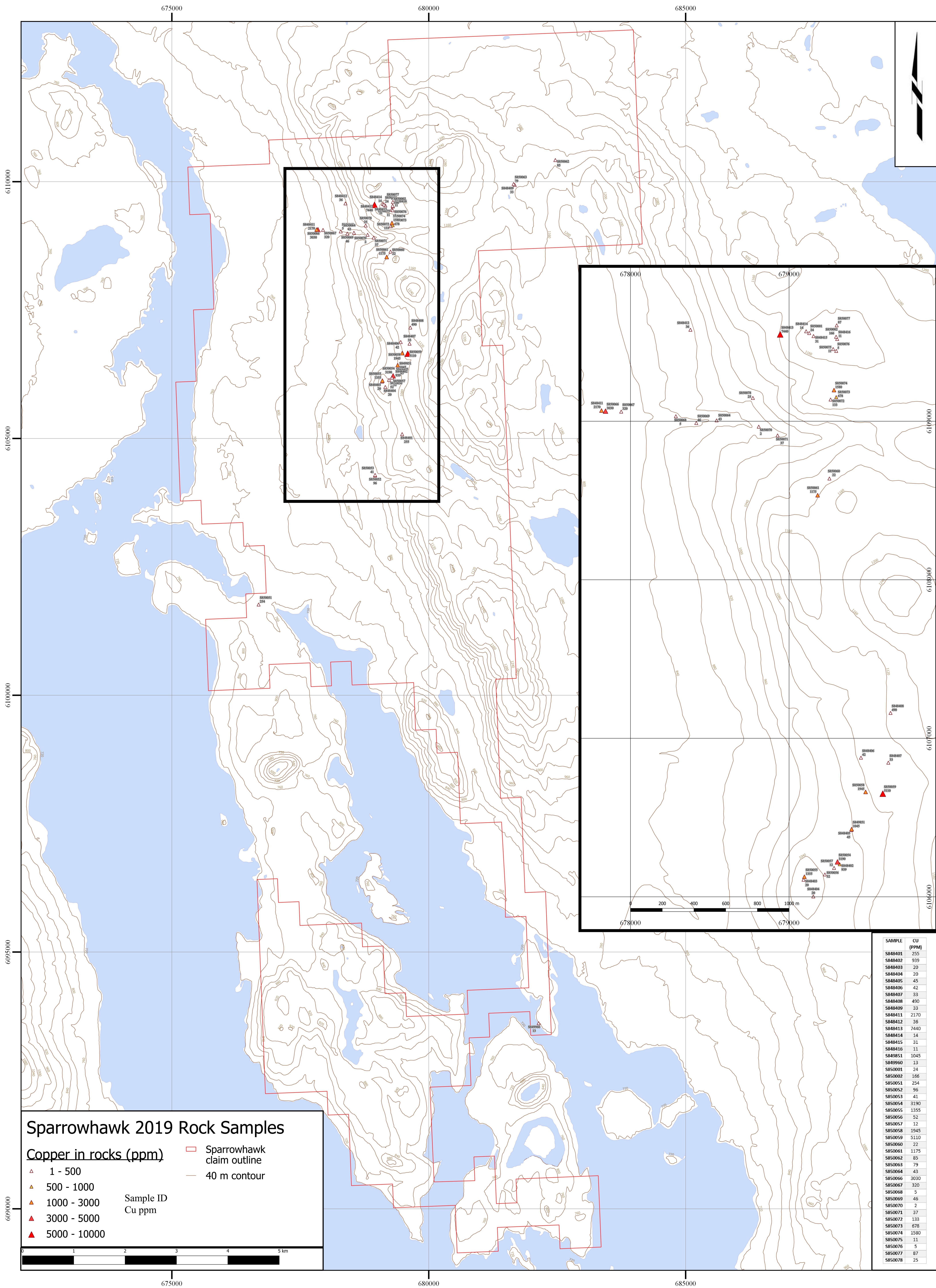
2300 – 1177 West Hastings Street Vancouver BC, V6E 2K3
2. I am a Professional Geologist registered (License No. 40463) as a member of the Association of Professional Engineers and Geoscientists of British Columbia. I graduated from the University of Victoria in 2007 with a Bachelor of Science Degree in Geoscience.
3. I have been actively engaged as an Exploration Geologist in the Mineral Industry since graduation including previous work programs involving nickel-copper-cobalt-platinum group element deposits in northern BC, copper-gold-molybdenum deposits in Australia and a variety of porphyry copper-gold-silver-molybdenum and related deposits in throughout BC.
4. I have prepared all sections of this report.

Signed and dated this 15th day of July, 2019 at Masset, British Columbia

Jeffrey William Kyba, B.Sc., P.Ge.,

Vice President of Exploration, ArcWest Exploration Inc.





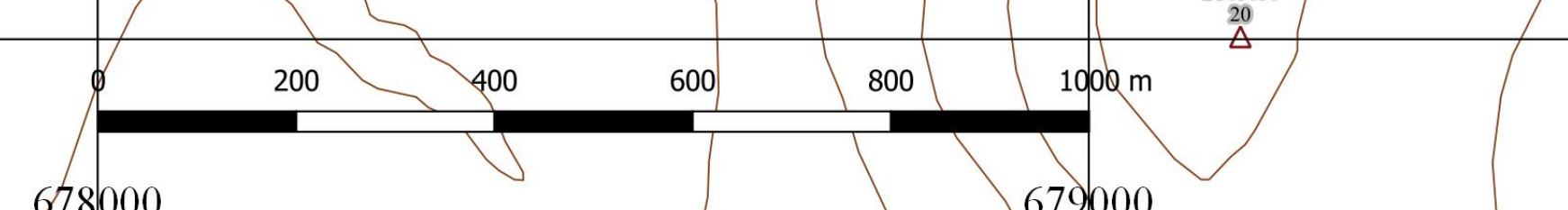
Sparrowhawk 2019 Rock Samples

Copper in rocks (ppm)

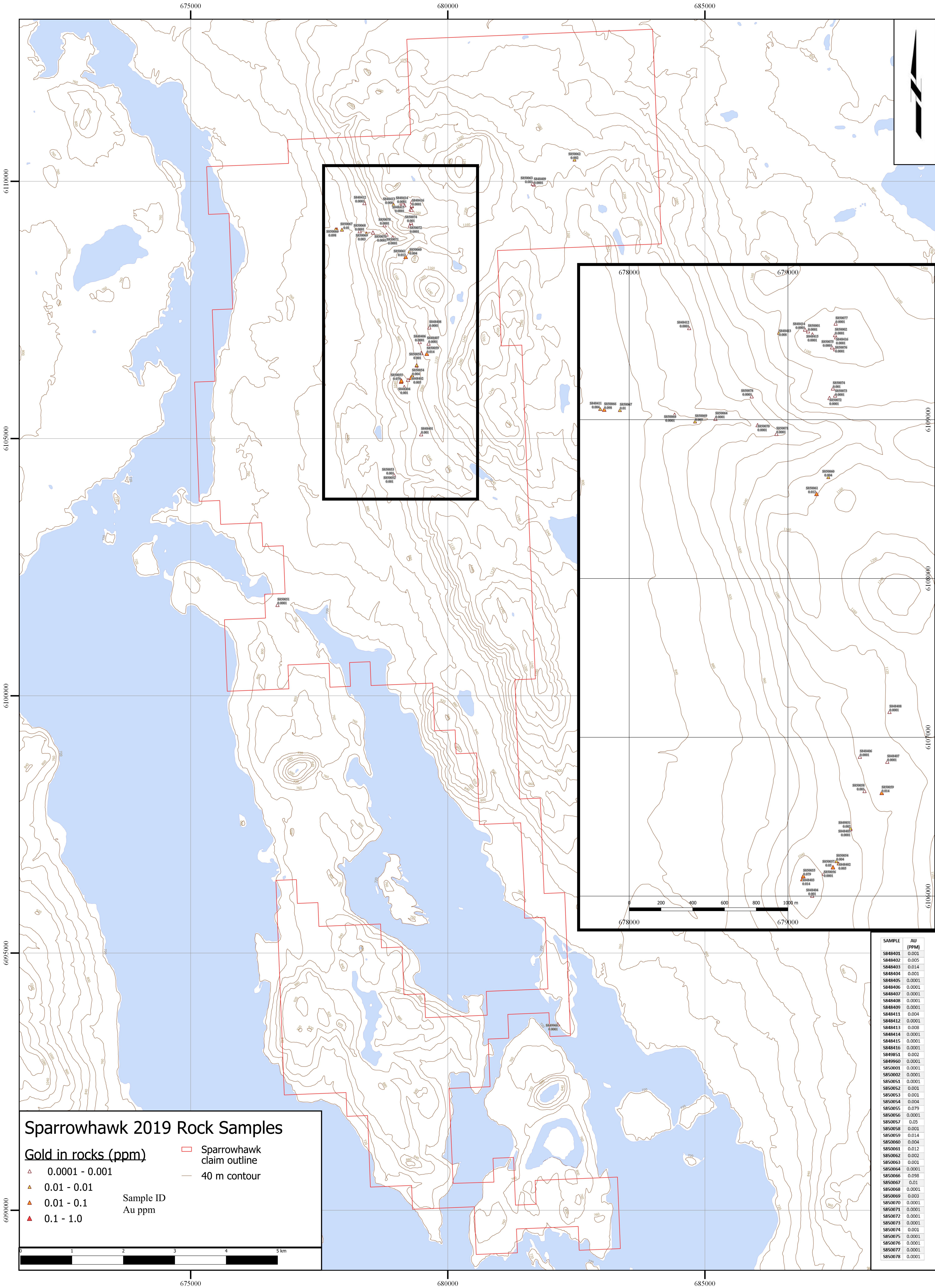
- △ 1 - 500
- ▲ 500 - 1000
- ▲ 1000 - 3000
- ▲ 3000 - 5000
- ▲ 5000 - 10000

- Sparrowhawk claim outline
- 40 m contour

Sample ID
Cu ppm



SAMPLE	CU (PPM)
S848401	255
S848402	939
S848403	20
S848404	20
S848405	45
S848406	42
S848407	33
S848408	490
S848409	33
S848411	2170
S848412	26
S848413	7440
S848414	14
S848415	31
S848416	11
S849851	1045
S849960	13
S850001	24
S850002	166
S850051	254
S850052	96
S850053	41
S850054	3190
S850055	1355
S850056	52
S850057	12
S850058	1945
S850059	5110
S850060	22
S850061	1175
S850062	85
S850063	79
S850064	43
S850066	3030
S850067	320
S850068	5
S850069	46
S850070	2
S850071	37
S850072	133
S850073	678
S850074	1580
S850075	11
S850076	5
S850077	87
S850078	25



Sparrowhawk 2019 Rock Samples

Gold in rocks (ppm)

- △ 0.0001 - 0.001
- ▲ 0.01 - 0.01
- ▲ 0.01 - 0.1
- ▲ 0.1 - 1.0

Sample ID
Au ppm

- Sparrowhawk claim outline
- 40 m contour



SAMPLE	AU (PPM)
S848401	0.001
S848402	0.005
S848403	0.014
S848404	0.001
S848405	0.0001
S848406	0.0001
S848407	0.0001
S848408	0.0001
S848409	0.0001
S848411	0.004
S848412	0.0001
S848413	0.008
S848414	0.0001
S848415	0.0001
S848416	0.0001
S848417	0.0001
S848418	0.0001
S848419	0.0001
S848420	0.0001
S848421	0.0001
S848422	0.0001
S848423	0.0001
S848424	0.0001
S848425	0.0001
S848426	0.0001
S848427	0.0001
S848428	0.0001
S848429	0.0001
S848430	0.0001
S848431	0.0001
S848432	0.0001
S848433	0.0001
S848434	0.0001
S848435	0.0001
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S848441	0.0001
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S848445	0.0001
S848446	0.0001
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S848458	0.0001
S848459	0.0001
S848460	0.0001
S848461	0.0001
S848462	0.0001
S848463	0.0001
S848464	0.0001
S848465	0.0001
S848466	0.0001
S848467	0.0001
S848468	0.0001
S848469	0.0001
S848470	0.0001
S848471	0.0001
S848472	0.0001
S848473	0.0001
S848474	0.0001
S848475	0.0001
S848476	0.0001
S848477	0.0001
S848478	0.0001