BC Geological Survey
Assessment Report
40275

Ministry of Energy and Mines
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: GEOCHEMICAL

TOTAL COST: $9,373.42

AUTHOR(S): A. Kikauka, P Geo

SIGNATURE(S): A. Kikauka

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

YEAR OF WORK: 2022

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S): 5925720

PROPERTY NAME: Pomeroy (Copper Island)

CLAIM NAME(S) (on which the work was done): 848551

COMMODITIES SOUGHT: Cu-Ag (V, Mn)

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 092K 071, 092K 119 (Pomeroy 2, 3, 4)

MINING DIVISION: Nanaimo

NTS/BCGS: 092K 3/W, 092K.014

LATITUDE: 50 ° 07 '04 " **LONGITUDE:** 125 ° 16 '20 " **(at centre of work)**

OWNER(S):
1) Jared Lazerson
2)

MAILING ADDRESS:
3689 Angus Dr, Vancover BC V6J 4H6

OPERATOR(S) [who paid for the work]:
1) same
2)

MAILING ADDRESS:
same

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
amygdaloidal basalt and andesitic volcanic rocks of the Upper Triassic Karmutsen Formation (Vancouver Grp) trend NW
amygdules filled with calcite, quartz, chlorite, actinolite or prehnite. rocks are chloritized and cut by numerous stringers and veinlets of quartz, calcite and epidote.
Chalcocite is the most abundant mineral with native copper and chalcopyrite in lesser amounts. Bornite and pyrite are rare, as well as malachite, azurite and cuprite
Rock is strongly sheared and fractured in an east direction with dips steeply north. The fractures carry chalcocite stringers and blebs

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: 852, 5076, 22264

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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	50 SGH Hydrocarbon analysis Actlabs compounds in the C5-C17 range	848551	7,155.30
Silt			
Rock	4 ALS Cu-PGK061LI Cu sequential leach	848551	2,218.12
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	9,373.42

Print Form

NTS 092K 03/W, TRIM 092K.014

LAT. 50 07' 04" N

LONG. 125 16’ 20" W

GEOCHEMICAL

REPORT ON

COPPER ISLAND (POMEROY) MINERAL PROPERTY

POMEROY, COPPER FLAT

MINERAL OCCURRENCES

HERIOT BAY, B.C.

QUADRA ISLAND

Nanaimo Mining Division

by

Andris Kikauka, P.Geo.

4199 Highway 101,

Powell River, BC V8A 0C7

April 6, 2022

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1 Summary

The Copper Island mineral claims are located on west-central Quadra Island, approximately 15 kilometers north of Campbell River, BC. The Copper Island property features a cluster of small to medium size (several thousand tonnes) copper and silver bearing mineral occurrences that collectively, constitute a large resource of high-grade copper (silver is associated with the copper mineralization). Cu-Ag bearing mineralization within the property is hosted in basaltic/andesitic volcanic rocks of the Lower-Upper Triassic Karmutsen Formation (volcanic hosted Cu-redbed deposit type). Copper-bearing minerals include chalcocite, with minor occurrences of bornite, native copper, cuprite, malachite and azurite.

The Copper Island property is situated 10 kilometers north of Campbell River, B.C., in the Nanaimo Mining Division of southwest British Columbia, Canada. Access to Quadra Island is via 10 minute (3 kilometers) ferry from Campbell River to Quathiaski Cove. The property is 4 kilometers northwest of the Community of Heriot Bay, Quadra Island. There are numerous secondary forestry and logging roads from Heriot Bay that give good access to most parts of the property. The property consists of five (5) contiguous mineral claims that cover an area of 1,056.62 hectares. Mineral tenures are held by Jared Lazerson (Copper Island Mines Ltd.).

The property also has potential vanadium and manganese concentrations. Previous work has identified vanadium geochemical values that are reported in black, siliceous (& laminated) carbonaceous clastic rocks (located several hundred meters south of the Pomeroy Zone). It is unclear whether the vanadium and manganese are associated with copper-silver. The north portion of Vancouver Island has several 90^{th} percentile RGS anomalies for manganese and vanadium, and may reflect Triassic age black smokers, rift pull-apart zones (sea-floor spreading).

Copper-silver bearing mineralization occurs in amygdaloidal basaltic lava flows. Mineralization is classified as volcanic redbed copper deposit type (fault-breccia-fracture fill mineralization hosted in lava flows in submarine environment). Regional controls include extensional fault structures associated with mafic tuffs and stacked deposits at several stratigraphic intervals separated by barren basalt characterized by amygdales and veinlets of quartz-calcite-prehnite alteration. Mineralization occurs as replacement of amygdales, within veins, fracture filling and disseminations. Faulting and minor brecciation are associated with the mineralized zones. Overlying the mineralized flow is a homogeneous medium-coarse grained dense homogeneous mafic flow.

Quadra Island is underlain by Triassic & Jurassic volcanic, sedimentary & intrusive rocks. The predominant rocks are Triassic Karmutsen Formation volcanics, Quatsino formation limestones and Island intrusives of Middle Jurassic age, part of the Coast Intrusive complex. The southern part of the island is covered by Quaternary glacial debris. Glacio-alluvial deposits cover low-lying contacts and fault zones. The Karmutsen and Quatsino Formations host numerous mineral deposits on Vancouver Island such as magnetite (Fe3O4), gold-silver, and copper-lead-zinc-silver-gold deposits such as Buttle Lake. Porphyry type copper, molybdenum-rhenium deposits

of Island Copper at the north end of Vancouver Island, and the iron, copper, and high-calcium limestone deposits on Texada Island. The claim area is underlain by Karmutsen volcanics, which consist chiefly of amygdaloidal, fine to medium-grained, heavily fractured basaltic lava. Mineralized areas are exposed on higher topographic relief where outcrop is exposed. The mineral of interest is chalcocite (CuS), a secondary mineral of copper, with subordinate and local occurrences of bornite (Cu5 FeS4) cuprite (Cu2O), malachite (Cu CO3 (OH)), and native copper (Cu), in highly oxidized materiel. Chalcocite occurs in the higher-grade showings as partial to complete replacement of amygdules in the upper portion of individual flow structures, and as chalcocite in veinlets and fracture fillings, disseminated amygdules (similar to the Keweenan, Point Michigan, copper-bearing basaltic flows). The volcanic flows range in thickness from 1-12 feet (0.3-3.7 meters), and vary in composition from andesitic to basaltic. Many are highly amygdaloidal and the cavities are mainly filled with calcite, quartz, and chlorite. Regionally the volcanic rocks are traversed by major faults that trend northwesterly and have associated jointing and fracturing. Distribution of copper mineralization within the volcanic rocks is erratic and occurs mainly along fractures, within quartz-calcite veinlets, in the amygdules, and disseminated in the flows. Chalcocite is the most abundant copper mineral, with some native copper, malachite and azurite.

Considerable previous work has been performed on the Pomeroy Group copper-silver bearing mineralization. The first recorded mining in the project area was in 1906- 1907, when high grade ores from the Copper Cliff deposit were mined from an adit in the cliff face and shipped to a smelter at Ladysmith B.C. This smelter has since closed. The next period of activity was between 1915 and 1919 when ores from the Pomeroy area were mined by the Valdez Copper Company and shipped to the smelter at Anyox B.C. Samples from the Senator claim in the Pomeroy area were tested for Radium in 1922. Testing was done on siliceous carbonaceous thin-bedded sediments with an electroscope. the instrument used to detect radioactivity at that time. No radioactivity was detected. In 1929 the Pomeroy area was acquired as the Hercules 1-10 Claims by the Hercules Consolidated Mining Smelting and Power Company. Samples collected by Gunning identified acid leachable vanadium which contain the highest V values in a black siliceous sediment, overlying a copper mineralized flow. In 1952-53, Dodge Copper Mines Limited carried out a detailed exploration program of trenching and diamond drilling. Dodge Copper Mines drilled 145 holes totaling 8800 feet on various deposits. The Quadra Mining Company acquired the property in 1968. In 2011, the Pomeroy Group of mineral claims were acquired by Copper Island Mines Ltd. A program of geochemical sampling was carried out and identified several zones of high-grade copper located in the Pomeroy 1-4 mineralized zones, as well as new showings adjacent to the known occurrences.

The known ore deposits occur mainly on the surface and have bean drilled, trenched and sampled in by Prince Stewart Mines Ltd (Sheppard, 1974). Ore tonnage estimates have been made by previous operators (Note-estimates are non-compliant with NI 43-101 standards & guidelines)

In 1973 Prince Stewart Mines Ltd. optioned the properties from Quadra and Quadra Bell and carried out intensive work including 392 metres of diamond drilling. A report of the drilling of one vertical hole to 33.6 metres on the Bit1 claim encountered no visible sulphide mineralization and the remaining holes were recommended to be inclined. Results from the remaining holes are unknown. Prince Stewart estimated indicated reserves from several mineralized zones:

ZONE	TONS*	% COPPER
Pomeroy 1	12,300	3.55
Pomeroy 2 North	5,000	2.70
Pomeroy 2 South	25,000	2.11
Pomeroy 3	194,500	0.67
Pomeroy 4	10,500	2.69
Beaver 1	18,000	1.73

** These reserves probably should be considered as inferred by current standards.*

In 1996 the property was acquired by Ms. Elisa Reyes as the Copper Bell, Copper Cliffs and VC claims. Reyes had Minestart Management Inc. evaluate the property based on property history, review of mineralization, mineralized zones and inferred reserves. Reyes also contracted a mine technologist to review the feasibility of acid leaching 3,000 tons of broken mineralized material extracted previously by Quadra and Quadra Bell. In 1997 the claims were forfeited.

In 2011, the claims were acquired by Copper Island Mines Ltd, and a program of geochemical sampling was carried out on the Pomeroy, Beaver and Colleen Zones. A significant portion of geochemical sampling returned >2% Cu from numerous new & historic copper-silver bearing mineral occurrences (Betmanis, 2012).

The Pomeroy 3, 4 Zone occurs over a strike length of approximately 200 meters (largest of the numerous Cu-Ag zones identified), following a northwest to north trending formation of amygdaloidal basaltic flows. Several parallel zones have been identified (e.g. Copper Valley, Butte, Copper Bell, Colleen, Vanadium & Ingersoll). The Pomeroy zones have been extensively trenched and sampled by large open cuts that exposed large areas of low-grade copper mineralization in a calcite filled amygdules and veinlet stockwork that is evident throughout the property. The other mineralized zones consist of increased quartz, calcite veining, and copper sulphides in 1-10 meter wide altered and fractured zone traced intermittently for approximately 20-200 meters on surface.

The following list describes the various Minfile occurrences located within Copper Island mineral claims.

POMEROY 1: 336900E, 5554850N

Area is highly disturbed from pervious workings with blasted material covering up most of the bedrock. There is a 4m long x 3m wide x 3m deep pit. Neighboring outcrop is light-dark green fgr mafic with angular clastic fragments of quartz, epidote, chlorite up to 1cm in a fine grained matrix. There are amygdules present however the majority are angular. This indicates a fault zone breccia or possible pyroclastic flow west of the main pit, in the forest are a series of small trenches (3m x 2m) and blast sites with visible blebs of chalcocite up to 2cm. Malachite staining seen throughout blasted rock. Area of bedrock open cuts with observed mineralization is 25m x 15m. Historic estimates for Pomeroy 1 mineral zone are 16,500 short tons @3.67% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

East of Pomeroy 1 there is a normal fault trending 315 (Fig 3) with the hanging wall on the NE side with a potential vertical displacement of 10m. Mineralization is observed along an E-W trending ridge structure up to 200m long. The structure has potential to be mineralized 200m long x 25m wide x 5m thick. The host rock is a medium green fine grained mafic flow with amygdules up to 5mm. Rock is weathered red-brown and has crackled brecciated appearance. Malachite staining is visible on weathered surface. The dominant rock type is medium green fine grained basalt with quartz and black amygdules. Coarse disseminated blebs of chalcocite up to 3cm were noted.

POMEROY 2: 337540E, 5554480N

North Zone:

Host rock is a fine grained dark green vesicular mafic with 1-3mm amygdules filled with qtz, epidote and chalcocite stained with malachite. Mineralization in pit extends approximately 5m wide x15m long x2m deep. Flows at pit have a shallow dip of 10-15 degrees to south. Rock has crackled weathered appearance, minor brecciation.
Sheppard, 1974: PROVEN: 5,000 short tons @ 2.70% Cu
INDICATED: 17,000 short tons @ 2.70% Cu

POMEROY 3: 337750E, 5554300N

Pomeroy 3 is a series of discontinuous mineralized outcrops, trenches and blast pits along the western edge of a flow structure, east of Pomeroy 2 and 4. Mineralization is also seen in trenches in the low lying area between Pomeroy 2 and Pomeroy 3, which is interpreted as a N-S fault extending southward between Pomeroy 3 and 4. Outcrops are medium-dark green fine-grained mafic dominated by quartz amygdules up to 1cm, black amygdules also present. Moderate silicification with some quartz veining. At Pomeroy 3 north, there is an intensely brecciated outcrop, rock is soft and friable, malachite and chalcocite occur as disseminations and fracture fillings. Clasts are angular-subangular and vary from 1-10cm. Mineralization is dominant in the matrix but also coating the clasts. This feature supports that there is a N-S trending fault potentially being the control on mineralization of Pomeroy 2, 3 and 4. Above the mafic, silicified breccia on top of the fault structure, is chalcocite, chalcopyrite and malachite mineralisation. Apparent dip of the Pomeroy 3 mineralized flow is 20 degrees south. From mineralized outcrops and neighboring mineralized pits Pomeroy 3 has a potential thickness of 7 meters.

POMEROY 4: 337650E, 5554150N
Pomeroy 4 is a 200m long x 100m wide structure dipping approximately 15-20o to the south. Mineralization is most apparent on the eastern flank of the structure where there is series of historic pits that extend N-S approximately 70 meters long. The most northerly pit is the site where a historic bulk sample was taken for the Mill. The outcrop contains near vertical fractures that are filled with Chalcocite minor native copper and quartz. Chaotic quartz-carbonate veins and epidote stringers throughout outcrop. Chalcocite is seen disseminated throughout the rock, most noticeably next to veins. Rock has dull grey look, friable, weathered crackled appearance. The southern pit is much larger, 20m long x 15m wide x 10m+ high. Pit has disseminated chalcocite blebs throughout a dark green mafic with small <1mm black amygdules and larger <1cm quartz amygdules. Across the structure along strike is a series of pits and outcrops with weathered, friable malachite stained rock (Photo 18). The top of Pomeroy 4 structure is covered by pods and ridges of dark grey coarse grained mafic (cap flow?).

Pomeroy 3+4
Sheppard, 1974: PROVEN: 972,400 short tons @ 1.22% Cu
INDICATED: 472,000 short tons @ 1.62% Cu

POMEROY 5: 337620E, 5554490N
Pomeroy 5 is east of Pomeroy 2 across the new logging road on the adjacent structure. The mineralized area is 10m long x 2m wide x 2m high. The surrounding rock is a fine grained dark green blocky mafic, whereas at the showing the rock is crackled and weathered as seen in other mineralized zones. Continuous mineralization is not observed, however a NW trending fault contained malachite staining and is traced SE to a series of small mineralized prospects with crackled weathered outcrops with malachite staining. Chalcocite mineralization is hosted in about 10% of the small black 1mm amygdules. The rest of the amygdules are quartz.
Mineral Potential: 100m x 100m x 2m x 2.66 ton/m3 = 53,200 metric tons @ 1.00% Cu

Beaver 1: 338100E, 5553560N
Turtle back structure 100m long (N-S) x 30m wide (E-W). Dark green-grey fine grained mafic with large amounts of Mn staining and high Fe content, highly magnetic on top of ridge. Thin 5mm quartz and epidote veins and stringers throughout outcrop. Three trenches on top of central structure,2 meters wide 2 meters deep. Chalcocite mineralization is visible at the bottom of trenches indicating thickness of 2m+. Malachite staining throughout. Mineralization observed at north end of structure, could entire structure potentially be mineralized. The mineral zone is estimated to contain 19,375 short tons @ 1.74% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

Hall: 336915E, 5555595N
Small blasted pits 3m x 10m on top of a small structure 60m x 30m next to logging road. Mineralization is seen locally within the blasted pits as chalcocite, malachite and azurite. Rock is a dark green fine grained mafic with quartz, chlorite, epidote, chalcocite amygdules 1-3mm in size. Minor Fe and Mn staining. No visible mineralization on neighboring structures which host dark green-grey coarse grained dense mafic flows. West of Hall showing outcrop with 30cm thick quartz veins cutting though mafic flows with epidote stringers.
Sheppard, 1974: PROVEN: 5,000 short tons @ 3.45% Cu
INDICATED: 50,000 short tons @ 2.40% Cu Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

Copper Bell 1: 338290E, 5555028N
Series of small blasts and small pits in an area 15m x 15m. One blast trench found 6m long x 2m wide x 2m deep. Mineralization in this area if found within chaotic quartz-carbonate veins and disseminations in the wallrock proximal to veining. Veins area up to 10cm thick with mafic inclusions up to 5cm. Chalcocite and bornite are the dominant form of copper mineralization within the veins and along selvedges. Chalcocite is seen disseminated in the mafic host rock especially noticeable next to veining. Hostrock is a medium-dark green fine grained mafic that has crackled, brecciated, weathered appearance.

Copper Bell 2: 337920E, 5555150N
Structure is 230m long x 50m wide x 3m thick. Light-medium green amygdaloidal fine grained andesite? It has chl, qtz, and black amygdules. Vuggy quartz clasts and amygdules. 5-10cm quartz veins with visible bornite and malachite. Veins are both vuggy and comb with comb crystal up to 2-2.5cm in length. Epidote stringers throughout. Host rock is moderately silicified giving it lighter appearance. Localized areas have crackled brecciated appearance.
Copper Bell 1 & 2: An estimate of the combined Copper Bell 1 & 2 mineral zones are 112,000 short tons @ 2.55% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

Work performed by the writer in February, 2020 consisted of soil sampling of the Pomeroy 2, 3, & 4 zones (total number = 50), and rock sampling (total number = 4). Geochemical soil sampling was carried out on the central portion of MTO ID# 848551.

Work carried out in 2022 consisted of SGH soil sampling and rock chip samples covering the Pomeroy 2, 3, & 4 mineral zones (similar to 2020 soil sampling which covered the Pomeroy 2, 3, & 4 and Beaver zones). The geochemical surveys focused on areas that returned relatively high copper and silver values from previous work. Soil samples were taken in a 50 m spacing grid pattern using Garmin 60Cx GPS receiver for survey control. Using a tree planting shovel and garden trowel (dug with care to provide minimal damage to A horizon vegetation), approximately 0.1-0.5 kilograms of soil from B horizon (identified by colour/texture change at 25 cm depth), was placed in brown kraft sample bags along with a numbered sample tag identification, and described. Sample bags were labelled with black felt markers, and flagged at soil sample locations. Samples were securely shipped to Actlabs, Ancaster, ON for Prep drying 60 degrees C, sieving 80 mesh prior to SGH hydrocarbon ultra-trace level geochemical analysis (details, methods & procedures are described in Appendix A, Geochemical Analysis &

Methods). The SGH sampling analyzes hydrocarbon chemistry to identify ‘deep-sourced’ metallic concentrations by measuring compounds in the C5-C17 range (over 160 hydrocarbon compounds down to low parts per trillion), having the advantage of delineating mineral targets through thick layers of cover and overburden. The results of SGH sampling identified a ‘Rabbit-Ear Anomaly’ (337,425E to 337,675 E and 5,554,225 N to 5,554,275 N) roughly covering a 250 X 50 meter area in the area of the Pomeroy 3 & 4 zones. A subjective 4.0 out of 6.0 confidence rating is given to the Rabbit-Ear shaped SGH anomaly (Appendix A A22-02196 Actlabs SGH Report). This SGH anomaly zone corresponds to Pomeroy 3 & 4 zones that are characterized by sheared and fractured sulphide and carbonate oxide mineralization. Previous soil sample geochemistry in 2020 identified highest Cu-Ag soil anomalies in the area southeast of the SGH Rabbit-Ear anomaly. A description of SGH soil samples taken in 2022 are described as follows:

ID number	northing UTM	easting UTM	colour	depth cm	texture
101	5554050	337700	red-brown	20	silt-sand, trace clay
102	5554050	337750	red-brown	20	silt-sand, trace clay
103	5554050	337800	red-brown	20	silt-sand, trace clay
104	5554050	337850	red-brown	20	silt-sand, trace clay
105	5554100	337700	red-brown	20	silt-sand, trace clay
106	5554100	337750	red-brown	20	silt-sand, trace clay
107	5554100	337800	red-brown	20	silt-sand, trace clay
108	5554100	337850	red-brown	20	silt-sand, trace clay
109	5554150	337550	red-brown	20	silt-sand, trace clay
110	5554150	337600	red-brown	20	silt-sand, trace clay
111	5554150	337650	red-brown	20	silt-sand, trace clay
112	5554150	337700	red-brown	20	silt-sand, trace clay
113	5554150	337750	red-brown	20	silt-sand, trace clay
114	5554200	337500	red-brown	20	silt-sand, trace clay
115	5554200	337550	red-brown	20	silt-sand, trace clay
116	5554200	337600	red-brown	20	silt-sand, trace clay
117	5554200	337650	red-brown	20	silt-sand, trace clay
118	5554200	337700	red-brown	20	silt-sand, trace clay
119	5554250	337450	red-brown	20	silt-sand, trace clay
120	5554250	337500	red-brown	20	silt-sand, trace clay
121	5554250	337550	red-brown	20	silt-sand, trace clay
122	5554250	337600	red-brown	20	silt-sand, trace clay
123	5554250	337650	red-brown	20	silt-sand, trace clay
124	5554300	337350	brown	20	silt-sand, trace clay
125	5554300	337400	brown	20	silt-sand, trace clay
126	5554300	337450	brown	20	silt-sand, trace clay
127	5554300	337500	red-brown	20	silt-sand, trace clay
128	5554300	337550	red-brown	20	silt-sand, trace clay
129	5554350	337300	brown	20	silt-sand, trace clay
130	5554350	337350	brown	20	silt-sand, trace clay

131	5554350	337400	brown	20	silt-sand, trace clay
132	5554350	337450	red-brown	20	silt-sand, trace clay
133	5554350	337500	red-brown	20	silt-sand, trace clay
134	5554400	337500	brown	20	silt-sand, trace clay
135	5553450	337500	brown	20	silt-sand, trace clay
136	5553450	337550	brown	20	silt-sand, trace clay
137	5553450	337600	red-brown	20	silt-sand, trace clay
138	5553450	337650	red-brown	20	silt-sand, trace clay
139	5553450	337700	red-brown	20	silt-sand, trace clay
140	5553500	337500	red-brown	20	silt-sand, trace clay
141	5553500	337550	red-brown	20	silt-sand, trace clay
142	5553500	337600	red-brown	20	silt-sand, trace clay
143	5553500	337650	brown	20	silt-sand, trace clay
144	5553500	337700	brown	20	silt-sand, trace clay
145	5553550	337450	red-brown	20	silt-sand, trace clay
146	5553550	337500	red-brown	20	silt-sand, trace clay
147	5553550	337550	red-brown	20	silt-sand, trace clay
148	5553550	337600	brown	20	silt-sand, trace clay
149	5553550	337650	brown	20	silt-sand, trace clay
150	5553550	337700	brown	20	silt-sand, trace clay

SGH follow up target for drilling in the area described as follows:

Pomeroy 3 & 4 zones SGH (2022) 'Rabbit- Ear Anomaly' (337,425E to 337,675 E and 5,554,225 N to 5,554,275 N) roughly covering a 250 X 50 meter area.

Previous soil sample geochemistry in 2020 identified highest Cu-Ag soil anomalies in the area southeast of the SGH Rabbit-Ear anomaly. 2020 soil sample Cu-Ag anomalies, indicate follow up work (drilling/trenching) in the area described as follows:

Pomeroy 3 zone soil sample survey (2020) Cu in soil anomaly >1,000 ppm (337,675E to 337,775 E and 5,553,025 N to 5,553,225 N) roughly covering a 100 X 200 meter area. Also; **Pomeroy 2 zone** (2020) Cu in soil anomaly >845 ppm (337,525E to 337,625 E and 5,554,575 N to 5,554,625 N) roughly covering a 100 X 50 meter area.

There has been considerable drilling in the Pomeroy 3, 4 area with shallow drill holes, and several thousand tonnes of 1-3% Cu has been outlined in 1-6 meter wide zones. Plotted drill holes indicate 2 mineralized zones, an upper zone dipping 20-25 degrees into hillside (north dip), and a lower zone dipping 10 degrees into hillside (north dip). The upper & lower zones are separated by about 18 meters of altered (calcite, quartz, chlorite, actinolite, prehnite), highly amygdaloidal basalt. The mineralogy of copper mineralization consists mainly of chalcocite with minor malachite-azurite, chalcopyrite and native copper. This mineralogy suggests the ore has a portion of copper oxide (carbonate oxides such as malachite, azurite, and minor cuprite), and copper sulphide (chalcocite, minor chalcopyrite, trace bornite), and minor native copper as residual. This 'high oxide/residual Cu' is the principal target that is shown in Block D-1, 2, & 3 (Pomeroy 4), and Block C & B (Pomeroy 3), based on DDH data from Dodge Copper Mines Ltd 1953 (source: Property File, Prince Stewart Mines Ltd, Sheppard, 1972). The 1953 drilling covers an area of 200 X 70 meters, elongated east-west, and this area coincides with the SGH hydrocarbon soil geochemical 'Rabbit- Ear Anomaly' (337,425E to 337,675 E and 5,553,225 N to 5,553,275 N).

The 1953 drilling also confirms steeper dipping mineralization along fracture/fault zones with an apparent N-S trend. The 2022 SGH anomaly correlates with shallow dipping mineralization in highly amygdaloidal basalt with moderate to intense alteration (calcite-prehnite-quartz-chlorite). The 2020 soil Cu-Ag in soil geochemical anomalies correlate with steeper dipping mineral zones. A combination of steep and shallow dipping mineral zones (infilling fracture/fault structures) occur in altered basaltic host rock. It is envisioned that sea-floor spreading rift tectonics led to complex submarine, and oxidized flow-top lava flows with fractured and faulted related infill Cu-Ag bearing mineralization.

The rock chip sampling done in 2022 consisted of sequential leach for oxide, sulphide and residual geochemical analysis. A total of 4 rock samples, ranging from 1.07-1.77 kilograms in weight, of acorn sized rock chips were taken with rock hammer and moil, and placed in marked poly bags and shipped to ALS Chemex Labs Ltd, North Vancouver, BC for Prep-31 & Cu-PKG06LI sequential leach for oxide, sulphide and residual geochemical analysis, (Appendix A). Location was aided by maps from www.Mapplace and Google Earth. Locations were marked by waypoints generated by Garmin 60Cx GPS receiver and considered accurate to within 3-5 meter accuracy for northing and easting (elevations are considered estimates plus or minus 20 meters, and can not be relied upon).

A description of rock chip samples (2022) are summarized (Analysis certificate VA22039722):

ID No	Easting	Northing	Elev (m)	Sample Type	Lithology	Alteration
22CIR-1	337698	5554192	126	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-2	337683	5554133	130	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-3	337545	5554456	170	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-4	337690	5554159	128	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite

ID No	Mineralization	Zone Name	strike	dip	CuT-SEQ06 Total Cu %
22CIR-1	chalcocite, malachite, native Cu	Pomeroy 3	160	77 W	5.56
22CIR-2	chalcocite, malachite, chalcopyrite	Pomeroy 3	166	70 W	2.23
22CIR-3	chalcocite, malachite, bornite, chalcopyrite	Pomeroy 2	115	88 N	4.99
22CIR-4	chalcocite, malachite, azurite	Pomeroy 3	163	75 W	4.29

ID No	AA06s sulphuric % Cu	% oxide	AA16s cyanide % Cu	% sulphide	AA62s residual % Cu	% residual
22CIR-1	2.18	39.2	1.22	21.9	2.16	38.8
22CIR-2	1.21	54.3	0.97	43.5	0.05	0.04
22CIR-3	1.45	29.1	3.45	69.1	0.09	0.02
22CIR-4	2.11	49.2	1.49	34.7	0.69	0.16

Rock samples 22CIR-1, 2, & 4 were taken from the east part of the **Pomeroy 3** zone contains an average of:
47.6% oxide Cu,
33.4% sulphide Cu, &
13% residual Cu (native copper).
Rock sample 22CIR-3 was taken from the north-central part of the **Pomeroy 2** zone and this rock sample contains an average of:
29.1% oxide Cu,
69.1% sulphide Cu, &
0.02% residual Cu (native copper).
The Pomeroy 3 rock samples contain relatively higher oxide (malachite/azurite/cuprite) and residual type copper (native copper) mineralization. The Pomeroy 2 rock sample contains relatively high sulphide (chalcocite, chalcopyrite), and low oxide and residual type copper mineralization. The well-defined SGH Rabbits Ear Anomaly correlates with the amygdaloidal altered basalt in the Pomeroy 3, 4 zone rock samples (ID 22CIR-1, 2, & 4). The SGH anomaly correlates with relatively higher oxide and residual copper mineralization, with increased quartz-carbonate-chlorite-prehnite alteration. Core drilling of the SGH anomaly (Pomeroy 3, 4), is recommended. Also, historical data should be converted to digital format and plotted on a common GIS base showing results of historic surveying and drilling/trenching. Digitizing will assist in identifying targets for follow-up work. In order to assess the economic potential of the property, IP geophysics is recommended on the Pomeroy, Beaver, Colleen, Copper Valley, Copper Valley, Butte and Doe Zones to test for chargeability (disseminated sulphide) mineralization, and resistivity (silicification). Based on results of geophysics, additional follow-up drilling, trenching, & bulk sample testing (primarily Pomeroy 3,4 zone and other mineral zones within the claims), may be recommended.

2 Introduction

The following report contains geochemical (rock & soil) sampling information on the Pomeroy & Beaver showings located within the Copper Island mineral property. The information in this report covers surveys & geochemical sampling carried out by the writer done on Feb 2-9, 2020

This technical report has been prepared to conform with requirements for reporting assessment work with MEMPR. The writer has reviewed data pertaining to the property and has prepared a technical report that describes historical work completed on the property, reviews the results of recent geochemical surveys and makes recommendations for further work if warranted.

3 Reliance on Other Experts

The writer has researched previous work by examining MEMPR assessment reports, property files, annual reports, and corporate files. Work done by Sheppard (1973-74, AR 5,076), and Property File has been heavily relied on.

4 Property Description and Location

4.1 Mineral Tenures

Details of the status of tenure ownership for the Copper Island - Pomeroy, Beaver, Copper Bell property were obtained from the Mineral-Titles-Online (MTO) electronic staking system managed by the Mineral Titles Branch of the Province of British Columbia. This system is based on mineral tenures acquired electronically online using a grid cell selection system. Tenure boundaries are based on lines of latitude and longitude. There is no requirement to mark claim boundaries on the ground as these can be determined with reasonable accuracy using a GPS. The Copper Island - Pomeroy, Beaver, Copper Bell claims have not been surveyed.

The mineral tenures comprising the Copper Island - Pomeroy, Beaver, Copper Bell property are shown in Figure 2 and listed in the table below. The claim map shown in Figure 2 was generated from GIS spatial data downloaded from the Government of BC, Integrated Land Management Branch (ILMB), Land and Resource Data Warehouse (LRDW) (http://archive.ilmb.gov.bc.ca/lrdw/). These spatial layers are generated by the Mineral-Titles-Online (MTO) electronic staking system that is used to locate and record mineral tenures in British Columbia.

The property consists of five (5) contiguous mineral claims that cover an area of 1,056.62 hectares. Mineral tenures are held by Jared Lazerson (Copper Island Mines Ltd.)

Claim details given in Table 1 were obtained using an online mineral tenure search engine available on the MTO web site. All claims listed in the table are in the Nanaimo Mining Division within NTS map sheet 92K/03W, BCGS 092K.014.

Table of mineral claims (registered MTO titles):

Tenure Number	Type	Claim Name	Issue Date	Good Until	Area (ha)
808082	Mineral	Pomeroy 1	03 JUL 2010	21 SEP 2023	20.72
844515	Mineral		26 JAN 2011	21 SEP 2023	41.4161
848551	Mineral		10 MAR 2011	21 SEP 2023	331.5079
848942	Mineral		15 MAR 2011	21 SEP 2023	207.1898
848943	Mineral		15 MAR 2011	21 SEP 2023	455.7849

Area Total= 1,056.6187 Ha

4.2 Claim Ownership

Information posted on the MTO website indicates that all of the five claims listed are owned 100% by Jared Lazerson, who holds these claims on behalf of Copper Island Mines Ltd.

4.3 Required Permits and Reporting of Work

In British Columbia, an individual or company holds the available mineral or placer mineral rights as defined in section 1 of the Mineral Tenure Act by acquiring title to a mineral tenure. This is now done by electronic staking as described above. In addition to mineral or placer mineral rights, a mineral title conveys the right to use, enter and occupy the surface of the claim or lease for the exploration and development or production of minerals or placer minerals, including the treatment of ore and concentrates, and all operations related to the business of mining providing the necessary permits have been obtained.

In order to maintain a mineral tenure in good standing exploration work or cash in lieu to the value required must be submitted prior to the expiry date. The amount required is specified by Section 8.4 of the British Columbia Mineral Tenure Act Regulation.

Up to 10 years of work or cash in lieu can be applied on a claim. A change in anniversary date can be initiated at anytime and for any period of time up to 10 years. In order to obtain credit for the work done on the Copper Island - Pomeroy, Beaver, Copper Bell property, a Statement of Work (SOW) is submitted and Assessment Report documenting the results of the work done on the property (report must also include an itemized statement of costs).

For mineral claims, the assessment work requirement is a 4 tier structure. Assessment work requirements are:

- $5.00 per hectare for anniversary years 1 and 2;
- $10.00 per hectare for anniversary years 3 and 4;
- $15.00 per hectare for anniversary years 5 and 6; and
- $20.00 per hectare for subsequent anniversary years.

Prior to initiating any physical work such as drilling, trenching, bulk sampling, camp construction, access upgrading or construction and geophysical surveys requiring line-cutting for electrical current contact points (induced polarization, IP) on a mineral property, a Notice of Work permit application must be filed with and approved by the Ministry of Energy and Mines

(FrontCounter). The digital filing of the Notice of Work initiates engagement and consultation with all other stakeholders including First Nations.

The property falls within the K'omoks First Nations land claims. There may be various First Nation Band claims involved also. These treaties have not yet been fully ratified, but for any physical work that would involve surface disturbance, the appropriate First Nations should be consulted. The First Nations could make claim to the surface rights, but sub-surface mineral rights would not be affected. The property is not affected by any registered Indian Reserves. TimberWest holds logging rights on most of the property but is not actively logging in the area.

4.4 Environmental Liabilities

There has not been any commercial scale mining or mineral processing related physical disturbances on the Copper Island property to date. Most of the roads built to access forestry cut blocks have been decommissioned and have grown over and are no longer passable. Roads built for logging activities are not the responsibility of the mineral tenure holder. The author is not aware of any environmental issues or liabilities related to historical exploration or mining activities that would have an impact on future exploration of the property.

5 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

5.1 Access

The Copper Island property is situated 10 kilometers north of Campbell River, B.C., in the Nanaimo Mining Division of southwest British Columbia, Canada. Access to Quadra Island is via 10 minute (3 kilometers) ferry from Campbell River to Quathiaski Cove. The property is 4 kilometers northwest of the Community of Heriot Bay, Quadra Island. There are numerous secondary forestry and logging roads from Heriot Bay that give good access to most parts of the property.

The property is located on Quadra Island 10 kilometers north from Campbell River, Vancouver Island, British Columbia and 4 kilometers northwest from Heriot Bay, Quadra Island. The centre of the property is approximately geographically 50° 07' 15" N, 125° 16' 15" W; or UTM Zone 10, 5,554,480 N, 337,645 E (NAD[83]). The claims are located on NTS map sheet 092K03 or BCGS sheet 092K.014. The property is easily accessible from Campbell River, B.C. by ferry and then paved and secondary roads. Numerous secondary forestry and logging roads from Heriot Bay give access to most parts of the property. Vehicle access is available year round except temporarily during the winter months after occasional heavier snowfalls.

5.2 Climate & Physiography

The area has undergone several periods of logging. Most of the timber on the property is second growth fir, some hemlock, cedar and with a scattering of alder and poplar. The timber on most of the property is still too immature for commercial logging in the near future. Tree planting on a small scale is being undertaken on parts of the property. Underbrush in the main areas of interest is negligible except for some salal. Underbrush in the main valleys and surrounding the small lakes and ponds can be heavier. Although parts of the property that are in the main valleys may have significant overburden cover, large parts of the current main known areas of interest have abundant rock exposure with insignificant overburden cover.

Logging and forestry roads exist on the property and provide a good network of vehicle access to most parts of the property. The old system of logging roads as shown on government maps and in previous property reports has been almost obliterated and overgrown from lack of use. The current roads are accessible most of the time year-round except during occasional heavier snow falls in winter. In general the winters are mild due to the low elevation and proximity to the ocean.

5.3 Local Resources

Resources are somewhat limited on Quadra Island, which is primarily a tourist and retirement center, but Campbell River is a city that can provide a wide variety of services and facilities that include international airports, health and emergency services, mechanical, equipment, lumber, transportation and retail stores.

5.4 Infrastructure

The property area is accessible via logging and forestry service roads. The nearest community is Heriot Bay, B.C., which is approximately 7 kilometres east-southeast of the property centre. If required, loading and handling industrial scale shipments of goods and mined materials can be handled by personnel of maritime vessels.

5.5 Physiography

The Copper Island-Pomeroy, Beaver, Copper Bell property is located in an area of well-defined mountains and intervening, u-shaped glacial valleys. Elevations on the property vary between 0 and 260 metres above mean sea level. The mountain sides are moderately steep with steeper sections found in the southern portion of the property near Copper Cliff. Bedrock exposure is greater than 30 percent on steep slopes near the ridge tops, but it is very limited at lower elevations in valleys. Overall, the topography (ridge tops) trend north to northwest.

6 History.

6.1 Historic Exploration and Development Work

Considerable previous work has been performed on the Pomeroy Group copper-silver bearing mineralization. The first recorded mining in the project area was in 1906- 1907, when high grade ores from the Copper Cliff deposit were mined from an adit in the cliff face and shipped to a smelter at Ladysmith B.C. This smelter has since closed. The next period of activity was between 1915 and 1919 when ores from the Pomeroy area were mined by the Valdez Copper Company and shipped to the smelter at Anyox B.C. Samples from the Senator claim in the Pomeroy area were tested for Radium in 1922. Testing was done on siliceous carbonaceous thin-bedded sediments with an electroscope. the instrument used to detect radioactivity at that time. No radioactivity was detected. In 1929 the Pomeroy area was acquired as the Hercules 1-10 Claims by the Hercules Consolidated Mining Smelting and Power Company. Samples collected by Gunning identified acid leachable vanadium which contain the highest V values in a black siliceous sediment, overlying a copper mineralized flow. In 1952-53, Dodge Copper Mines Limited carried out a detailed exploration program of trenching and diamond drilling. Dodge Copper Mines drilled 145 holes totaling 8800 feet on various deposits. The Quadra Mining Company acquired the property in 1968. In 2011, the Pomeroy Group of mineral claims were acquired by Copper Island Mines Ltd. A program of geochemical sampling was carried out and identified several zones of high grade copper located in the Pomeroy 1-4 mineralized zones, as well as new showings adjacent to the known occurrences.

The known ore deposits occur mainly on the surface and have bean drilled, trenched and sampled in by Prince Stewart Mines Ltd (Sheppard, 1974). Ore tonnage estimates have been made by previous operators (Note-estimates are non-compliant with NI 43-101 standards & guidelines)

In 1973 Prince Stewart Mines Ltd. optioned the properties from Quadra and Quadra Bell and carried out intensive work including 392 metres of diamond drilling. A report of the drilling of one vertical hole to 33.6 metres on the Bit1 claim encountered no visible sulphide mineralization and the remaining holes were recommended to be inclined. Results from the remaining holes are unknown. Prince Stewart estimated indicated reserves from several mineralized zones:

ZONE	TONS*	% COPPER
Pomeroy 1	12,300	3.55
Pomeroy 2 North	5,000	2.70
Pomeroy 2 South	25,000	2.11
Pomeroy 3	194,500	0.67
Pomeroy 4	10,500	2.69
Beaver 1	18,000	1.73

* *These reserves probably should be considered as inferred by current standards.*

In 1996 the property was acquired by Ms. Elisa Reyes as the Copper Bell, Copper Cliffs and VC claims. Reyes had Minestart Management Inc. evaluate the property based on property history, review of mineralization, mineralized zones and inferred reserves. Reyes also contracted a mine technologist to review the feasibility of acid leaching 3,000 tons of broken mineralized material extracted previously by Quadra and Quadra Bell. In 1997 the claims were forfeited.

In 2011, the claims were acquired by Copper Island Mines Ltd, and a program of geochemical sampling was carried out on the Pomeroy, Beaver and Colleen Zones. A significant portion of geochemical sampling returned >2% Cu from numerous new & historic copper-silver bearing mineral occurrences (Betmanis, 2012).

In 2020, Copper Island carried out geochemical sampling over the Pomeroy 2, 3 & 4 Zones. Results of rock sampling in 2020 are summarized as follows:

Sample ID	Easting NAD 83	Northing NAD 83	Elev (m)	Sample Type	Lithology
19CIR-1	337701	5554153	127	outcrop	amygdaloidal basalt
19CIR-2	337688	5554183	128	outcrop	amygdaloidal basalt
19CIR-3	337472	5554583	168	outcrop	amygdaloidal basalt
19CIR-4	338102	5553605	98	outcrop	amygdaloidal basalt

Sample ID	Alteration	Mineralization	Cu ppm	Ag ppm	As ppm
19CIR-1	quartz, chlorite, prehnite, calcite	chalcocite, malachite	76400	24	16
19CIR-2	quartz, chlorite, prehnite, calcite	chalcocite, malachite	66400	24.8	16
19CIR-3	quartz, chlorite, prehnite, calcite	chalcocite, malachite	59500	19.8	3
19CIR-4	quartz, chlorite, prehnite, calcite	chalcocite, malachite	56400	29.4	2

Sample ID	Pb ppm	Zn ppm	Fe %	S %	Ca %	P ppm	Mn ppm	V ppm	Cr ppm	Cu %
19CIR-1	3	59	6.81	1.79	1.62	530	923	354	112	7.64
19CIR-2	4	80	7.21	1.65	2.81	430	1120	344	159	6.64
19CIR-3	<2	80	9.15	1.28	1.44	560	1335	398	155	5.95
19CIR-4	11	102	9.8	1.18	1.81	580	1480	757	216	5.64

Each of the 4 rock chip samples were taken across a sample interval width of 30 cm (from outcrop). The results indicate that high-grade copper values (ranging from 5.64-7.64% Cu) with significant silver (19.8-29.4 g/t Ag) values were obtained from rock chip samples from the Pomeroy 2, 3, & 4 mineral zones. Vanadium content of up to 757 ppm V suggests that vanadium bearing minerals are present, and likely linked with increased Fe.

Soil sampling carried out in 2020 is described (with geochemically analysis) as follows:

Project	Sample ID	UTM E	UTM N	Depth	Colour	Cu ppm	Ag ppm	Zn ppm
CI Pomeroy 3, 4	20CIS-1	337600	5554050	25 cm	red-brown	95	0.3	47
CI Pomeroy 3, 4	20CIS-2	337650	5554050	25 cm	red-brown	56	<0.2	67
CI Pomeroy 3, 4	20CIS-3	337700	5554050	25 cm	red-brown	7870	2.1	82
CI Pomeroy 3, 4	20CIS-4	337750	5554050	25 cm	red-brown	1210	0.5	128
CI Pomeroy 3, 4	20CIS-5	337800	5554050	30 cm	red-brown	421	<0.2	48
CI Pomeroy 3, 4	20CIS-6	337600	5554100	25 cm	brown	108	<0.2	52
CI Pomeroy 3, 4	20CIS-7	337650	5554100	30 cm	brown	85	0.3	88
CI Pomeroy 3, 4	20CIS-8	337700	5554100	25 cm	brown	742	0.2	52
CI Pomeroy 3, 4	20CIS-9	337750	5554100	25 cm	red-brown	5100	1.3	147
CI Pomeroy 3, 4	20CIS-10	337800	5554100	30 cm	red-brown	203	<0.2	108
CI Pomeroy 3, 4	20CIS-11	337600	5554150	25 cm	brown	300	0.2	43
CI Pomeroy 3, 4	20CIS-12	337650	5554150	25 cm	brown	57	<0.2	93
CI Pomeroy 3, 4	20CIS-13	337700	5554150	25 cm	red-brown	4420	1.1	40
CI Pomeroy 3, 4	20CIS-14	337750	5554150	25 cm	red-brown	2770	0.4	38
CI Pomeroy 3, 4	20CIS-15	337800	5554150	30 cm	brown	426	<0.2	43
CI Pomeroy 3, 4	20CIS-16	337600	5554200	25 cm	red-brown	64	0.2	77
CI Pomeroy 3, 4	20CIS-17	337650	5554200	30 cm	red-brown	38	<0.2	87
CI Pomeroy 3, 4	20CIS-18	337700	5554200	25 cm	red-brown	9560	4.2	79
CI Pomeroy 3, 4	20CIS-19	337750	5554200	25 cm	red-brown	1010	0.4	74
CI Pomeroy 3, 4	20CIS-20	337800	5554200	30 cm	brown	573	0.2	73
CI Pomeroy 2	20CIS-21	337400	5554500	25 cm	red-brown	113	0.2	59
CI Pomeroy 2	20CIS-22	337450	5554500	25 cm	red-brown	247	0.4	97
CI Pomeroy 2	20CIS-23	337500	5554500	25 cm	red-brown	127	<0.2	62
CI Pomeroy 2	20CIS-24	337550	5554500	25 cm	red-brown	309	<0.2	77
CI Pomeroy 2	20CIS-25	337600	5554500	30 cm	red-brown	45	<0.2	45
CI Pomeroy 2	20CIS-26	337400	5554550	25 cm	brown	33	<0.2	35
CI Pomeroy 2	20CIS-27	337450	5554550	30 cm	red-brown	160	<0.2	101
CI Pomeroy 2	20CIS-28	337500	5554550	25 cm	brown	24	<0.2	23
CI Pomeroy 2	20CIS-29	337550	5554550	25 cm	brown	95	<0.2	85
CI Pomeroy 2	20CIS-30	337600	5554550	25 cm	brown	268	<0.2	78
CI Pomeroy 2	20CIS-31	337400	5554600	25 cm	red-brown	279	0.2	80
CI Pomeroy 2	20CIS-32	337450	5554600	25 cm	brown	45	<0.2	39
CI Pomeroy 2	20CIS-33	337500	5554600	30 cm	brown	127	0.2	29
CI Pomeroy 2	20CIS-34	337550	5554600	25 cm	brown	1080	0.5	90
CI Pomeroy 2	20CIS-35	337600	5554600	30 cm	red-brown	847	0.6	295
CI Beaver 1	20CIS-36	337650	5554600	25 cm	brown	80	<0.2	109
CI Beaver 1	20CIS-37	337950	5553500	25 cm	red-brown	1030	0.6	60
CI Beaver 1	20CIS-38	338000	5553500	25 cm	red-brown	93	0.2	79
CI Beaver 1	20CIS-39	338050	5553500	25 cm	red-brown	569	0.2	63
CI Beaver 1	20CIS-40	337950	5553550	30 cm	red-brown	811	0.3	88
CI Beaver 1	20CIS-41	338000	5553550	25 cm	red-brown	167	<0.2	59

Project	Sample ID	UTM E	UTM N	Depth	Colour	Cu ppm	Ag ppm	Zn ppm
CI Beaver 1	20CIS-42	338050	5553550	30 cm	brown	167	<0.2	38
CI Beaver 1	20CIS-43	338000	5553600	25 cm	brown	32	<0.2	50
CI Beaver 1	20CIS-44	338050	5553600	25 cm	brown	127	<0.2	67
CI Beaver 1	20CIS-45	338100	5553600	25 cm	red-brown	2670	0.6	37
CI Beaver 1	20CIS-46	338150	5553600	30 cm	red-brown	693	0.5	658
CI Beaver 1	20CIS-47	338000	5553650	25 cm	red-brown	36	0.2	79
CI Beaver 1	20CIS-48	338050	5553650	30 cm	red-brown	290	0.2	96
CI Beaver 1	20CIS-49	338100	5553650	25 cm	brown	86	<0.2	78
CI Beaver 1	20CIS-50	338150	5553650	25 cm	brown	279	<0.2	27

Project	Sample ID	Pb ppm	As ppm	P ppm	Mn ppm	Co ppm	Cr ppm	V ppm	% Fe	% Ca	% Ti
CI Pomeroy 3, 4	20CIS-1	5	6	440	558	16	40	306	5.95	0.84	0.54
CI Pomeroy 3, 4	20CIS-2	28	4	420	875	25	55	293	7.29	1.66	0.66
CI Pomeroy 3, 4	20CIS-3	12	36	800	1925	35	101	293	6.88	2.09	0.44
CI Pomeroy 3, 4	20CIS-4	27	6	700	3070	35	108	247	7.47	2.1	0.51
CI Pomeroy 3, 4	20CIS-5	36	7	560	1015	12	53	227	5.66	1	0.45
CI Pomeroy 3, 4	20CIS-6	11	6	450	570	12	29	186	4.03	0.8	0.34
CI Pomeroy 3, 4	20CIS-7	43	7	670	2660	27	56	182	5.08	1.7	0.4
CI Pomeroy 3, 4	20CIS-8	52	8	640	801	8	29	58	1.61	0.68	0.09
CI Pomeroy 3, 4	20CIS-9	40	18	840	6910	35	96	213	6.01	3.19	0.38
CI Pomeroy 3, 4	20CIS-10	16	3	650	1870	37	125	299	8.32	2.02	0.62
CI Pomeroy 3, 4	20CIS-11	17	5	380	898	17	33	132	3.69	0.73	0.3
CI Pomeroy 3, 4	20CIS-12	54	7	750	7090	28	37	171	4.97	1.03	0.34
CI Pomeroy 3, 4	20CIS-13	29	9	630	635	13	77	109	2.25	2.46	0.15
CI Pomeroy 3, 4	20CIS-14	7	7	480	595	14	32	156	3.71	0.98	0.28
CI Pomeroy 3, 4	20CIS-15	6	<2	7190	81	5	72	91	1.32	0.73	0.15
CI Pomeroy 3, 4	20CIS-16	50	9	1480	2590	33	40	164	5.48	0.81	0.43
CI Pomeroy 3, 4	20CIS-17	15	5	1050	1505	18	54	225	7.97	0.55	0.49
CI Pomeroy 3, 4	20CIS-18	7	15	570	1785	36	145	249	6.67	2.8	0.43
CI Pomeroy 3, 4	20CIS-19	7	7	610	772	25	59	444	8.51	0.91	0.71
CI Pomeroy 3, 4	20CIS-20	61	6	1150	915	19	89	167	6.53	1.01	0.33
CI Pomeroy 2	20CIS-21	3	2	410	410	12	37	127	4	0.68	0.34
CI Pomeroy 2	20CIS-22	14	<2	620	1130	26	86	309	8.58	1	0.6
CI Pomeroy 2	20CIS-23	46	10	490	1710	20	47	216	6.46	1.04	0.39
CI Pomeroy 2	20CIS-24	19	3	380	1315	41	31	159	5.44	0.4	0.37
CI Pomeroy 2	20CIS-25	8	3	380	386	11	36	221	6.26	1.26	0.36
CI Pomeroy 2	20CIS-26	20	3	240	857	10	26	125	3.28	0.38	0.28
CI Pomeroy 2	20CIS-27	11	2	610	1115	21	79	315	8.08	0.63	0.72
CI Pomeroy 2	20CIS-28	17	6	310	335	4	16	101	2.26	0.64	0.26
CI Pomeroy 2	20CIS-29	131	8	870	2140	22	16	75	2.68	0.81	0.14
CI Pomeroy 2	20CIS-30	54	6	910	5550	123	31	64	3.11	0.61	0.16
CI Pomeroy 2	20CIS-31	25	5	580	1375	106	34	93	4.56	0.37	0.27

CI Pomeroy 2	20CIS-32	44	8	390	577	6	27	151	4.15	1.17	0.35
CI Pomeroy 2	20CIS-33	60	7	860	125	3	25	56	1.06	0.72	0.1
CI Pomeroy 2	20CIS-34	58	6	760	3280	16	42	184	4.57	0.48	0.5
CI Pomeroy 2	20CIS-35	87	15	1220	13300	27	57	91	3.66	2.03	0.17
CI Beaver 1	20CIS-36	50	5	1220	3030	22	51	157	5.38	0.59	0.49
CI Beaver 1	20CIS-37	20	6	790	4200	55	47	115	4.11	0.91	0.23
CI Beaver 1	20CIS-38	27	6	550	1430	24	51	204	5.39	1.29	0.46
CI Beaver 1	20CIS-39	12	3	530	969	17	50	200	5.35	0.94	0.45
CI Beaver 1	20CIS-40	26	7	1340	1010	36	69	130	5.56	0.81	0.28
CI Beaver 1	20CIS-41	7	2	460	593	21	73	301	7.48	1.14	0.72
CI Beaver 1	20CIS-42	24	5	430	468	14	32	165	3.92	0.55	0.36
CI Beaver 1	20CIS-43	10	3	350	328	10	27	167	4.44	0.74	0.39
CI Beaver 1	20CIS-44	13	11	1890	414	11	41	119	4.17	0.37	0.31
CI Beaver 1	20CIS-45	24	8	1080	741	10	38	195	4.54	1.04	0.41
CI Beaver 1	20CIS-46	51	19	1780	17550	49	79	137	6.2	2.61	0.26
CI Beaver 1	20CIS-47	51	10	1290	7100	35	40	170	6.73	1.43	0.41
CI Beaver 1	20CIS-48	66	10	1190	7110	28	68	152	4.56	1.66	0.34
CI Beaver 1	20CIS-49	19	3	470	751	12	33	106	3.74	0.37	0.26
CI Beaver 1	20CIS-50	11	4	340	229	6	25	97	2.87	0.34	0.18
Project	**Sample ID**	**Pb ppm**	**As ppm**	**P ppm**	**Mn ppm**	**Co ppm**	**Cr ppm**	**V ppm**	**% Fe**	**% Ca**	**% Ti**

Soil sample results (from 2020) indicate a strong positive copper in soil anomaly located along a N-S trend on the Pomeroy 3, 4 zone between 337,675 E and 337,775 E. The anomalous copper in soil anomaly is shown in Fig 9, and occurs between 5,554,025 N and 5,554,225 N (note- the anomaly is open to the north and south. The Pomeroy 2 (Copper Flats) zone and Beaver 1 analysis results show strong positive copper in soil anomalies however they are more erratically distributed. Silver in soil values closely follow anomalous copper in soil values. There appears to be peripheral manganese in soil anomalies in close proximity to the copper zones and may indicate a sea-floor spreading (rifting) environment of deposition. The high manganese content does not correlate with high Cu-Ag values but the close proximity of high Mn, and localized concentrations of vanadium (up to 444 ppm V) in soil suggests that pyrolusite (MnO_2) and vanadium bearing minerals may be present in the highly differentiated, amygdaloidal basalts, and inter-layered (thin-bedded) siliceous, carbonaceous clastic sediments (submarine black smoker environment of deposition)..

7 Geological Setting and Mineralization

7.1 Regional Geology

Quadra Island is underlain by Triassic & Jurassic volcanic, sedimentary & intrusive rocks. The predominant rocks are Triassic Karmutsen Formation volcanics, Quatsino formation limestones and Island intrusives of Middle Jurassic age, part of the Coast Intrusive complex. The southern part of the island is covered by Quaternary glacial debris. Glacio-alluvial deposits cover low-lying contacts and fault zones. The Karmutsen and Quatsino Formations host numerous mineral deposits on Vancouver Island such as magnetite (Fe_3O_4), gold-silver, and copper-lead-zinc-silver-gold deposits such as Buttle Lake. Porphyry type copper, molybdenum-rhenium deposits of Island Copper at the north end of Vancouver Island, and the iron, copper, and high-calcium limestone deposits on Texada Island. The claim area is underlain by Karmutsen volcanics, which consist chiefly of amygdaloidal, fine to medium-grained, heavily fractured basaltic lava.

7.2 Structure

Steep to moderate dipping fracturing and faulting are evident in the basaltic volcanic host rocks. Northwest-trending structures are most common with north and east trending structures being subordinate. Quartz-calcite veins and veinlets trend in multiple directions.

7.3 Property Geology and Mineral Occurrences

The Pomeroy 3, 4 Zone occurs over a strike length of approximately 600 feet (183 meters) of a northwest to north trending formation of volcanic flows. Several parallel zones have been identified (e.g. Copper Valley, Butte, Copper Bell, Colleen, Vanadium & Ingersoll). The Pomeroy zones have been extensively trenched and sampled by large open cuts that exposed large areas of low-grade copper mineralization in a calcite filled amygdules and veinlet stockwork that is evident throughout the property. The other mineralized zones consist of increased quartz, calcite veining, and copper sulphides in 1-10 meter wide altered and fractured zone traced intermittently for approximately 20-200 meters on surface.

The following list describes geology & mineralization of nine Minfile occurrences located within Copper Island mineral claims (note- Appendix E lists all 13 Minfile occurrences):

POMEROY 1: 336900E, 5554850N
Area is highly disturbed from pervious workings with blasted material covering up most of the bedrock. There is a 4m long x 3m wide x 3m deep pit. Neighboring outcrop is light-dark green fgr mafic with angular clastic fragments of quartz, epidote, chlorite up to 1cm in a fine grained matrix. There are amygdules present however the majority are angular. This indicates a fault zone breccia or possible pyroclastic flow west of the main pit, in the forest are a series of small trenches (3m x 2m) and blast sites with visible blebs of chalcocite up to 2cm. Malachite staining seen throughout blasted rock. Area of bedrock open cuts with observed mineralization is 25m x 15m. Historic estimates for Pomeroy 1 mineral zone are 16,500 short tons @3.67% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

East of Pomeroy 1 there is a normal fault trending 315 (Fig 3) with the hanging wall on the NE side with a potential vertical displacement of 10m. Mineralization is observed along an E-W trending ridge structure up to 200m long. The structure has potential to be mineralized 200m long x 25m wide x 5m thick. The host rock is a medium green fine grained mafic flow with amygdules up to 5mm. Rock is weathered red-brown and has crackled brecciated appearance. Malachite staining is visible on weathered surface. The dominant rock type is green fine grained basalt with quartz & black amygdules. Coarse disseminated blebs of chalcocite up to 3cm noted.

POMEROY 2: 337540E, 5554480N

North Zone:

Host rock is a fine grained dark green vesicular mafic with 1-3mm amygdules filled with qtz, epidote and chalcocite stained with malachite. Mineralization in pit extends approximately 5m wide x15m long x2m deep. Flows at pit have a shallow dip of 10-15 degrees to south. Rock has crackled weathered appearance, minor brecciation.
Sheppard, 1974: PROVEN: 5,000 short tons @ 2.70% Cu
INDICATED: 17,000 short tons @ 2.70% Cu

POMEROY 3: 337750E, 5554300N

Pomeroy 3 is a series of discontinuous mineralized outcrops, trenches and blast pits along the western edge of a flow structure, east of Pomeroy 2 and 4. Mineralization is also seen in trenches in the low lying area between Pomeroy 2 and Pomeroy 3, which is interpreted as a N-S fault extending southward between Pomeroy 3 and 4. Outcrops are medium-dark green fine-grained mafic dominated by quartz amygdules up to 1cm, black amygdules also present. Moderate silicification with some quartz veining. At Pomeroy 3 north, there is an intensely brecciated outcrop, rock is soft and friable, malachite and chalcocite occur as disseminations and fracture fillings. Clasts are angular-subangular and vary from 1-10cm. Mineralization is dominant in the matrix but also coating the clasts. This feature supports that there is a N-S trending fault potentially being the control on mineralization of Pomeroy 2, 3 and 4. Above the mafic, silicified breccia on top of the fault structure, is chalcocite, chalcopyrite and malachite mineralisation. Apparent dip of the Pomeroy 3 mineralized flow is 20 degrees south. From mineralized outcrops and neighboring mineralized pits Pomeroy 3 has a potential thickness of 7 meters.

POMEROY 4: 337650E, 5554150N

Pomeroy 4 is a 200m long x 100m wide structure dipping approximately 15-20o to the south. Mineralization is most apparent on the eastern flank of the structure where there is series of historic pits that extend N-S approximately 70 meters long. The most northerly pit is the site where a historic bulk sample was taken for the Mill. The outcrop contains near vertical fractures that are filled with Chalcocite minor native copper and quartz. Chaotic quartz-carbonate veins and epidote stringers throughout outcrop. Chalcocite is seen disseminated throughout the rock, most noticeably next to veins. Rock has dull grey look, friable, weathered crackled appearance. The southern pit is much larger, 20m long x 15m wide x 10m+ high. Pit has disseminated chalcocite blebs throughout a dark green mafic with small <1mm black amygdules and larger <1cm quartz amygdules. Across the structure along strike is a series of pits and outcrops with weathered, friable malachite stained rock (Photo 18). The top of Pomeroy 4 structure is covered by pods and ridges of dark grey coarse grained mafic (cap flow?).

Pomeroy 3+4
Sheppard, 1974: PROVEN: 972,400 short tons @ 1.22% Cu
INDICATED: 472,000 short tons @ 1.62% Cu

POMEROY 5: 337620E, 5554490N
Pomeroy 5 is east of Pomeroy 2 across the new logging road on the adjacent structure. The mineralized area is 10m long x 2m wide x 2m high. The surrounding rock is a fine grained dark green blocky mafic, whereas at the showing the rock is crackled and weathered as seen in other mineralized zones. Continuous mineralization is not observed, however a NW trending fault contained malachite staining and was traced SE to a series of small mineralized prospects with crackled weathered outcrops with malachite staining. Chalcocite mineralization is hosted about 10% of the small black 1mm amygdules. The rest of the amygdules are quartz.
Mineral Potential: 100m x 100m x 2m x 2.66 ton/m3 = 53,200 metric tons @ 1.00% Cu

Beaver 1: 338100E, 5553560N
Turtle back structure 100m long (N-S) x 30m wide (E-W). Dark green-grey fine grained mafic with large amounts of Mn staining and high Fe content, highly magnetic on top of ridge. Thin 5mm quartz and epidote veins and stringers throughout outcrop. Three trenches on top of central structure,2 meters wide 2 meters deep. Chalcocite mineralization is visible at the bottom of trenches indicating thickness of 2m+. Malachite staining throughout. Mineralization observed at north end of structure, could entire structure potentially be mineralized. The mineral zone is estimated to contain 19,375 short tons @ 1.74% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

Hall: 336915E, 5555595N
Small blasted pits 3m x 10m on top of a small structure 60m x 30m next to logging road. Mineralization is seen locally within the blasted pits as chalcocite, malachite and azurite. Rock is a dark green fine grained mafic with quartz, chlorite, epidote, chalcocite amygdules 1-3mm in size. Minor Fe and Mn staining. No visible mineralization on neighboring structures which host dark green-grey coarse grained dense mafic flows. West of Hall showing outcrop with 30cm thick quartz veins cutting though mafic flows with epidote stringers.
Sheppard, 1974: PROVEN: 5,000 short tons @ 3.45% Cu
INDICATED: 50,000 short tons @ 2.40% Cu Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

Copper Bell 1: 338290E, 5555028N
Series of small blasts and small pits in an area 15m x 15m. One blast trench found 6m long x 2m wide x 2m deep. Mineralization in this area if found within chaotic quartz-carbonate veins and disseminations in the wallrock proximal to veining. Veins area up to 10cm thick with mafic inclusions up to 5cm. Chalcocite and bornite are the dominant form of copper mineralization within the veins and along selvedges. Chalcocite is seen disseminated in the mafic host rock

especially noticeable next to veining. Hostrock is a medium-dark green fine grained mafic that has crackled, brecciated, weathered appearance.

Copper Bell 2: 337920E, 5555150N
Structure is 230m long x 50m wide x 3m thick. Light-medium green amygdaloidal fine grained andesite? It has chl, qtz, and black amygdules. Vuggy quartz clasts and amygdules. 5-10cm quartz veins with visible bornite and malachite. Veins are both vuggy and comb with comb crystal up to 2-2.5cm in length. Epidote stringers throughout. Host rock is moderately silicified giving it lighter appearance. Localized areas have crackled brecciated appearance.
Copper Bell 1 & 2: An estimate of the combined Copper Bell 1 & 2 mineral zones are 112,000 short tons @ 2.55% Cu (Sheppard, 1974). Note that historic estimates are not compliant with NI 43-101 and are not to be relied upon.

8 Deposit Types

Copper Island property Cu-Ag bearing mineral showings on the property have been classified as a volcanic redbed copper (silver) deposit types. The Pomeroy Zones are a primary target for these redbed type deposits. In general, the Cu-Ag deposits tend to be crudely stratified along lithological basaltic flow contacts, forming clusters (lenses) along NW to N (minor E) trending fracture/fault zones along S to SW dipping basalt flow contacts. Volcanic redbed Cu-Ag occurrences are also known as basaltic Cu, volcanic-hosted copper, and copper mantos (Lefebvre, 1996). Examples in British Columbia include Sustut Copper (094D063), Shamrock (092HNE092), NH (093L082), North Star (094D032). Outside of BC examples of volcanic redbed Cu includes White River (Yukon, Canada), 47 Zone and June, Coppermine River area (Northwest Territories, Canada) Mountain Grill and Radovan (Alaska, USA), Calumet-Hecla and Kearsarga, Keweenaw Peninsula (Michigan, USA), Mantos Blancos, Ivan and Altamira (Chile).

Mineralogy of volcanic redbed Cu deposits includes chalcocite, bornite and/or native copper occur in mafic to felsic volcanic flows, tuff and breccia and related sedimentary rocks as disseminations, veins and infilling amygdales, fractures and flowtop breccias. Some deposits are tabular, strata bound zones, while others are controlled by structures and crosscut stratigraphy.

These deposits occur in intracontinental rift tectonic settings with subaerial flood basalt sequences and near plate margins with island-arc and continental-arc volcanics. Amygdaloidal basaltic lavas, breccias and coarse volcaniclastic beds with associated volcanic tuffs, siltstone, sandstone and conglomerate are the most common host rocks. The volcanics may cover the spectrum from basalt to rhyolite composition, typically it is the mafic volcanics that have widespread elevated background values of copper due to the presence of native copper or chalcocite in amygdales, flow breccias or minor fractures. Many volcanic redbed Cu deposits are tabular lenses from a few to several tens of metres thick which are roughly concordant with the host strata over several hundred metres. Other deposits are strongly influenced by structural controls and crosscut the stratigraphy as veins, veinlets, fault breccias and disseminated zones.

Open spaces may be amygdales, cavities in flowtop breccias or fractures. Mineralization is commonly fine-grained, although spectacular examples of copper "nuggets" are known (Lefebvre, 1996).

Mineralogy of volcanic redbed Cu deposits are characterized by a suite of minerals including chalcocite, bornite, native copper, and digenite, with lesser amounts of djurleite, chalcopyrite, covellite, native silver and greenockite in a gangue of hematite, magnetite, calcite, quartz, epidote, chlorite and zeolite minerals. Iron sulphides, including pyrite, typically peripheral to the ore. Some deposits are zoned from chalcocite through bornite and chalcopyite to fringing pyrite. Copper-arsenic minerals, such as domeykite, algodonite and whitneyite, occur in fissure veins in the Keewenaw Peninsula. Deposits appear to be confined to subaerial to shallow-marine volcanic sequences commonly with intercalated redbeds. Geochemically, volcanic redbed Cu deposits produce a very specific geochemical signature for Cu and usually Ag. Lithogeochemical and stream sediment samples may return high values of Cu and Ag, typically high Cu/Zn ratios and low gold values. Geophysical induced polarization (IP) surveys can be effectively used to delineate disseminated sulphide mineralization.

Typical grade and tonnage of volcanic redbed Cu deposits range in size from hundreds of thousands to hundreds of millions of tonnes grading from less than 1% Cu to more than 4% Cu. Silver values are only reported for some deposits and vary between 6 and 80 g/t Ag. Sustut (located approximately 250 km NW of Prince George, BC) has been estimated to contain 43.5 Mt grading 0.82% Cu. The Calumet conglomerate (Hecla and Kearsarga, Keweenaw Peninsula, Michigan, USA) produced 72.4 Mt grading 2.64% Cu. Only a few deposits have been high enough grade to support underground mines and the majority of occurrences are too small to be economic as open pit operations. The Keweenaw Peninsula deposits in Michigan produced 5 Mt of copper between 1845 and 1968. Currently, operating mines in Chile are producing significant copper from Mantos Blancos, Ivan and Altamira volcanic redbed Cu deposits (Lefebure, 1996).

9 Exploration (SGH 50 soil samples & Cu sequential leach geochemical 4 rock chip samples)

Work carried out in 2022 consisted of SGH soil sampling and rock chip samples covering the Pomeroy 2, 3, & 4 mineral zones (similar to 2020 soil sampling which covered the Pomeroy 2, 3, & 4 and Beaver zones). The geochemical surveys focused on areas that returned relatively high copper and silver values from previous work. Soil samples were taken in a 50 m spacing grid pattern using Garmin 60Cx GPS receiver for survey control. Using a tree planting shovel and garden trowel (dug with care to provide minimal damage to A horizon vegetation), approximately 0.1-0.5 kilograms of soil from B horizon (identified by colour/texture change at 25 cm depth), was placed in brown kraft sample bags along with a numbered sample tag identification, and described. Sample bags were labelled with black felt markers, and flagged at soil sample locations. Samples were securely shipped to Actlabs, Ancaster, ON for Prep drying 60 degrees C, sieving 80 mesh prior to SGH hydrocarbon ultra-trace level geochemical analysis (details, methods & procedures are described in Appendix A, Geochemical Analysis & Methods). The SGH sampling analyzes hydrocarbon chemistry to identify 'deep-sourced' metallic concentrations by measuring compounds in the C5-C17 range (over 160 hydrocarbon compounds down to low parts per trillion), having the advantage of delineating mineral targets through thick layers of cover and overburden. The results of SGH sampling identified a 'Rabbit-Ear Anomaly' (337,425E to 337,675 E and 5,554,225 N to 5,554,275 N) roughly covering a 250 X 50 meter area in the area of the Pomeroy 3 & 4 zones. A subjective 4.0 out of 6.0 confidence rating is given to the Rabbit-Ear shaped SGH anomaly (Appendix A A22-02196 Actlabs SGH Report). This SGH anomaly zone corresponds to Pomeroy 3 & 4 zones that are characterized by sheared and fractured sulphide and carbonate oxide mineralization. Previous soil sample geochemistry in 2020 identified highest Cu-Ag soil anomalies in the area southeast of the SGH Rabbit-Ear anomaly. A description of SGH soil samples taken in 2022 are described as follows:

ID number	northing UTM	easting UTM	colour	depth cm	texture
101	5554050	337700	red-brown	20	silt-sand, trace clay
102	5554050	337750	red-brown	20	silt-sand, trace clay
103	5554050	337800	red-brown	20	silt-sand, trace clay
104	5554050	337850	red-brown	20	silt-sand, trace clay
105	5554100	337700	red-brown	20	silt-sand, trace clay
106	5554100	337750	red-brown	20	silt-sand, trace clay
107	5554100	337800	red-brown	20	silt-sand, trace clay
108	5554100	337850	red-brown	20	silt-sand, trace clay
109	5554150	337550	red-brown	20	silt-sand, trace clay
110	5554150	337600	red-brown	20	silt-sand, trace clay
111	5554150	337650	red-brown	20	silt-sand, trace clay
112	5554150	337700	red-brown	20	silt-sand, trace clay
113	5554150	337750	red-brown	20	silt-sand, trace clay
114	5554200	337500	red-brown	20	silt-sand, trace clay
115	5554200	337550	red-brown	20	silt-sand, trace clay
116	5554200	337600	red-brown	20	silt-sand, trace clay
117	5554200	337650	red-brown	20	silt-sand, trace clay
118	5554200	337700	red-brown	20	silt-sand, trace clay
119	5554250	337450	red-brown	20	silt-sand, trace clay
120	5554250	337500	red-brown	20	silt-sand, trace clay
121	5554250	337550	red-brown	20	silt-sand, trace clay
122	5554250	337600	red-brown	20	silt-sand, trace clay
123	5554250	337650	red-brown	20	silt-sand, trace clay
124	5554300	337350	brown	20	silt-sand, trace clay
125	5554300	337400	brown	20	silt-sand, trace clay
126	5554300	337450	brown	20	silt-sand, trace clay
127	5554300	337500	red-brown	20	silt-sand, trace clay
128	5554300	337550	red-brown	20	silt-sand, trace clay
129	5554350	337300	brown	20	silt-sand, trace clay
130	5554350	337350	brown	20	silt-sand, trace clay
131	5554350	337400	brown	20	silt-sand, trace clay
132	5554350	337450	red-brown	20	silt-sand, trace clay
133	5554350	337500	red-brown	20	silt-sand, trace clay

134	5554400	337500	brown	20	silt-sand, trace clay
135	5553450	337500	brown	20	silt-sand, trace clay
136	5553450	337550	brown	20	silt-sand, trace clay
137	5553450	337600	red-brown	20	silt-sand, trace clay
138	5553450	337650	red-brown	20	silt-sand, trace clay
139	5553450	337700	red-brown	20	silt-sand, trace clay
140	5553500	337500	red-brown	20	silt-sand, trace clay
141	5553500	337550	red-brown	20	silt-sand, trace clay
142	5553500	337600	red-brown	20	silt-sand, trace clay
143	5553500	337650	brown	20	silt-sand, trace clay
144	5553500	337700	brown	20	silt-sand, trace clay
145	5553550	337450	red-brown	20	silt-sand, trace clay
146	5553550	337500	red-brown	20	silt-sand, trace clay
147	5553550	337550	red-brown	20	silt-sand, trace clay
148	5553550	337600	brown	20	silt-sand, trace clay
149	5553550	337650	brown	20	silt-sand, trace clay
150	5553550	337700	brown	20	silt-sand, trace clay
ID No	**Northing**	**Easting**	**Colour**	**Depth cm**	**Texture**

SGH follow up target for drilling in the area described as follows:

Pomeroy 3 & 4 zones SGH (2022) 'Rabbit- Ear Anomaly' (337,425E to 337,675 E and 5,554,225 N to 5,554,275 N) roughly covering a 250 X 50 meter area.

Previous soil sample geochemistry in 2020 identified highest Cu-Ag soil anomalies in the area southeast of the SGH Rabbit-Ear anomaly. 2020 soil sample Cu-Ag anomalies, indicate follow up work (drilling/trenching) in the area described as follows:

Pomeroy 3 zone soil sample survey (2020) Cu in soil anomaly >1,000 ppm (337,675E to 337,775 E and 5,553,025 N to 5,553,225 N) roughly covering a 100 X 200 meter area. Also; **Pomeroy 2 zone** (2020) Cu in soil anomaly >845 ppm (337,525E to 337,625 E and 5,554,575 N to 5,554,625 N) roughly covering a 100 X 50 meter area.

There has been considerable drilling in the Pomeroy 3, 4 area with shallow drill holes, and several thousand tonnes of 1-3% Cu has been outlined in 1-6 meter wide zones. Plotted drill holes indicate 2 mineralized zones, an upper zone dipping 20-25 degrees into hillside (north dip), and a lower zone dipping 10 degrees into hillside (north dip). The upper & lower zones are separated by about 18 meters of altered (calcite, quartz, chlorite, actinolite, prehnite), highly amygdaloidal basalt. The mineralogy of copper mineralization consists mainly of chalcocite with minor malachite-azurite, chalcopyrite and native copper. This mineralogy suggests the ore has a portion of copper oxide (carbonate oxides such as malachite, azurite, and minor cuprite), and copper sulphide (chalcocite, minor chalcopyrite, trace bornite), and minor native copper as residual. This 'high oxide/residual Cu' is the principal target that is shown in Block D-1, 2, & 3

(Pomeroy 4), and Block C & B (Pomeroy 3), based on DDH data from Dodge Copper Mines Ltd 1953 (source: Property File, Prince Stewart Mines Ltd, Sheppard, 1972). The 1953 drilling covers an area of 200 X 70 meters, elongated east-west, and this area coincides with the SGH hydrocarbon soil geochemical 'Rabbit- Ear Anomaly' (337,425E to 337,675 E and 5,553,225 N to 5,553,275 N).

The 1953 drilling also confirms steeper dipping mineralization along fracture/fault zones with an apparent N-S trend. The 2022 SGH anomaly correlates with shallow dipping mineralization in highly amygdaloidal basalt with moderate to intense alteration (calcite-prehnite-quartz-chlorite). The 2020 soil Cu-Ag in soil geochemical anomalies correlate with steeper dipping mineral zones. A combination of steep and shallow dipping mineral zones (infilling fracture/fault structures) occur in altered basaltic host rock. It is envisioned that sea-floor spreading rift tectonics led to complex submarine, and oxidized flow-top lava flows with fractured and faulted related infill Cu-Ag bearing mineralization.

The rock chip sampling done in 2022 consisted of sequential leach for oxide, sulphide and residual geochemical analysis. A total of 4 rock samples, ranging from 1.07-1.77 kilograms in weight, of acorn sized rock chips were taken with rock hammer and moil, and placed in marked poly bags and shipped to ALS Chemex Labs Ltd, North Vancouver, BC for Prep-31 & Cu-PKG06LI sequential leach for oxide, sulphide and residual geochemical analysis, (Appendix A). Location was aided by maps from www.Mapplace and Google Earth. Locations were marked by waypoints generated by Garmin 60Cx GPS receiver and considered accurate to within 3-5 meter accuracy for northing and easting (elevations are considered estimates plus or minus 20 meters, and can not be relied upon).
A description of rock chip samples (2022) are summarized (Analysis certificate VA22039722):

ID No	Easting	Northing	Elev (m)	Sample Type	Lithology	Alteration
22CIR-1	337698	5554192	126	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-2	337683	5554133	130	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-3	337545	5554456	170	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-4	337690	5554159	128	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite

ID No	Mineralization	Zone Name	strike	dip	CuT-SEQ06 Total Cu %
22CIR-1	chalcocite, malachite, native Cu	Pomeroy 3	160	77 W	5.56
22CIR-2	chalcocite, malachite, chalcopyrite	Pomeroy 3	166	70 W	2.23
22CIR-3	chalcocite, malachite, bornite, chalcopyrite	Pomeroy 2	115	88 N	4.99
22CIR-4	chalcocite, malachite, azurite	Pomeroy 3	163	75 W	4.29

ID No	AA06s sulphuric % Cu	% oxide	AA16s cyanide % Cu	% sulphide	AA62s residual % Cu	% residual
22CIR-1	2.18	39.2	1.22	21.9	2.16	38.8
22CIR-2	1.21	54.3	0.97	43.5	0.05	0.04
22CIR-3	1.45	29.1	3.45	69.1	0.09	0.02
22CIR-4	2.11	49.2	1.49	34.7	0.69	0.16

Rock samples 22CIR-1, 2, & 4 were taken from the east part of the **Pomeroy 3** zone contains an average of:

47.6% oxide Cu,
33.4% sulphide Cu, &
13% residual Cu (native copper).
Rock sample 22CIR-3 was taken from the north-central part of the **Pomeroy 2** zone and this rock sample contains an average of:
29.1% oxide Cu,
69.1% sulphide Cu, &
0.02% residual Cu (native copper).
The Pomeroy 3 rock samples contain relatively higher oxide (malachite/azurite/cuprite) and residual type copper (native copper) mineralization. The Pomeroy 2 rock sample contains relatively high sulphide (chalcocite, chalcopyrite), and low oxide and residual type copper mineralization.

10 Drilling

Core drilling has been done on the Copper Island - Pomeroy, Beaver, Copper Bell property and this work is described in the History section of this report. Drill logs from drilling in the 1970's are not available in the public record.

11 Sample Preparation, Analyses, & Security

Sample preparation is described in Appendix B, and geochemical analysis is shown in Appendix A. The samples were transported in secure conditions and were not tampered with.

12 Data Verification

Quality Control for each sample analyzed is listed in Appendix A geochemical analysis certificates.

13 Mineral Processing and Metallurgical Testing

Obtaining bulk samples by excavating surface mineralization from Pomeroy mineralization is relatively easy because of good access, and relatively shallow dipping mineralization.

14 Mineral Resource Estimates

Not applicable.

15 Mineral Reserve Estimates

Not applicable.

16 Adjacent Properties

The area 2-12 km north of the subject property contains an assortment of Cu-Ag-Au-Zn(W) bearing vein, volcanic redbed Cu, skarn and manto deposit types. Notable Cu-Ag-Au-Zn(W) bearing mineral occurrences include Lucky Jim, Contact, Nat, WFP, Copper Road, Madison, Great Gold, Rebecca, Pelican, Plato, and Trilby. Of all the adjacent property mineral occurrences, only Copper Road is a volcanic redbed Cu (chalcocite, malachite, chalcopyrite) deposit type. All other adjacent properties (besides Copper Road) are classified as Cu-Ag vein, Cu skarn, and polymetallic vein deposit types.

17 Relevant Data

The exploration & development work required to develop the resources of the Pomeroy and adjacent zones within the mineral titles can be done without conflicting with recreational trail use of the area.

18 Interpretations and Conclusions

Soil sample results from 2020 fieldwork indicate a strong positive copper in soil anomaly located along a N-S trend on the Pomeroy 3, 4 zone between 337,675 E and 337,775 E. The anomalous copper in soil anomaly is shown in Fig 9, and occurs between 5,554,025 N and 5,554,225 N (note- the anomaly is open to the north and south. The Pomeroy 2 (Copper Flats) zone and Beaver 1 analysis results show strong positive copper in soil anomalies however they are more erratically distributed. Silver in soil values closely follow anomalous copper in soil values. There appears to be peripheral manganese in soil anomalies in close proximity to the copper zones and may indicate a sea-floor spreading (rifting) environment of deposition. The high manganese content does not correlate with high Cu-Ag values but the close proximity of high Mn, and localized concentrations of vanadium (up to 444 ppm V) in soil suggests that pyrolusite (MnO_2) and vanadium bearing minerals may be present in the highly differentiated, amygdaloidal basalts, and inter-layered (thin-bedded) siliceous, carbonaceous clastic sediments.

The Pomeroy 3 rock samples contain relatively higher oxide (malachite/azurite/cuprite) and residual type copper (native copper) mineralization. The Pomeroy 2 rock sample contains relatively high sulphide (chalcocite, chalcopyrite), and low oxide and residual type copper mineralization. The well-defined SGH Rabbits Ear Anomaly correlates with the amygdaloidal altered basalt in the Pomeroy 3, 4 zone rock samples (ID 22CIR-1, 2, & 4). The SGH anomaly correlates with relatively higher oxide and residual copper mineralization, with increased quartz-carbonate-chlorite-prehnite alteration.

19 Recommendations

Core drilling of the SGH anomaly (Pomeroy 3, 4), is recommended. Also, historical data should be converted to digital format and plotted on a common GIS base showing results of historic surveying and drilling/trenching. Digitizing will assist in identifying targets for follow-up work. In order to assess the economic potential of the property, IP geophysics is recommended on the Pomeroy, Beaver, Colleen, Copper Valley, Copper Valley, Butte and Doe Zones to test for chargeability (disseminated sulphide) mineralization, and resistivity (silicification). Based on results of geophysics, additional follow-up drilling, trenching, & bulk sample testing (beyond Pomeroy 3,4 zone), may be recommended. Based on results of geophysics, follow-up drilling, trenching & bulk sample testing may be recommended.

20 References

Betmanis, A, 2012, Geochemical Report on Copper Island Mines Ltd (Pomeroy) Property, MEMPR assessment report AR # 33,093

Ford, G.M., 1992, Quadra Copper Project, Photo Linear Analysis, for Mintek Res Ltd, Assessment Report 22,246.

Geiger, K.W., 2003, Geological Overview Report, Copper Cliff Group Property, for Laird, J.W, Assessment Report 27,346.

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Lefebure, D.V. and Church, B.N. (1996): Volcanic Redbed Cu, in Selected British Columbia Mineral Deposit Profiles, Volume 1 - Metallic Deposits, Lefebure, D.V. and Hõy, T, Editors, British Columbia Ministry of Employment and Investment, Open File 1996-13, pages 5-7.

McManus, M (2012), Geological Mapping Report Copper Island Property Pomeroy 1-5, Beaver, Copper Bell Deposits Quadra Island, B.C. Nanaimo Mining District, for Overland Resources.

Pierce, G., 2011, Project Review, for Copper Island Mines Ltd.

Schuss, M. 1989, Prospecting Report of Copper Cliff, Ran 1-3 Claims, for Heyman, D, Assessment Report 1,989.

Sheppard, E.P., 1974, Geological Report on the Beaver Dam 1 & 2, Colleen 1 & 2 Claims, for Quadra Mining Company Ltd, Assessment Report 5,076.

Skoda, E., 1997, Report on Copper Cliff Property, for Reyes, E., Assessment Report 24,999.

Slim, B.A, 1997, Copper Cliffs, Project Review, for Reyes, E., Assessment Report 24,999.

CERTIFICATE AND DATE

I, Andris Kikauka, of 4199 Highway, Powell River, BC am a self-employed professional geoscientist. I hereby certify that:

1. I am a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980.

2. I am a Fellow in good standing with the Geological Association of Canada.

3. I am registered in the Province of British Columbia as a Professional Geoscientist.

4. I have practiced my profession for forty years in precious and base metal exploration in the Cordillera of Western Canada, U.S.A., Mexico, Central America, and South America, as well as for three years in uranium exploration in the Canadian Shield.

5. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence on the subject property during which time a technical evaluation consisting of rock and soil sampling, carried out in February, 2022.

6. I have no interest in the Copper Island mineral claims. The recommendations in this report are for the purpose of describing future exploration work, and cannot be used for the purpose of public financing.

7. I am not aware of any material fact or material change with respect to the subject matter of this Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

8. This technical work report supports requirements of BCEMPR for Exploration and Development Work/Expiry Date Change.

Andris Kikauka, P. Geo.,

April 6, 2022

ITEMIZED COST STATEMENT-

Copper Island (Pomeroy, Beaver, Colleen, Copper Bell, Copper Cliff, Doe) MINERAL TENURES

808082

844515

848551

848662

848942

848943

848944

848946

848947

FIELDWORK PERFORMED FEBRUARY 5-9, 2022,

WORK PERFORMED ON MINERAL TENURE 848551

NANAIMO MINING DIVISION, NTS 92K 3W (TRIM 092K 014)

FIELD CREW:

A Kikauka (Geologist) 5 days (surveying, mapping, sampling)	**$ 3,150.00**

FIELD COSTS:

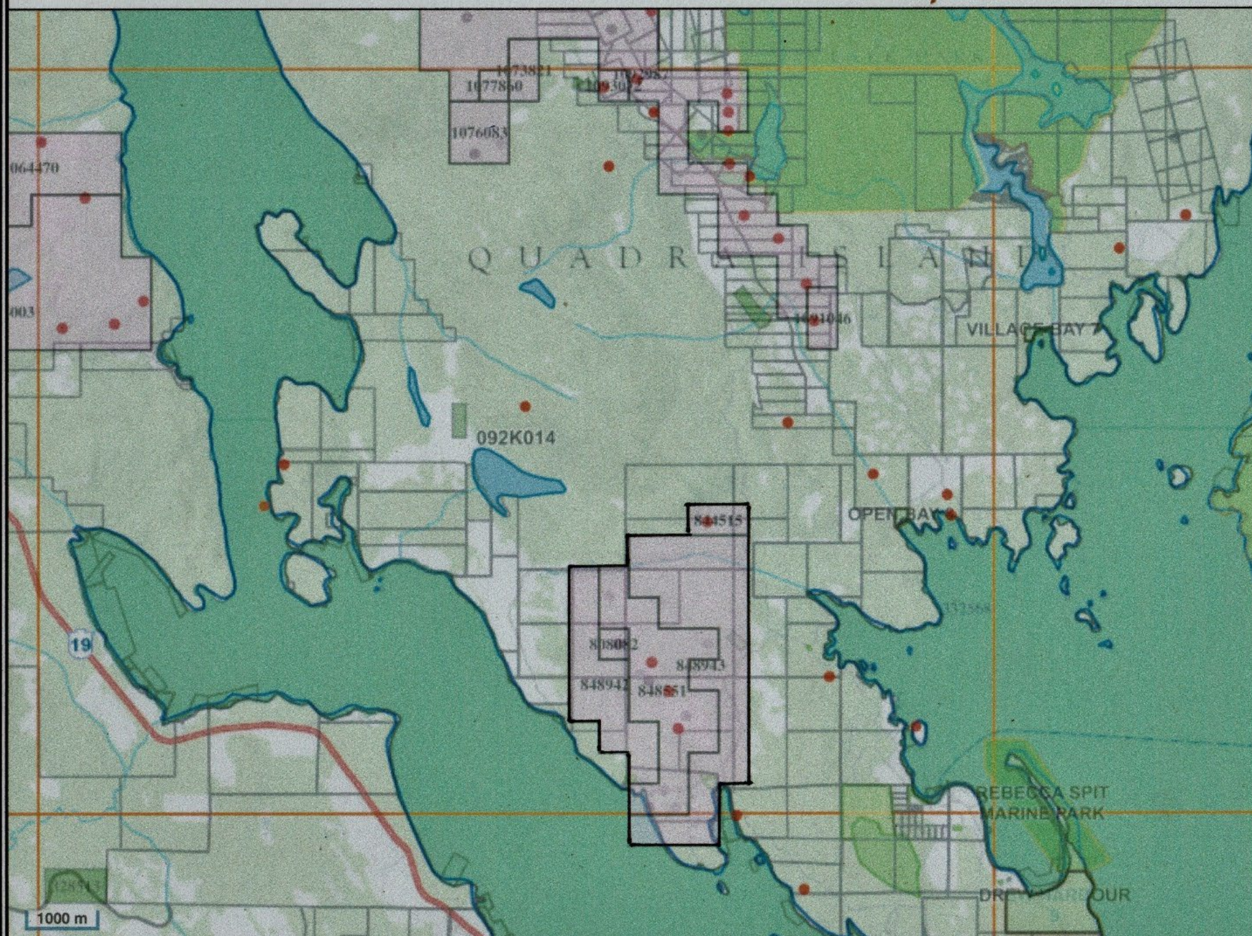
Mob/demob/preparation	**302.90**
Meals and accommodations	**540.75**
Truck mileage & fuel	**388.55**
Equipment & safety supplies (first aid, bags, flags, tags)	**79.20**
Shipping samples	**133.55**
ICP AES (ALS ME-MS)	
geochemical analysis sequential leach for copper, ALS Cu-PKG06LI	
oxide/sulphide geochemistry (4 rock samples)	**292.80**

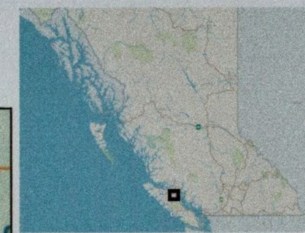
Geochemical analysis geochemistry (Actlabs SGH spatiotemporal geochemical hydrocarbon sample analysis total 50 'B Horizon' samples)	**3,182.40**
Communications (VHF radio, cell phone)	**45.00**
Shipping	**108.27**
Report	**1,150.00**
Total=	**$ 9,373.42**

Fig 1 General Location Copper Island Claims

BRITISH COLUMBIA

Fig 2 Copper Island MTO Claims





Legend

Mineral Titles (MTO)
- MTO Grid
- Title (current)
  - LEASE
  - CLAIM
- Reserves
  - No Registration
  - Conditional
  - Heritage/Historic Site

Other Mining Layers
- Mineral Occurrences (MINFILE)
  - Producer
  - Past Producer
  - Developed Prospect
  - Other Minfile Occurrence

Crown Land Layers (Tantalis)
- Land Act Survey Parcels - Tantalis - Legal Descriptions
  - Label Text
- Land Act Survey Parcels - Tantalis - Outlined

Administrative Boundaries
- Local Regional Greenspaces - Outline
  - Local and Regional Greenspa
- Local Regional Greenspaces - Colour Filled
- Federal Transfer Lands - Outlined

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION.

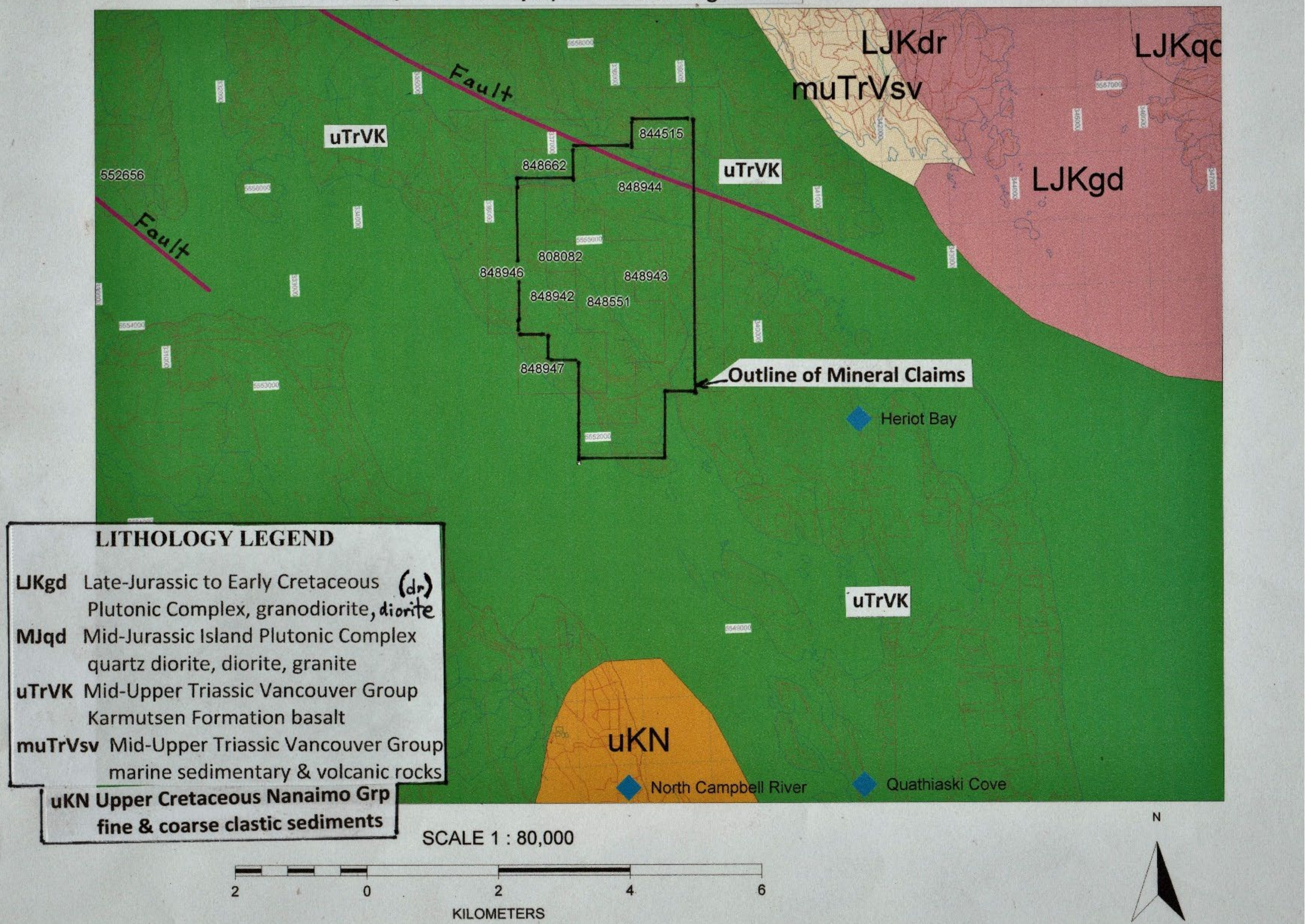
Printed using the Mineral Titles Online (MTO) application. 092K 03/W, 092K.014, Nanaimo MD

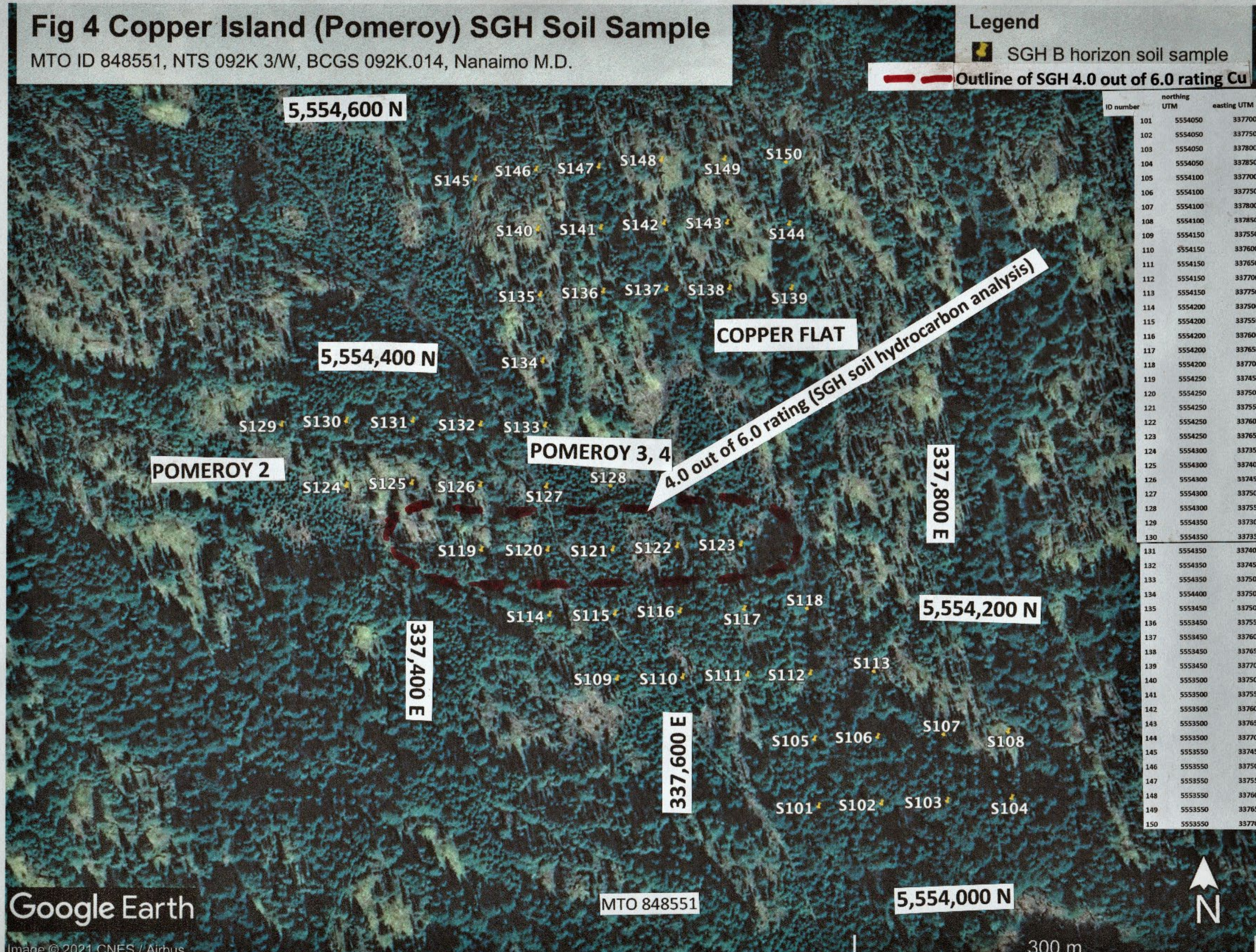
Center: 50°8'43", -125°16'31"
Scale: 1 : 135420
SRS: EPSG:3857
UTM Zone: 10

N

Fig 3 Copper Island Property Regional Geology

BCGS 092K.014, NTS 092K 03/W, Nanaimo Mining Division





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150	5553550	337700

Fig 4 Copper Island (Pomeroy) SGH Soil Sample

MTO ID 848551, NTS 092K 3/W, BCGS 092K.014, Nanaimo M.D.

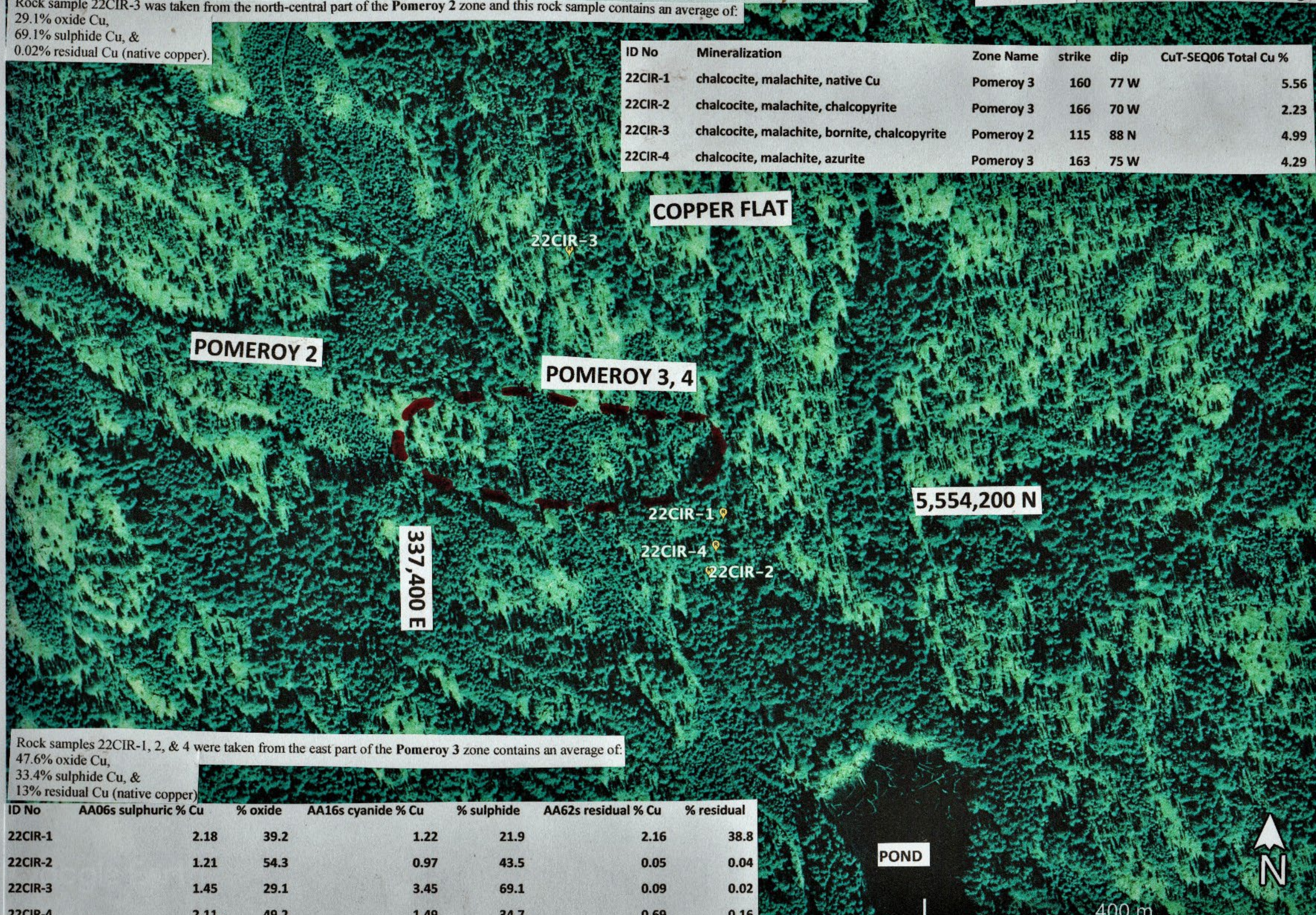
Fig 5 Copper Island (Pomeroy) Rock Chip Sample

MTO ID 848551, NTS 092K 3/W, BCGS 092K.014, Nanaimo M.D. ALS Analysis Cu-PGK061LI

Rock sample 22CIR-3 was taken from the north-central part of the **Pomeroy 2** zone and this rock sample contains an average of:
29.1% oxide Cu,
69.1% sulphide Cu, &
0.02% residual Cu (native copper).

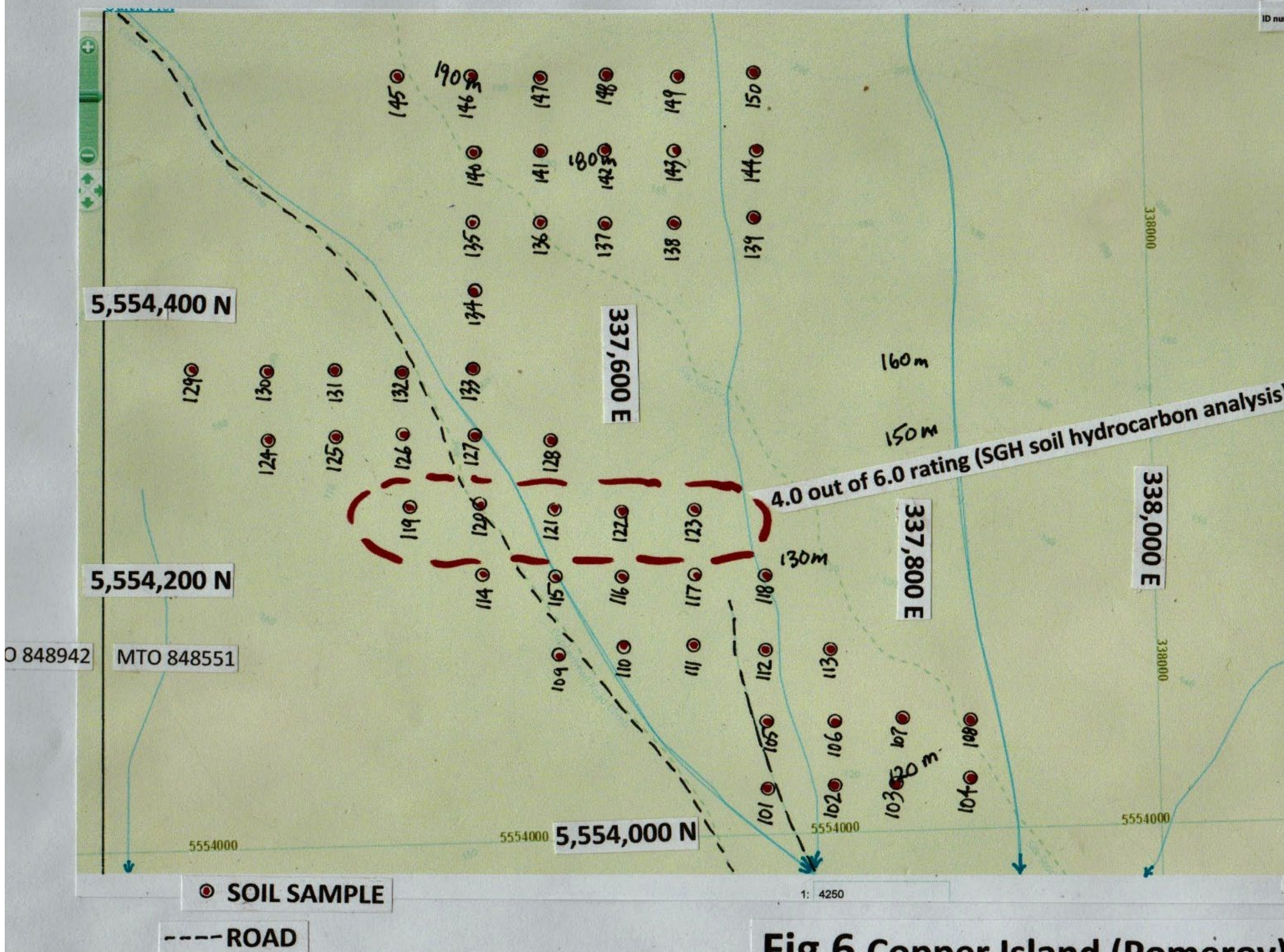
Legend
R rock chip sample
Outline of SGH 4.0 out of 6.0 rating Cu

ID No	Mineralization	Zone Name	strike	dip	CuT-SEQ06 Total Cu %
22CIR-1	chalcocite, malachite, native Cu	Pomeroy 3	160	77 W	5.56
22CIR-2	chalcocite, malachite, chalcopyrite	Pomeroy 3	166	70 W	2.23
22CIR-3	chalcocite, malachite, bornite, chalcopyrite	Pomeroy 2	115	88 N	4.99
22CIR-4	chalcocite, malachite, azurite	Pomeroy 3	163	75 W	4.29



Rock samples 22CIR-1, 2, & 4 were taken from the east part of the **Pomeroy 3** zone contains an average of:
47.6% oxide Cu,
33.4% sulphide Cu, &
13% residual Cu (native copper)

ID No	AA06s sulphuric % Cu	% oxide	AA16s cyanide % Cu	% sulphide	AA62s residual % Cu	% residual
22CIR-1	2.18	39.2	1.22	21.9	2.16	38.8
22CIR-2	1.21	54.3	0.97	43.5	0.05	0.04
22CIR-3	1.45	29.1	3.45	69.1	0.09	0.02
22CIR-4	2.11	49.2	1.49	34.7	0.69	0.16



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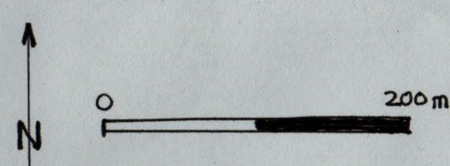
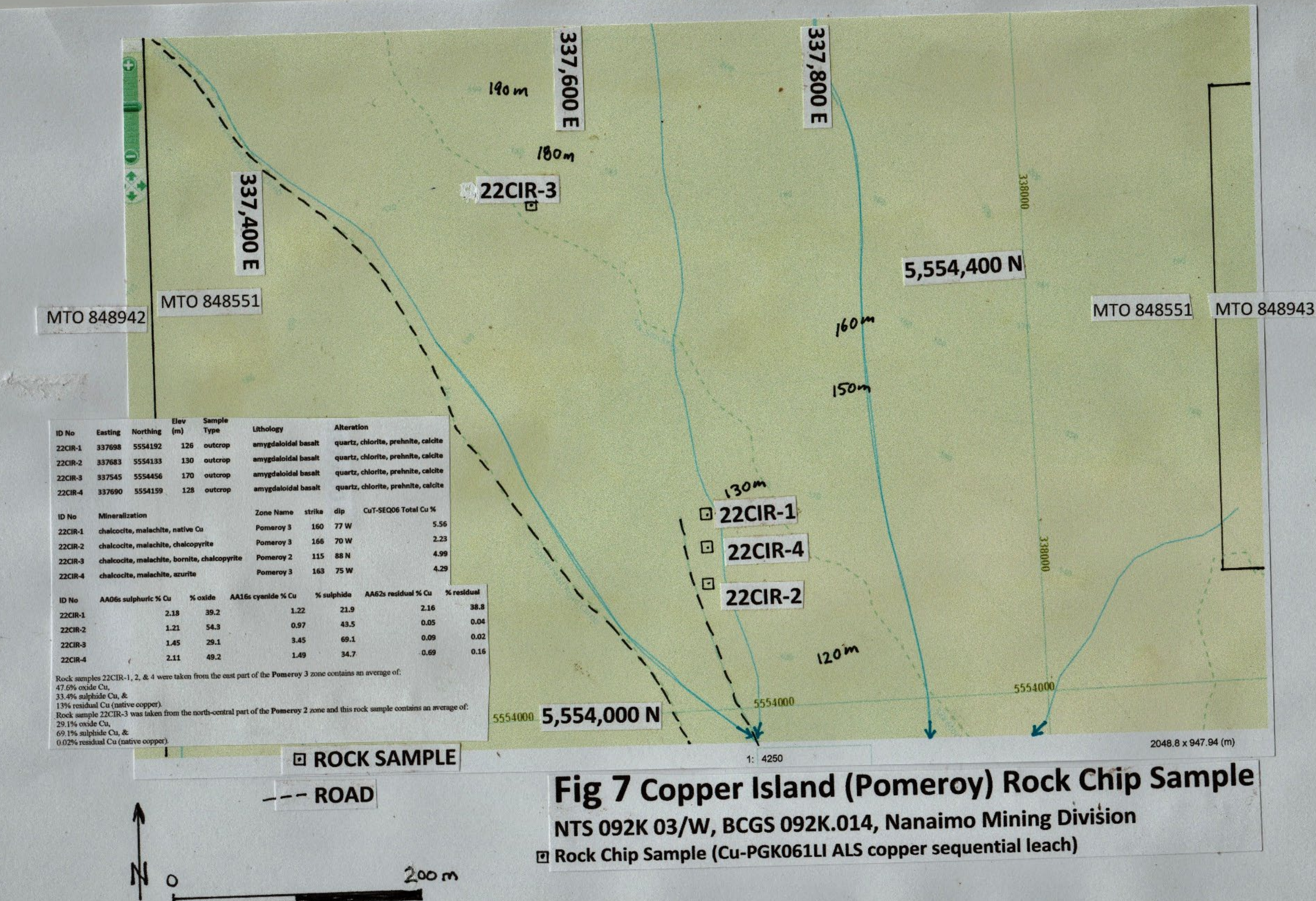


Fig 6 Copper Island (Pomeroy) SHG Soil

NTS 092K 03/W, BCGS 092K.014, Nanaimo Mining Division

SGH soil sample prefix S (Actlabs hydrocarbon analysis)



ID No	Easting	Northing	Elev (m)	Sample Type	Lithology	Alteration
22CIR-1	337698	5554192	126	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-2	337683	5554133	130	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-3	337545	5554456	170	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite
22CIR-4	337690	5554159	128	outcrop	amygdaloidal basalt	quartz, chlorite, prehnite, calcite

ID No	Mineralization	Zone Name	strike	dip	CuT-SEQ06 Total Cu %
22CIR-1	chalcocite, malachite, native Cu	Pomeroy 3	160	77 W	5.56
22CIR-2	chalcocite, malachite, chalcopyrite	Pomeroy 3	166	70 W	2.23
22CIR-3	chalcocite, malachite, bornite, chalcopyrite	Pomeroy 2	115	88 N	4.99
22CIR-4	chalcocite, malachite, azurite	Pomeroy 3	163	75 W	4.29

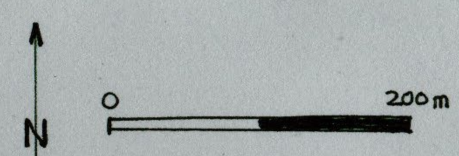
ID No	AA06s sulphuric % Cu	% oxide	AA16s cyanide % Cu	% sulphide	AA62s residual % Cu	% residual
22CIR-1	2.18	39.2	1.22	21.9	2.16	38.8
22CIR-2	1.21	54.3	0.97	43.5	0.05	0.04
22CIR-3	1.45	29.1	3.45	69.1	0.09	0.02
22CIR-4	2.11	49.2	1.49	34.7	0.69	0.16

Rock samples 22CIR-1, 2, & 4 were taken from the east part of the **Pomeroy 3** zone contains an average of:
47.6% oxide Cu,
33.4% sulphide Cu, &
13% residual Cu (native copper).
Rock sample 22CIR-3 was taken from the north-central part of the **Pomeroy 2** zone and this rock sample contains an average of:
29.1% oxide Cu,
69.1% sulphide Cu, &
0.02% residual Cu (native copper).

Fig 7 Copper Island (Pomeroy) Rock Chip Sample

NTS 092K 03/W, BCGS 092K.014, Nanaimo Mining Division

Rock Chip Sample (Cu-PGK061LI ALS copper sequential leach)



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149	5553550	337650
150	5553550	337700

Fig 8 Copper Island (Pomeroy) SHG Soil

NTS 092K 03/W, BCGS 092K.014, Nanaimo Mining Division

103 O SGH soil sample prefix S (Actlabs hydrocarbon analysis) ID# 101-150

494 SGH Cu (Source: Actlabs A22-02196, reported in parts per trillion)

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: KIKAUKA, ANDRIS
4199 HIGHWAY 101
POWELL RIVER BC V8A 0C7

Finalized Date: 28-MAR-2022
This copy reported on
29-MAR-2022
Account: KIKAND

CERTIFICATE VA22039722

Project: Copper Island

This report is for 4 samples of Rock submitted to our lab in Vancouver, BC, Canada on 16-FEB-2022.

The following have access to data associated with this certificate:

ANDRIS KIKAUKA

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
SND-ALS	Send samples to internal laboratory
CRU-QC	Crushing QC Test
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
DISP-01	Disposal of all sample fractions

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
CuT-SEQ06	Calc. Sum of Seq. Cu	
Cu-AA06s	Cu Sequential - Sulfuric Leach	AAS
Cu-AA16s	Cu Sequential - Cyanide Leach	AAS
Cu-AA62s	Cu Sequential - Residual	AAS

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:

Rene Mamani, Laboratory Manager, Peru

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: KIKAUKA, ANDRIS
4199 HIGHWAY 101
POWELL RIVER BC V8A 0C7

Finalized Date: 28-MAR-2022
Account: KIKAND

Project: Copper Island

CERTIFICATE OF ANALYSIS VA22039722

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	Cu-AA06s Cu % 0.01	Cu-AA16s Cu % 0.01	Cu-AA62s Cu % 0.01	CuT-SEQ06 Cu % 0.01
22CIR-1		1.30	2.18	1.22	2.16	5.56
22CIR-2		1.77	1.21	0.97	0.05	2.23
22CIR-3		1.07	1.45	3.45	0.09	4.99
22CIR-4		1.11	2.11	1.49	0.69	4.29

***** 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: KIKAUKA, ANDRIS
4199 HIGHWAY 101
POWELL RIVER BC V8A 0C7

Finalized Date: 28-MAR-2022
Account: KIKAND

Project: Copper Island

CERTIFICATE OF ANALYSIS VA22039722

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Lima located at Calle 1 LT-1A Mz-D, esq. Calle A, Urb. Industrial Bocanegra Callao 01, Lima, Peru.

Applies to Method:	Cu-AA06s	Cu-AA16s	Cu-AA62s	CuT-SEQ06

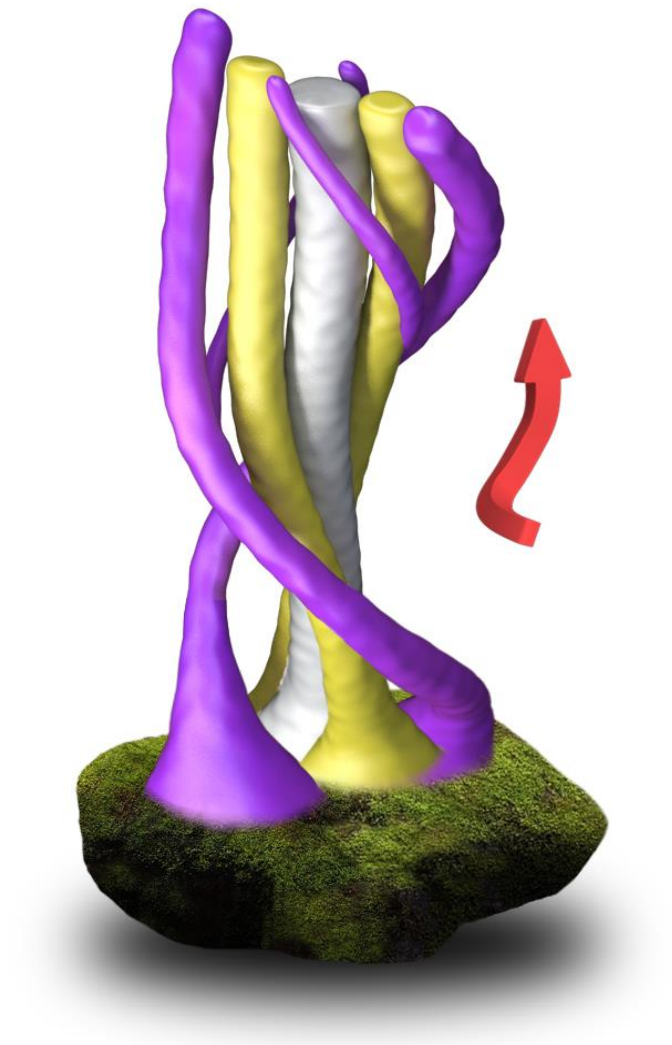
Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:	CRU-31	CRU-QC	DISP-01	LOG-22
	PUL-31	SND-ALS	SPL-21	WEI-21

3D - SGH

"A SPATIOTEMPORAL GEOCHEMICAL HYDROCARBON INTERPRETATION"

GEOFACTS CONSULTING
COPPER ISLAND SGH PROJECT



41 Bittern St. ● Ancaster, ON ● L9G 4V5 ● CANADA ● Tel: (905) 648-9611 ● Fax: (905) 648-9613 ● Toll Free: 1-888-ACTLABS

E-mail: SGH@actlabs.com ● Web Site: www.actlabs.com

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41 Bittern St. ● Ancaster, ON ● L9G 4V5 ● CANADA ● Tel: (905) 648-9611 ● Fax: (905) 648-9613 ● Toll Free: 1-888-ACTLABS

E-mail: SGH@actlabs.com ● Web Site: www.actlabs.com

SGH – SOIL GAS HYDROCARBON
Predictive Geochemistry

for

GEOFACTS CONSULTING

COPPER ISLAND SGH SOIL SURVEY

** Jeff Brown,*

Activation Laboratories Ltd

(- author)*

Dale Sutherland (- originator)

EVALUATION OF SAMPLE DATA – EXPLORATION FOR:
"COPPER" TARGETS

THE SGH COPPER INTERPRETATION TEMPLATE IS USED FOR THIS REPORT

Workorders: A22-02196

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Executive Summary

It is important to read the Report Preface on the next page as an introduction to the report. For more detail the Overview section on page 8 could also be read.

The Copper Island project area had 50 samples collected in a grid with 50m sample spacing. These samples were received by Actlabs and were sorted. After drying in our walk-in temperature controlled drying room and subsequent sieving, the samples were made available to the Organics Laboratory for analysis. Samples were extracted and analyzed by Gas Chromatography coupled with Mass Spectrometry (GC/MS). The data was processed and initial mapping completed. After review and interpretation of this project site, a second set of SGH Class maps was developed. The background SGH information, site interpretation and final maps were then entered into the SGH Interpretation Report.

The customized section for this COPPER ISLAND Survey starts on page 15. In the author's opinion, SGH appeared to perform well in terms of response, however additional sampling may be required to better define the mineralization that may be present and possibly help identify a Redox Zone if it exists.

Note that some exploration companies submit this report intact to government assessors as proof of work on their claim. Be aware that the SGH data is not attached to this report; it is supplied separately as an Excel spreadsheet. Government assessors will also have to be supplied with this data.

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PREFACE

THIS "STANDARD" SGH INTERPRETATION REPORT:

The purpose of this Soil Gas Hydrocarbon (SGH) interpretation "Standard Report" is to ensure that clients and other potential reviewers of the results have a good understanding of this organic, deep penetrating geochemistry. As SGH provides such a large data set and is not interpreted in the same way as an inorganic geochemical method, the provision of this interpretation and report enables the user to realize the results in a timely fashion and capitalizes on years of research and development since the inception of SGH in 1996 combined with the knowledge obtained by Activation Laboratories through the interpretation of SGH data from over 1,100 surveys for a wide variety of target types in various lithologies from many geographical locations. Although referenced today as a "nano-technology", the analysis of SGH has not changed since inception. The report is compulsory as it is the only known organic geochemistry that, in spite of the name, uses "non-gaseous" semi-volatile organic compounds interpreted using a forensic signature approach. Many different sample types can be used in the same survey. Interpretation is based solely on SGH data and does not include the consideration from any other geochemistry (inorganic), geology, or geophysics that may exist related to the survey area(s). This report can also provide evidence of project maintenance. To keep the price to a minimum and to provide as short a turnaround time as practically possible, usually only one SGH Pathfinder Class map is illustrated in a "Standard Report" with an applied interpretation although several other SGH Pathfinder Class maps are used and referenced. Definitions of certain terms or phrases used in this report can be found in Appendix A.

The interpretation in this report has used the results from some of the research with SGH in recent years which has focused on the potential that the SGH data is able to further dissect and understand the relationships between the chemical Redox conditions in the overburden the development of an electrochemical cell and its affect in shaping the upward migration of geochemical anomalies. This has resulted in the development by Activation Laboratories of a new enhanced model of the Electrochemical/ Redox Cell theory originated by Govett (1976) that was further developed to the model by Hamilton (2004, 2007). The new enhanced model developed by Sutherland (2011) takes the general anomalies expected by the Hamilton model to a higher level of detail and specificity. This has resulted in a more confident level of interpretation which has been referenced as 3D-SGH or **3D-"Spatiotemporal Geochemical Hydrocarbons (SGH)"**. This model was formally introduced at the International Applied Geochemistry Symposium (IAGS) organized by The Association of Applied Geochemists that took place in Rovaniemi, Finland, in August 2011. This new level of understanding of the expected anomaly types that can be observed with SGH provides a new level of quality control in the interpretation process as the symmetry of SGH anomalies can assure the interpreter which anomalies are as a result of a buried target. With the enhanced 3D-SGH interpretation that was introduced in 2012, we also mark the beginning of the ability to make some statements regarding the possible depth to mineralization for some projects as we dissect the Redox cell relative to the new Electrochemical Cell theory. The cover of this report is an artist's rendering of the pathways of different classes of Spatiotemporal Geochemical Hydrocarbons which migrate through the overburden. This model is used as the new 3D-SGH interpretation approach.

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DISCLAIMER

This "SGH Interpretation Report" has been prepared to assist the user in understanding the development and capabilities of this Organic based Geochemistry. The interpretation of the Soil Gas Hydrocarbon (SGH) data is in reference to a template or group of SGH classes of compounds specific to a type of mineralization or target that is chosen by the client (i.e. the template for petroleum, gold, copper, VMS, uranium, etc.). The various templates of SGH Pathfinder Classes that together define the forensic identification signature for a wide range of commodity target types; Gold, Nickel, VMS, SEDEX, Uranium, Cu-Ni-PGE, IOCG, Polymetallic, and Copper, as well as for Kimberlites, Coal Seam, Wet Gas and Oil Play, have been developed through years of research and have been further refined from review of case studies and orientation studies has proven to be able to also address a wide range of lithologies. Even with 20+ years of development and experience with SGH, Activation Laboratories Ltd. cannot guarantee that the templates used are applicable to every type of target in every type of environment. The interpretation in this report attempts to identify an anomaly that has the best SGH signature in the survey for the type of mineralization or target chosen by the client. However, this interpretation is not exhaustive and there may be additional SGH anomalies that may warrant interest. It should not be viewed due to the generation of this SGH report, that Activation Laboratories Ltd. has the expertise or is in the business of interpreting any other type of geochemical data as a general service. As the author was trained by the originator of the SGH geochemistry who has researched and developed this exploration tool since 1996, and has produced similar interpretations using SGH data for over 1,000 surveys, he is the best qualified person to prepare this interpretation as assistance to clients wishing to use this SGH geochemistry. Activation Laboratories Ltd. can offer assistance in general suggestions for sampling protocols and in sample grid design; however we accept no responsibility to the appropriateness of the samples taken. Activation Laboratories Ltd. has made every attempt to ensure the accuracy and reliability of the information provided in this report. Activation Laboratories Ltd. or its employees do not accept any responsibility or liability for the accuracy, content, completeness, legality, or reliability of the information or description of processes contained in this report. The information is provided "as is" without a guarantee of any kind in the interpretation or use of the results of the SGH geochemistry. The client or user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using any information or material contained in this report or using data from the associated spreadsheet of results.

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Cautionary Note Regarding Assumptions and Forward Looking Statements

The statements and target rating made in the Soil Gas Hydrocarbon (SGH) interpretive report or in other communications may contain or imply certain forward-looking information related to the quality of a target or SGH anomaly.

Statements related to the rating of a target are based on comparison of the SGH signatures derived by Activation Laboratories Ltd. through previous research on known case studies. The rating is not derived from any statistics or other formula. The rating is a subjective value on a scale of 0 to 6 relative to the similarity of the SGH signature reviewed compared to the results of previous scientific research and case studies based on the analysis of surficial samples over known ore bodies. No information on the results from other geochemical methods, geophysics, or geology is usually available as additional information for the interpretation and assignment of a rating value unless otherwise stated. References to the rating should be viewed as forward-looking statements to the extent that it involves a subjective comparison to known SGH case studies. As with other geochemical methods, an implied rating and the associated anticipated target characteristics may be different than that actually encountered if the target is drilled tested or the property developed. Activation Laboratories Ltd. may also make a scientifically based prediction in this interpretive report to an area that might be used as a drill target. Usually the nearest sample is identified as an approximation to a "possible drill target" location. This is based only on SGH results and is to be regarded as a guide based on the current state of this science.

Unless otherwise stated, Activation Laboratories Ltd. has not physically observed the exploration site and has no prior knowledge of any site description or details or previous test results. Actlabs makes general recommendations for sampling and shipping of samples. Unless stated, the laboratory does not witness sampling, does not take into consideration the specific sampling procedures used or factors such as; the season of sampling, sample handling, packaging, or shipping methods. The majority of the time, Activation Laboratories Ltd. has had no input into sampling survey design. Where specified Activation Laboratories Ltd. may not have conducted sample preparation procedures as it may have been conducted at the client's assigned laboratory external to Actlabs. Although Actlabs has attempted to identify important factors that could cause actual actions, events or results to differ scientifically which may impact the associated interpretation and target rating from those described in forward-looking statements, there may be other factors that cause actions, events or results that are not anticipated, estimated or intended. In general, any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions, future events or performance are not statements of historical fact. These "scientifically based educated theories" should be viewed as "forward-looking statements".

Readers of this interpretive report are cautioned not to place undue reliance on forward-looking information. Forward looking statements are made based on scientific beliefs, estimates and opinions on the date the statements are made and for the interpretive report issued. The Company undertakes no obligation to update forward-looking statements or otherwise revise previous reports if these beliefs, estimates and opinions, future scientific developments, other new information, or other circumstances should change that may affect the analytical results, rating, or interpretation.Actlabs nor its employees shall be liable for any claims or damages as a result of this report, any interpretation, omissions in preparation, or in the test conducted. This report is to be reproduced in full, unless approved in writing.

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SOIL GAS HYDROCARBON (SGH) GEOCHEMISTRY – OVERVIEW

In the search for gas, oil, minerals and elements, geologists require tools to assess the location and potential quantity of minerals and ores. In the past people looked at the landscape to find the deposit. Similar landscapes indicate similar mineral and metal deposits. This is searching on a macro level, while geochemistry is searching on a micro level. Surficial materials requires many minerals and elements, so surficial materials can contain indications of the presence of minerals and elements.

SGH is a deep penetrating geochemistry that involves the analysis of surficial samples from over potential mineral or petroleum targets. The analysis involves the testing for 162 hydrocarbon compounds in the C5-C17 carbon series range applicable to a wide variety of sample types. These hydrocarbons have been shown to be residues from the decomposition of bacteria and microbes that feed on the target commodity as they require inorganic elements to catalyze the reactions necessary to develop hydrocarbons and grow cells in their life cycle. Specific classes of hydrocarbons (SGH) have been successful for delineating mineral targets found at over 950 metres in depth. Samples of various media have been successfully analyzed i.e., soil (any horizon), sand, till, drill core, rock, peat, humus, lake-bottom sediments and even snow. After preparation in the laboratory, the SGH analysis incorporates a very weak leach, essentially aqueous, that only extracts the surficial bound hydrocarbon compounds and those compounds in interstitial spaces around the sample particles. These are the hydrocarbons that have been mobilized from the target depth. SGH is unique and should not be confused with other hydrocarbon tests or traditional analyses that measure C1 (Methane) to C5 (Pentane) or other gases. Thus, in spite of the name, SGH does not analyze for any hydrocarbons that are actually gaseous at room temperature and SGH can also be used to analyze for hydrocarbons in sample types other than soil. SGH is also different from other soil hydrocarbon tests that thermally extracts or desorbs all of the hydrocarbons from the whole soil sample. This test is less specific as it does not separate the hydrocarbons and thus does not identify or measure the responses as precisely. These tests also do not use a forensic approach for identification. In SGH, the hydrocarbons in the sample extract are separated by high resolution capillary column gas chromatography and then detected by mass spectrometry to isolate, confirm, and measure the presence of only the individual hydrocarbons that have been found to be of interest from initial research and development and from performance testing especially from two Canadian Mining Industry Research Organization (CAMIRO) projects (97E04 and 01E02).

Over the past 20+ years of research, Activation Laboratories Ltd. has developed an in-depth understanding of the unique SGH signatures associated with different commodity targets. Using a forensic approach we have developed target signatures or templates for identification, and the understanding of the expected geochromatography that is exhibited by each class of SGH compounds. In 2004 we began to include an SGH interpretation report delivered with the data to enable our clients to realize the complete value and understanding of the SGH results in a short time frame and provide the benefits to them from past research sponsored by Actlabs, CAMIRO, OMET and other industrial sponsors. In 2011, a new model of Electrochemical/Redox Cell theory was proposed and the new 3D-SGH interpretation approach based on this theory was incorporated in 2012 on a routine basis for SGH interpretation reports.

SGH has attracted the attention of a large number of Exploration companies. In the above mentioned initial research projects the sponsors have included (in no order): Western Mining Corporation, BHP-Billiton, Inco, Noranda, Outokumpu, Xstrata, Cameco, Cominco, Rio Algom, Alberta

Geological Survey, Ontario Geological Survey, Manitoba Geological Survey and OMET. Further, beyond this research, Activation Laboratories Ltd. has interpreted the SGH data for over 1,000 targets from clients since January of 2004. In both CAMIRO research projects over known mineralization, client orientation studies, and in exploration projects over unknown targets, SGH has performed exceptionally well. As an example, in the first CAMIRO research project that commenced in 1997 (Project 97E04), there were 10 study areas that were submitted blindly to Actlabs. These study sites were specifically selected since other inorganic geochemical methods were unsuccessful at illustrating anomalies related to the target. Although Actlabs was only provided with the samples and their coordinates, SGH was able to locate the blind mineralization with exceptional accuracy in 9 of the 10 surveys. In 2007, shortly after providing SGH interpretation reports, SGH was credited in helping locate previously unknown mineralization, e.g. Golden Band Resources drilled an SGH anomaly and discovered a significant vein containing "visible" gold. (www.goldenbandresources.com) SGH has been very successful and mining companies have repeatedly used SGH on several reports. Of those clients that try this SGH Geochemistry, over 90+% have continued to use this technique as repeat clients. SGH has helped discover a large number of new deposits, however many clients have kept this to themselves as a competitive strategy.

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SOIL GAS HYDROCARBON SURVEY DESIGN AND SAMPLING

Summary: See Appendix C for more details

In summary, the best conditions for the sample type and survey design include:

- Fist sized samples are usually retrieved from a shallow dug hole in the 15 to 40 cm range of depth.
- Different sample types can be taken even "within" the same survey or transect, data leveling is rarely required. SGH is highly effective in areas of very difficult terrain. The Golden Rule is to always take a sample.
- Samples should be evenly spaced in a grid or as a second choice, in a series of transects with sample lines spaced at a ratio of up to 4:1 (line spacing: sample spacing).
- A minimum of 50 sample "locations" is recommended with one-third over the target and one-third on each side of the target into background if this can be predicted. More samples representing a larger area is preferred in order to optimize data contrast.
- If very wet, samples can be drip dried in the field. No special preservation is required for shipping.
- Relative or UTM sample location coordinates are required to allow interpretation.

SAMPLE PREPARATION AND SGH ANALYSIS

Summary: See Appendix D for more details

Upon receipt at Activation Laboratories:

- The samples are air-dried at a relatively low temperature of 40°C.
- The samples are then sieved and the -80 mesh sieve fraction (<177 microns, although different mesh sizes can be used at the preference of the exploration geologist) is collected.
- The collected "pulp" is packaged in a Kraft paper envelope and transferred from our sample preparation department to our Organic Geochemical department also located in our World Headquarters in Ancaster, Ontario, Canada.
- Each sample is then extracted, compounds separated by gas chromatography and detected by mass spectrometry at a *Reporting Limit* of one part-per-trillion (ppt).
- The results of the SGH analysis is reported in raw data form in an Excel spreadsheet as "semi-quantitative" concentrations without any additional statistical modification.

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SGH DATA QUALITY

Summary: See Appendix E for more details

Reporting Limit:

- The Excel spreadsheet of concentrations for the Hydrocarbons monitored is in units of ppt as "parts-per-trillion" which is equivalent to nanograms/kilogram (ng/Kg). The reporting limit of 1 ppt represents a value of approximately 5 times the standard deviation of low level analysis. Essentially all background noise has already been eliminated. All data reported should be used in geochemical mapping. Actual detectable levels can be significantly < 1 ppt.

Laboratory Replicate Analysis:

- An equal aliquot of a random sample is analyzed as a laboratory replicate.
- Due to the large amount of data, the estimate of method variability is reported as the percent coefficient of Variation (%CV).
- A laboratory replicate analysis is reported at a frequency of 1 for every 15 samples analyzed.
- The variability of field duplicate samples are similarly reported if identified.

Historical SGH Precision:

- Although the SGH analysis reports results at such trace ppt concentration levels, the average %CV for laboratory replicates is excellent at an average of 8% within a range of ±4%.
- Field duplicates have historically been 3 to 5% higher than laboratory replicates.

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SGH DATA INTERPRETATION

Summary: See Appendix F for more details

SGH Interpretation and Report:

- Due to the very large data set provided by the SGH analysis, this interpretation report is provided to offer guidance in regards to the results of this geochemistry for the survey.
- In our interpretation procedure, we separate the 162 compound results into 19 SGH sub-classes. These classes include specific alkanes, alkenes, Thiophenes, aromatic, and polyaromatic compounds. The concentrations of the individual hydrocarbons within a class are simply summed. None of these compounds are gaseous at room temperature.
- At this time the magnitude of the hydrocarbon class data has not been proven to imply a higher grade or quantity of the mineralization if present.
- A "geochemical anomaly threshold value" should not be calculated for SGH data as any background or noise has already been filtered out through the use of a Reporting Limit instead of some type of detection limit.
- SGH hydrocarbon data should never be interpreted individually. Interpretation must always use a compound class.
- Multiple SGH Classes are compared. Multiple SGH Classes that have been associated with the presence of specific mineralization are called SGH Pathfinder Classes that together represent the forensic signature or fingerprint identification that is associated with a specific type of mineralization or petroleum play.
- The anomalies of each class are compared as to their geochromatographic dispersion and ability to vector to a common location that may be referenced as a potential drill target.
- The agreement and behaviour between SGH Pathfinder Classes for a type of target, as a template of Classes, is compared against SGH research and orientation studies. The quality of agreement is expressed as an SGH Rating of confidence that the SGH anomalies of the survey being interpreted are similar to the behaviour of these classes over known mineralization.
- The interpretation is customized for the project survey by the Author. The SGH Rating and Interpretation is subjective and based on the experience from 1,000+ SGH survey interpretations. The interpretation is not conducted or assisted by any computerized process.

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SGH CHARACTERISTICS

Summary: See Appendix G for more details

SGH Characteristics:

- The pattern of SGH anomalies are usually of high contrast and easily observed.
- SGH is able to illustrate exceptionally symmetrical anomalies in spite of exotic overburden and barriers such as permafrost, shale and basalt caps, previously thought to be impenetrable.
- Inorganic geochemistry can illustrate anomalies of metals that have been mobilized by surficial physical processes. As SGH is essentially “blind” to the inorganic content of a sample, SGH anomalies illustrate the true source of mineralization as it is not affected by the effects of terrain or from mobilized cover such as from glacial transport.
- As SGH hydrocarbons are essentially non-polar, highly symmetrical anomalies are observed. As such symmetry is rare in geochemistry this provides a higher level of confidence to the interpretation that is reflected by a higher SGH Rating Score in comparison to known case studies.
- SGH can be analyzed on samples collected in different seasons or adjacent years. The combined data most often does not require any data leveling.

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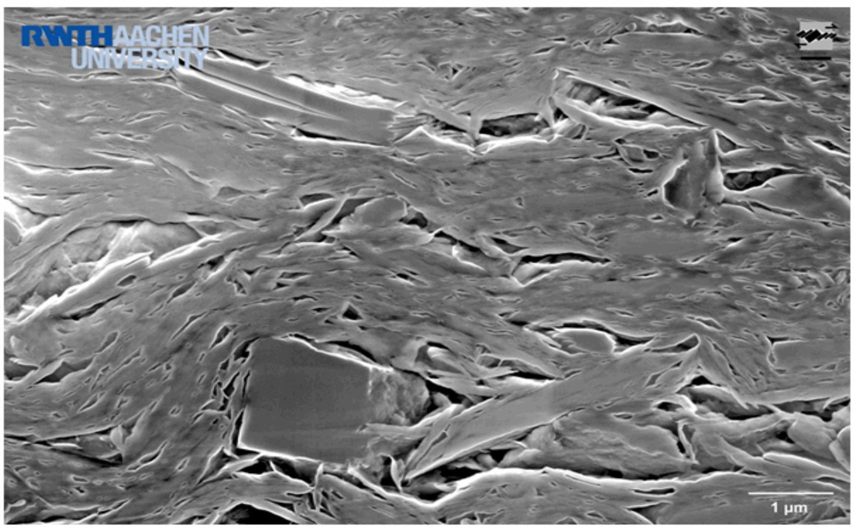
SGH INTERPRETATION – LATEST ENHANCEMENTS

SGH continues to be developed even after 18 years since inception. Although the sample preparation and analysis has stayed the same, in the last 10 years in particular it is the interpretation and understanding of the SGH data and the intricacies of the SGH signatures that have been more refined. In the last 4 years this understanding has extended to the ability to make some prediction of depth from just the use of this geochemistry. A "first" for a geochemistry that is unique to SGH. Today the latest SGH development is the introduction of the concept of the "transparent overburden". The basis of this ability is the understanding that SGH is a Nano-geochemistry. The term "Nano" is not only used to describe the capability in detecting "Nano" quantities of these hydrocarbon based bacterial decomposition products, with the ability to detect 1 nanogram per kilogram (ng/Kg or 1 part-per-trillion), but "Nano" also describes the size of the hydrocarbon compounds detected which are typically < 1 micron in size. These relatively non-polar hydrocarbons are far smaller in size than inorganic oxides and sulphides. This difference is the reason why SGH anomalies are reliable vertical projections of mineral and/or petroleum based targets. This SGH Nano-geochemistry thus makes even the most exotic overburden "transparent". The SEM (Scanning Electron Microscope) image below illustrates the large number of micron sized pore spaces in "Boom Clay", specific high density clay, used to cap deep chambers of high hazard and radioactive wastes. To SGH, this is just a sieve that these hydrocarbons are able to still migrate through by Nano-Capillary action. Inorganic oxides and sulphide anomalies from targets below such complex overburden may be laterally displaced as they must rely on faults and shears in order to migrate to the surface.



This new understanding of the rationale of why SGH anomalies are so reliable in their vertical projection of the location of mineralization and in the ability to so accurately delineate shallow and deep mineralization has further lead to the ability to use SGH to review different layers of the overburden as it relates to the mineral target due to the wide molecular weight range of the SGH Nano-geochemistry. Another factor that aids in this review of layers, much like peeling back the layers of a sweet-onion, is the understanding of weathering processes in the 5 metres near the surface that includes the Vadose zone.

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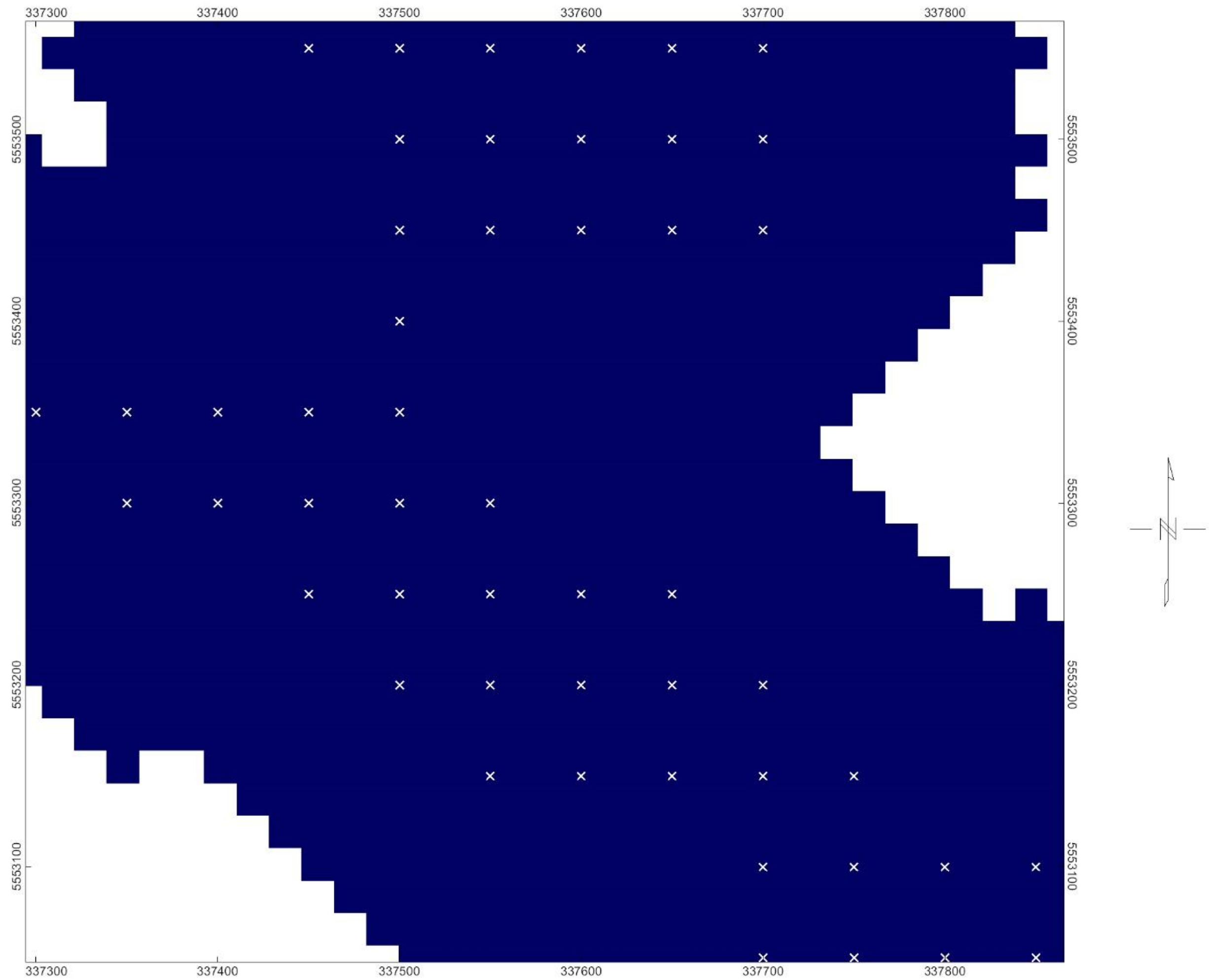
This report is based on the SGH results from the analysis of a total of 50 soil samples from the COPPER ISLAND survey. The survey can be described as a grid with sample spacing of 50m. The samples were shipped to Actlabs Global Headquarters, then prepared for analysis. Sample coordinates were provided for mapping of the SGH results for these samples in UTM format. A sample location map is shown below.



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QUALITY ASSURANCE – COPPER ISLAND SGH SOIL SURVEY

Note that the associated SGH results are presented in a separate Excel spreadsheet. This data is semi-quantitative and is presented in units of pg/g or *parts-per-trillion* (ppt) as the concentration of specific hydrocarbons in the sample. The number of samples submitted for this survey is at the minimum recommended to use SGH as an exploration tool. SGH has been proven to discriminate between false mobilized soil anomalies and is able to actually locate the source target deposition. SGH is a deep-penetrating geochemistry and has been proven to locate Copper, Gold, VMS, and other types of mineralization as well as for petroleum targets at several hundred metres below the surface irrespective of the type of overburden. Note that the SGH data is only reviewed for the particular target deposit type requested, in this case for the presence of copper. It is assumed that there is only one potential target. If known, in surveys with several complex geophysical targets, to obtain the best interpretation the client should indicate that there are possibly multiple targets. The possibility of multiple geophysical targets should be known due to potential overlap and increased complexity of the resulting geochromatographic anomalies, which could alter the interpretation as to which targets are mineralized or not.

The overall precision of the SGH analysis for the samples at the COPPER ISLAND SGH Soil Survey was very good as demonstrated by 4 samples taken from this survey which were used for laboratory replicate analysis and were randomized within the analytical run list. The average Coefficient of Variation (%CV) of the replicate results for the samples in this survey was **10.9%** which represents a very good level of analytical performance especially at such low parts-per-trillion concentrations.

The location of **Field Duplicate samples was not identified from the COPPER ISLAND SGH Soil Survey**. It is typically observed that the variability of field duplicates are 5% to 8% CV higher than for laboratory duplicates of random samples taken from the survey. Note that the SGH geochemistry does not detect all organic hydrocarbons present in the samples.

No other statistics were used on the data for this report for mapping or interpretation purposes aside from the use of a Kriging trending algorithm in the GeoSoft Oasis Montaj mapping software. **This interpretation is based only on the analytical results provided by the SGH Nano-Geochemistry from this submission of samples for the COPPER ISLAND survey samples.** A template or group of SGH Pathfinder Classes that have been found to be associated with buried Copper targets was used as the basis for the interpretation of this area. The final interpretation is customized and conducted by the author. Although the term "template" or "signature" appears in this SGH Report, a computerized interpretation is not used.

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SGH INTERPRETATION - SGH TARGET PATHFINDER CLASS MAPS

The map shown in plan and in 3D views in this report are SGH “Pathfinder Class maps” for targeting various chemical classes of hydrocarbon flux signatures related to Copper type targets. This report may have been expanded by the author to include additional SGH information that may help understand the structure of the findings if present at the COPPER ISLAND survey area. The maps shown represent the simple summation of several individual hydrocarbon compound concentrations that are grouped from within the same organic chemical class. SGH Pathfinder Class maps have been shown to be robust as they are each described using from 4 to 14 chemically related SGH compounds (unless otherwise stated) which are simply summed to create each chemical class map. Thus each map has a higher level of confidence as it is not illustrating just one compound measurement. A legend of the compound classes is in the SGH data spreadsheet.

The Copper template of SGH Pathfinder Classes uses primarily low and medium molecular weight classes of hydrocarbon compounds. At least three Pathfinder Class maps, associated with the SGH signature developed must be present to begin to be considered for assignment of a good rating relative to the SGH performance in case studies over known Copper types of mineralization (some of these maps might not be shown in this report). These SGH classes must also concur and support a consistent interpretation in relation to the expected geochromatographic characteristics of the Pathfinder Class. The *overall* SGH interpretation Rating has even a higher level of confidence as it further implies the consensus between at least three SGH pathfinder classes. A combination of these SGH Pathfinder Classes potentially defines the signature of a target at depth if present. Each of the SGH Pathfinder Class maps shown in this report is a specific *portion* of the SGH signature relative to the presence of Copper as described. Each pathfinder class map is still just one of the Pathfinder Class maps used in the interpretation template for Copper. Additional interpretation information which may contain additional SGH Pathfinder Class maps is available as a Supplementary Report at an additional price (see Appendix H).

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SGH TARGET PATHFINDER CLASS MAPS

Note that any concentration value in the accompanying Excel spreadsheet greater than the "Reporting Limit" of 1 ppt is important data and has been able to depict mineralization or petroleum plays at depth under cover in other projects. The majority of the variability or noise has already been eliminated; additional filtering will adversely affect any interpretation. Note again that a Kriging trending algorithm has been applied to the mapping routine in the Geosoft Oasis Montaj software in the development of the SGH Class maps. SGH concentrations are in some way probably related to the amount of mineralization or petroleum resource present, which probably defines the characteristics or quantity of the biofilm(s) in contact with the target, as well as being related to the depth to the target. SGH results have also been shown to correlate well with geophysical measurements such as magnetic anomalies and those of CSAMT.

The SGH Class maps are the plot of the sums of the particular hydrocarbon class in parts-per-trillion concentration. The dark blue areas of these maps represent very low or non-detect values or areas where no samples were taken. For plotting purposes the values at the Reporting Limit are plotted as one-half of this filtering, or one-half of 1.0 ppt. The hotter colours represent higher concentrations of the sum of the class with the highest values being purple in colour. The lowest concentrations that may be at 0.5 ppt, are shown in blue.

SGH is a "deep penetrating" geochemistry but also works well for deep targets as well as relatively shallow targets. Targets shallower than about 3 to 5 metres (or potentially outcrop) will have a reduced SGH signal due to interaction with atmospheric conditions and samples taken right at surface outcrops will have even weaker signals due to a higher degree of weathering from various environmental processes on these volatile and semi-volatile organic hydrocarbons.

In the interpretation of SGH data there are several goals. In order of importance they are:

- Review for the presence of Redox Cells
- Vector to the location of a mineral target
- Delineate the mineral target
- Identify the type of mineral target
- Describe the features of the possible mineral target
- See if there is information on the basement structure
- Predict a drill target
- Predict the possible depth to the mineral target

Not every goal is expected to be able to be achieved with each SGH data set or survey.

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A22-02196 – GEOFACTS CONSULTING
COPPER ISLAND SGH SOIL SURVEY
SGH INTERPRETATION RATING AND CLARIFICATION

Often a geochemistry such as SGH is used as an economical exploration investigation tool to provide more information on an exploration target as some geological body or help prioritize some geophysical target. Such occurrences are in general expected to change the chemistry of the immediate overburden which in turn is expected to result in a chemical anomaly as detected in surficial samples. The author believes that it is important to convey to the client the presence of an anomaly even if there is only part of the SGH signature present that may be related to the mineral signature or template requested. In other words, the anomaly illustrated in the report may not be representative of the mineralization sought as only a part of the SGH signature is present, but the anomaly may confirm the presence of some geological or geophysical target which may be valuable to the client for comparison with other data. In addition it would confirm the ability and sensitivity of SGH to show geological or geophysical occurrences. <u>Example:</u> A well defined rabbit-ear anomaly on an SGH Pathfinder Class map in a report, even though it may have a lower rating of 2.0 or 3.0, may illustrate to the exploration geologist that SGH does agree that there is some geological body at depth that is changing the chemistry and forming a Redox cell in the overburden. However the SGH forensic signature <u>Rating</u> indicates that there is a lower confidence that the "identification" of that body is likely to be say Gold (if the SGH Gold template is requested). This information would provide a confirmation that a target does exist, however if the SGH Rating indicates that the target has a lower level of confidence then the target does not have the forensic signature of the mineralization sought. SGH would thus provide a savings to the exploration program and divert focus to potentially other targets having a higher confidence in the SGH identification Rating for Gold in this example.

<u>Thus, the SGH rating must always be considered in conjunction with the SGH Pathfinder Class map(s) shown in the report.</u> It is this rating that provides an insight into the authors' complete interpretation and is a measure of the confidence and to what degree the complete SGH signature compares with the SGH results from over case studies of similar known deposits. Unfortunately, the interpretation of a visual, as the SGH map provided, is so ingrained in humans that the reader may erroneously disregard the author's subjective rating to a large degree. As of November 25, 2011, the author now highlights the rating directly on the page having the plan view of the SGH Pathfinder Class map chosen to be illustrated. Thus to the reader of the report, the authors Rating is actually **<u>MORE IMPORTANT</u>** than the readers instinctive interpretation of just the one map provided. Again, SGH should not be used in isolation from other site information, and that a Rating of 4.0 is when, in the authors' estimation, a signature only starts to have a good identification relative to that type of mineralization, and that the survey may warrant further study although it is not a specific recommendation to drill test the anomaly. As the SGH interpretation is represented by a signature, the SGH Pathfinder Class map(s) illustrated in reports is always only "PART" of the specific SGH signature or template that the client requests (i.e. for Gold, etc.). No one SGH map can represent the complete signature due to the different amounts of spatial dispersion of the anomalies that are expected for the variety of SGH chemical classes within each signature. Thus the author selects the one SGH Class Map relative to the mineralization requested that best represents an anomaly that estimates the overall signature found in the survey.

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A22-02196 – GEOFACTS CONSULTING – COPPER ISLAND SGH "REDOX" INTERPRETATION

As a general comment in regard to the SGH results at the COPPER ISLAND SGH Soil Survey, the SGH data in general had good signal strength and the SGH Class map in this report is fairly good in contrast. It's important to not think of contrast with SGH as Signal:Noise as by using a "Reporting Limit" the noise has already been completely or nearly completely removed.

One of the first steps in the interpretation of the spatial aspect of SGH data is to locate potential Redox conditions in the overburden. Redox conditions have been well known to be related to blind mineral or petroleum targets; however, Redox conditions can also be attributed to other geological bodies that are of no particular interest. SGH signatures have been shown to be able to differentiate between these targets. SGH has been described by the Ontario Geological Survey of Canada (OGS) as a "Redox Cell locator". Redox Cells can be related to the presence of bacteriological activity related to mineralization but also may be related to the presence of geological bodies such as Granite Gneiss, Dunite, etc. Recently SGH has been shown to be far more sensitive to depicting Redox conditions than even measurements using pH or ORP tests. It is important to understand that; not only is SGH a Redox cell locator, but due to the forensic signature of mineralization used in the interpretation process, SGH can discriminate mineral targets and other target types from geological bodies, other magnetically detected targets, mineralized versus non-mineralized conductors, cultural effects, etc. even in surveys over highly difficult or exotic terrain that often requires the collection of multiple sample types. In the interpretation it is not necessary to detect a Redox cell if mineralization is within approximately 30 metres of the surface as this would be insufficient depth to develop a dispersion halo anomaly. Many SGH surveys for Gold, Petroleum, and other mineral and petroleum based targets can result in multiple types of anomalies, depending on the class of SGH compounds, even over the same target and in the same set of samples. Thus "Apical", "Segmented-Nested-Halo", and "Rabbit-Ear" or "Segmented Halo" type anomalies are all typically observed within the SGH data set from the effect of Redox cells that have developed over mineralization and their interaction with Redox conditions and the electromotive forces produced by the subsequent Electrochemical Cell. Different types of anomalies have also been associated with the depth to the target. The types of anomalies developed have been recently explained by the use of the 3D-SGH model of interpretation. The highly symmetrical anomalies illustrated by SGH data closely follow the expected self-organizing patterns of neutral species within an electrochemical cell in recent experiments in physics laboratories. The highly symmetrical anomalies are also able to be observed as the Nano-sized dimensions of these organic hydrocarbons are much smaller than inorganic oxides and sulphides. Thus the SGH hydrocarbons can migrate through the Nano-sized fissures of even clay, basalt, and permafrost caps by means of Nano-capillary action. The simple fact that the SGH anomalies are geometrically symmetrical and not random further improves the confidence of SGH interpretations.

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Remember that signals near the edges of the survey or at the ends of transects can appear to be higher due to the Kriging trending algorithm applied for mapping. For this reason these anomalies may not be interpreted.

The SGH Class maps are only a portion of the SGH Copper signature used in each interpretation. There is not any one SGH Class map that can, as a single map, be reliably used to interpret the presence of Copper, Gold or any other type of mineralization. Again, as signals or anomalies due to any analytical, sample preparation, or sampling procedure "noise" have been removed through the use of the Reporting Limit filter, any SGH anomaly on this Pathfinder Class Map has a high probability of being real data. The SGH Pathfinder Class maps shown are highly sensitive in illustrating strong results for Copper based on previous research and case studies. Other SGH Classes at the COPPER ISLAND survey also agree with the interpretation shown in the following pages.

This portion of the SGH hydrocarbon signatures is predicted to be associated with Copper targets as the detection of those hydrocarbon residues produced by the decomposition of microbes and bacteria from the life cycle death phase that have been feeding on Copper. These residues have subsequently migrated to the surface as a flux of different classes of hydrocarbons or decomposition products. During migration to the surface, dispersion away from the mineralization is expected. The distance of dispersion is dependent on the principle of geochromatography that is in generally related to the average molecular weight of the class. It has been found that the complexity of the overburden does not affect the geochromatographic dispersion of the SGH classes of this Nano-Geochemistry, unless a situation is encountered such as that of a "major" fault that may result in a very slight deflection of this path. This is the basis of the 3D-SGH interpretation as the relatively neutral hydrocarbons that SGH detects are spatially observed as very symmetrical anomalies (as presented by the creator at the IAGS conference in Finland in 2011 and further at the IAGS conference in New Zealand in November of 2013 and Tucson Arizona in 2015).

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A22-02196 – GEOFACTS CONSULTING – COPPER ISLAND
SGH COPPER INTREPRETATION

Page 23 of this report, and in 3D-view on page 24, shows the anomaly from the most reliable SGH Pathfinder Class in predicting the presence of Copper Mineralization. This map illustrates what appears to be a "rabbit-ear" anomaly in the central portion of the survey. The center apical response of this anomaly is expected to be the most reliable vertical projection of the copper mineralization. We believe that mineralization might exist at this location as a vertical projection beneath this anomaly. Several other SGH Pathfinder Class Maps associated with the presence of Copper mineralization (not shown in this report) support the interpretation of this anomaly at the COPPER ISLAND SGH Project.

Again, the prediction of this anomaly for Copper mineralization is based only on SGH.

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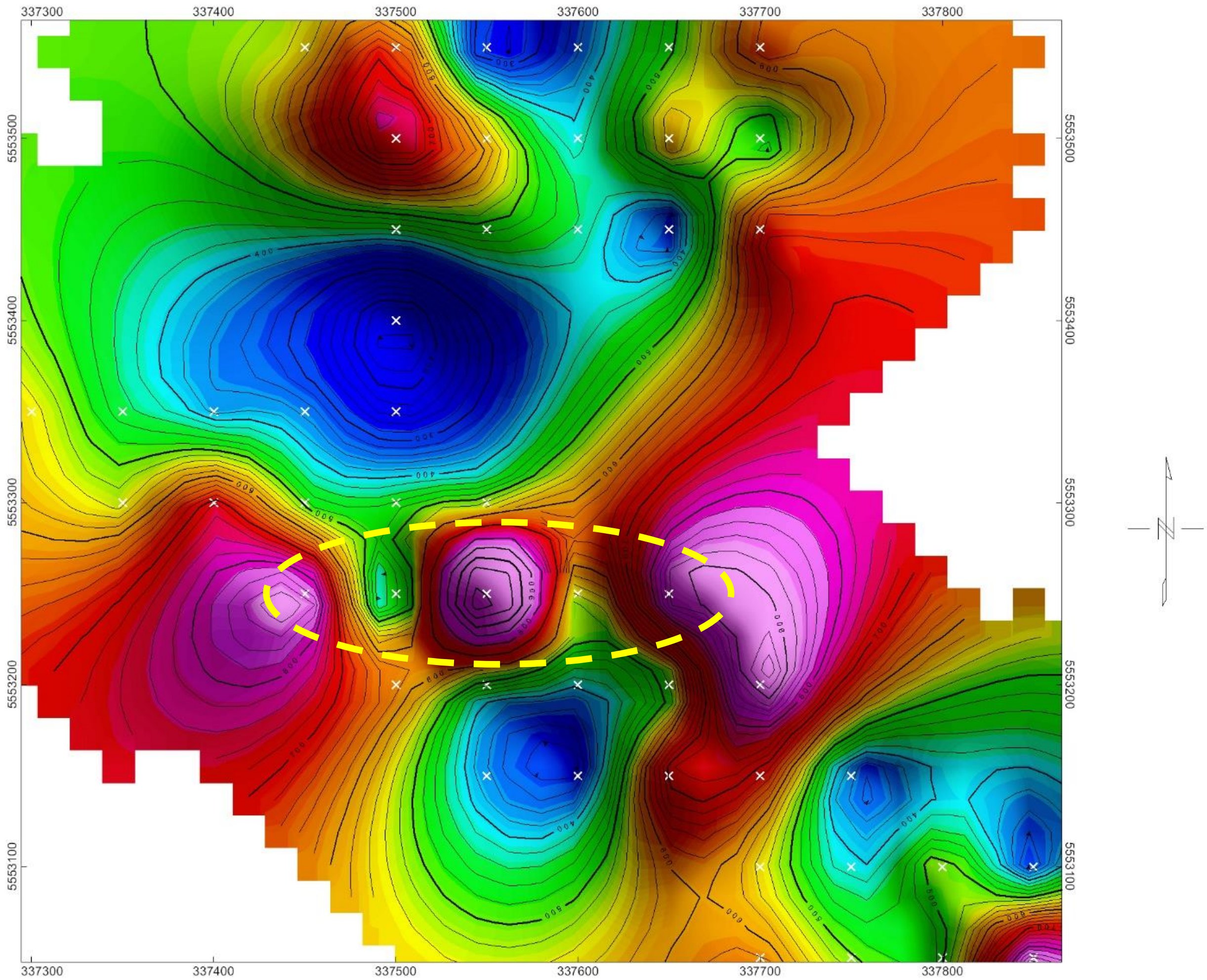
A22-02196 – GEOFACTS CONSULTING – COPPER ISLAND
SGH "COPPER" PATHFINDER CLASS MAP



"RABBIT-EAR" ANOMALY = POSSIBLE COPPER MINERALIZATION – YELLOW OUTLINE

SGH SIGNATURE RATING RELATIVE TO "COPPER" = 4.0 OF 6.0

Results represent only the material tested. Actlabs is not liable for any claim/damage from the use of this report in excess of the test cost. Samples are discarded in 90 days unless requested otherwise. This report is only to be reproduced in full.

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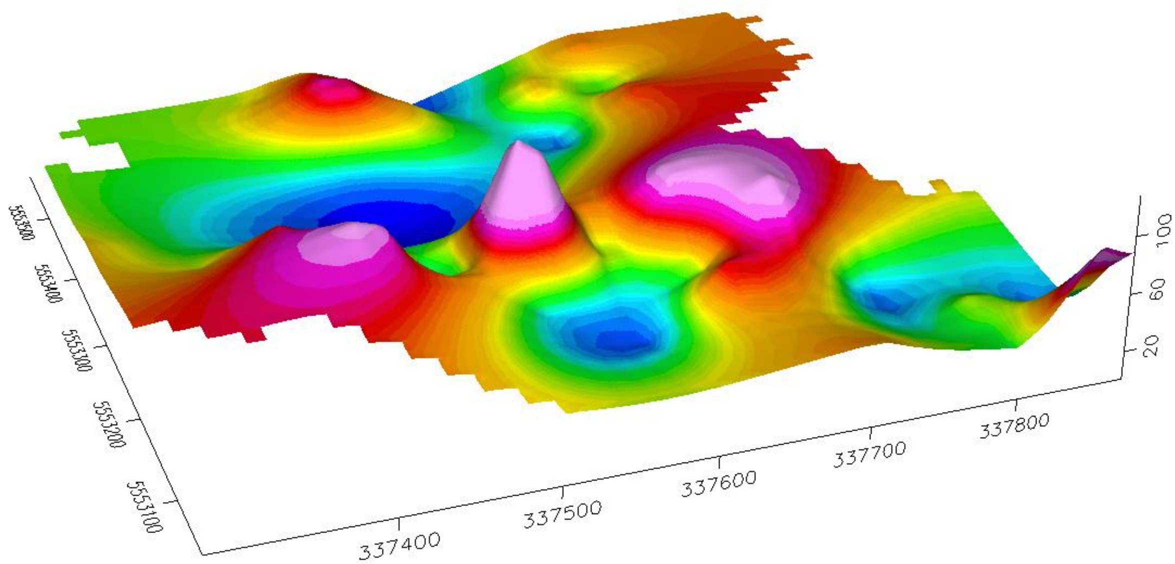
SGH "COPPER" PATHFINDER CLASS MAP



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A22-02196 – GEOFACTS CONSULTING
COPPER ISLAND SGH SOIL SURVEY - SGH INTERPRETATION FOR THE PRESENCE OF MINERALIZATION

The interpretation of the SGH data on page 23 relative to the presence of Copper mineralization at the Geofacts Consulting COPPER ISLAND survey may be based on the makeup of the SGH signatures with the possible presence of Copper mineralization.

In general, SGH is not a perfect confirmatory technique for inorganic chemistry's. Inorganic methods will show the highest anomalies for outcrops at surface whereas the SGH sensitivity is reduced at this point due to further degradation by environmental exposure to sun, rain, UV, etc. This reduction may not be seen on the maps provided due to normalization to the highest response in the map overall. SGH predicts whether the mineralization is present at subcrop or deeper portions relative to the mineralized structure.

The subjective SGH confidence rating for the COPPER ISLAND survey assigned to the anomalies in general on these maps where the anomalies coincide on their location is on average 4.0 on a scale of 6.0. The Rating for the COPPER ISLAND survey means that, based only on SGH, that there is a good chance that mineralization may be present. Note, as the SGH Rating is one of confidence, in our judgment an assignment of a Rating of 0.0 cannot be given out. From client feedback in recent years, a few grass roots exploration surveys that have been interpreted with an SGH Confidence Rating of 4.0 (±0.5) have been drill tested and have had successful mineralization intersections. However the frequency of success is much more prevalent for those targets that have associated SGH Rating Scores of ≥5.0.

The SGH Ratings shown on page 23 in this and all SGH reports are based on a scale of 6.0, in 0.5 increments, with a value of 6.0 being the best. The SGH Ratings discussed in relation to mineralization represents the similarity of these SGH results with other SGH case studies and orientation studies over known mineralization. Theses SGH signatures or templates have been constantly refined and enhanced since inception and has been proven to be effective and reliable. The SGH templates are based on the interpretation from over 1,100 interpretations of surveys in many different geographical regions and from a wide variety of lithologies. The degree of confidence in the SGH Rating only <u>starts to be "good" at a level of 4.0</u>. A Rating of 4.0 or more is an indication that this SGH Nano-Geochemistry predicts that the zone(s) described may warrant more work or more consideration.

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Any identification of a drill target is not an explicit recommendation by Activation Laboratories Ltd. to drill test the associated location or SGH anomaly. A drill target is implied to ensure that the reader is aware of the location having the highest confidence of being the location of the vertical projection of mineralization, based only on SGH data. This is also not a recommendation for vertical drilling. Vertical drilling may not be the best approach to test the SGH anomaly in this area although SGH anomalies are very much a vertical projection of the target at depth regardless of the makeup of the overburden. Activation Laboratories Ltd. has no experience in actual exploration drilling techniques. Other geological, geochemical and/or geophysical information should also be considered.

It must be remembered that other SGH Class maps not shown in this report have also been reviewed to support the interpretation shown. To deduce the most scientifically sound interpretation of the SGH surveys, the client should use a combination of the SGH results shown in this report with additional geochemical, geophysical, and geological information to possibly obtain a more confident and precise target location. This is not a statement to convey some lower level of confidence in SGH results. This statement is made to recognize the proper use and interpretation of any scientific data. Whenever possible, multiple methods should always be employed so that any decisions do not rely on any one technique.

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SGH SURVEY RECOMMENDATIONS

In general, the number of samples was at the recommended minimum to show what the author believes to be valuable information at the COPPER ISLAND survey. Our recommendation states to use a minimum of 50 sample locations to be taken with at least 2 or 3 samples taken within 1 metre of a location as field duplicates. Survey designs that use a regular grid are very powerful tools although a 4:1 ratio as spacing between transects: spacing of samples along transects has also had excellent results with SGH. There is a recommendation for additional samples on this survey to potentially better define the extent of the mineralization. Additional infill samples should be able to be easily added to the current data set without data leveling 90+% of the time. As the interpretation is difficult for surveys having less than 50 sample locations and the corresponding confidence is significantly lower, surveys with less than 50 sample locations may not be accepted and may be returned to the client at their expense. We believe a survey with less than 50 sample locations is not beneficial or cost effective to the client.

GENERAL RECOMMENDATIONS FOR ADDITIONAL OR IN-FILL SAMPLING FOR SGH ANALYSIS

In general, if the client decides that in-fill sampling may be warranted, to obtain the best results from additional sampling for SGH it is usually recommended that sample locations from the original survey within, or bordering, the area of interest be re-sampled rather than just combining new sample results with the sample data from the initial survey. Although several SGH surveys have previously been easily and directly, combined without data leveling, it cannot be guaranteed that data leveling will not be required. It has been found that data leveling is more apt to be required should the new samples be collected under significantly different environmental conditions than during the initial sample survey, i.e. summer collection versus winter collection

The process of data leveling adds a minimum of 3 to 5 days of work to conduct the additional data evaluation, develop additional plots of the results, conduct new interpretations, and additional report descriptions. Results from data leveling is also always considered "an approximation", thus the confidence in a combined interpretation will be lower than the interpretation from samples collected during one excursion to the field and submitted as one survey. An additional cost will be invoiced should data leveling operations be required if the client requests that two SGH data sets be interpreted and reported together. Thus re-sampling a few of the original sample locations will provide a faster turnaround time for results and provide more accurate and confident surveys for evaluation and aid in deciding specific drill targets.

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Date Received at Actlabs (Ancaster): February 22, 2022

Date Analysis Complete: March 3, 2022

Interpretation Report: March 14, 2022

GEOFACTS CONSULTING

4199 Highway 101

Powell R, BC, Canada

V8A 0C7

Attention: Andris Kikauka

RE: Your Reference: COPPER ISLAND SGH Survey

Activation Laboratories Workorder: A22-02196

CERTIFICATE OF ANALYSIS

This Certificate applies to the associated Excel Spreadsheet of Hydrocarbon results combined with the discussion and SGH Pathfinder Class maps of the data shown in this report.

50 Samples were analyzed for this submission.

Sample preparation –Actlabs Ancaster – SGH-1: Drying at 40°C and Sieving with -80 mesh collected

Interpretation relative to Coppef targets was requested.

The following analytical package was requested and analyzed at Actlabs Ancaster Canada:

Analysis Code SGH – Soil Gas Hydrocarbon Geochemistry using High Resolution Gas Chromatography/Mass Spectrometry (HRGC/MS)

REPORT/WORKORDER: A22-02196

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at the time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of the material submitted for analysis.

Notes: The SGH – Soil Gas Hydrocarbon Geochemistry is a semi-quantitative analytical procedure to detect and measure 162 hydrocarbon compounds as the organic signature in the sample material collected from a survey area. It is not an assay of Mineralization but is a predictive geochemical tool used for exploration. This certificate pertains only to the SGH data presented in the associated Microsoft Excel spreadsheet of results.

Mr. Dale Sutherland, is the creator of the SGH and OSG organic geochemical methods. He is a Chartered Chemist (C.Chem.) and Forensic Scientist specializing in organic chemistry. He is a member of the Association of the Chemical Profession of Ontario, the Association of Applied Geochemists, the International Association of GeoChemistry, the Ontario Prospectors Association, the Association for Mineral Exploration British Columbia, the Geochemical Society Association, the Ontario Petroleum institute, the Chemical Institute of Canada, and the Canadian Society for Chemistry, as well as having memberships in several national and international Forensic associations. He is not a professional geologist.

CERTIFIED BY:

Jeff Brown

Organics Supervisor

Activation Laboratories Ltd.

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APPENDIX "A"

List of terms

1. **SGH** – "SOIL GAS HYDROCARBON" GEOCHEMISTRY – a Predictive Geochemistry, used for delineate buried inorganic mineral deposits and organic petroleum plays. This is the original name used to describe this geochemistry since inception in 1996. Code SGH is still used when submitting samples.
2. **3D-SGH**- "3D- SPATIAL TEMPORAL GEOCHEMICAL HYDROCARBONS - the method of interpreting SGH and OSG results based on the Redox/Electrochemical Cell model developed by Activation Laboratories Ltd. in 2011.
3. **Redox cell**- an area of oxidation-reduction reactions or exchange of electrons that is produced over geological bodies, mineralization and petroleum based plays.
4. **Electrochemical cell**- the effect of adjacent chemically reduced areas and chemically oxidized areas as a Redox cell produces a electrical gradient that obeys the physics of a typical Electrochemical cell.
5. **Anthropogenic contamination-** the introduction of impurities/compounds of the same type as those that are being analyzed by human actions that could lead to erroneous results.
6. **Background areas**- the area around a mineral deposit that is beyond the effect of the Redox cell formed over geological bodies or exploration targets. Sampling is required into background areas to produce data that has sufficient contrast to illustrate and differentiate anomalies associated with exploration targets.
7. **Background subtracted**- A sample taken some distances away as to not contain any elements of the target being analyzed.
8. **Biofilm**- a layer of microorganisms and microbe and their related secretions and decomposition products, in this case found to inhabit mineral deposits .
9. **Biomarker**- a compound used as an indicator of a biological state. In this case a biological substance used to indicate the presence of a mineral deposit.
10. **Blind mineralization** – buried mineralization that shows no physical indication of its existence at the surface
11. **Compound** – used synonymously with the term hydrocarbon in this report
12. **Compound chemical class** – a group of hydrocarbons that are similar in size, structure, and molecular weight such that their chemical characteristics, such as water solubility, partition coefficients, vapour pressures, etc. are similar
13. **Cultural activities** – human initiated processes that may affect the physical and chemical characteristics at the earth's surface
14. **Delineating targets**- indicate the position or outlines of an exploration target as a vertical projection of the target at depth.
15. **Geochemical anomalies** – inorganic element or organic hydrocarbon measurements that are significantly different than the average low level measurements or background in a survey i.e. the needle in a haystack is an anomaly
16. **Dispersion patterns** – the movement/ spreading of something. In this context the spatial arrangements of hydrocarbons caused by their movements to the surface from some depth.

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17. **Exploration tool** – a geological, geophysical or geochemical method that attempts to illustrate data in exploration activities that may indicate the presence of mineralization or petroleum plays.
18. **Fit for purpose**- this method is ideal for its intended use.
19. **Forensic signature**- a grouping or pattern found to identify a substance having multiple characteristics with a high degree of specificity.
20. **High specificity**- as in being very specific to the mineralization.
21. **Anomalies**- this is the spatial representation of data that illustrates a high or low response as well as the combined spatial shape of anomalous data from several neighbouring samples in a survey that can form anomalies described as Rabbit-Ear, Halo, Segmented-halo, nested-halo, etc.
22. **Inorganic geochemistry** – the measurement of inorganic elements in a survey of near surface samples as a tool for exploration
23. **Data leveling** – a technique that attempts to normalize the data sets obtained between two or more sampling programs. The results of data leveling is always considered as an approximation.
24. **Lithologies-** the characteristics and classifications of rock.
25. **Locations-** the physical/ geographical position or coordinates of samples in a survey.
26. **Noise-** interference in a measurement which is independent of the data signal.
27. **Nugget effect-** Anomalously high precious metal assays resulting from the analysis of samples that may not adequately represent the composition of the bulk material tested due to non-uniform distribution of high-grade nuggets in the material to be sampled. (Webster's online dictionary)
28. **Organic geochemistry-** the Soil Gas Hydrocarbon geochemistry (SGH), or now more accurately named as Spatiotemporal Geochemical Hydrocarbons, is the analysis to detect specific organic, or carbon based, hydrocarbon compounds in a sample. The Organo-Sulphur Geochemistry (OSG) is the analysis to detect specific organic compounds that have sulphur joined to carbon in its molecular structure.
29. **Percent Coefficient of Variation (%CV)** – a measure of data variability
30. **Project maintenance** – an activity where the associated cost is applied to the exploration, advancement, and/or operation of activities associated with a particular claim
31. **Rating-** a value given to the overall confidence in the SGH results
32. **Real (in relation to data)-** any rational or irrational number
33. **Reporting Limit –** minimum concentration of an analyte that can be accurately measured for a given analytical method.
34. **Sample matrix-** the components of a sample other than the analyte.
35. **Sample type** – soil, till, humus, lake bottom sediment, sand, snow, etc.
36. **Semi-quantitative-** yielding an approximation of the quantity or amount of a substance
37. **SGH anomalies** ("Apical", "Nested-Halo", and "Rabbit-Ear" or "Halo")
38. **SGH Pathfinder** (class map/compounds)
39. **SGH template** – a set of hydrocarbon classes that together form a geochemical signature that has been associated with the presence of a particular type of mineralization the majority of the time
40. **Surficial bound hydrocarbons** –
41. **Surficial samples-** a sample from near the earth's surface.
42. **Survey-** the area, position, or boundaries of a region to be analyzed, as set out by the client.

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43. **Project-** a planned undertaking
44. **Transect-** A straight line or narrow section through an object or across a section of land.
45. **Target-** Target refers to the ore body of interest

    Target signature: the unique characteristics that identify the target.

    Target type:

    i.e. Gold, Nickel, Copper, Uranium, SEDEX, VMS, Lithium Pegmatites, IOCG, Silver, Ni-Cu-PGE, Tungsten, Polymetallic, Kimberlite as well as Coal, Oil and Gas.
46. **Threshold-** level or point at which data is accepted as significant or true.
47. **Total measurement error-** An estimate of the error in a measurement. Based on either limitation of the measuring instruments or from statistical fluctuations in the quantity being measured.
48. **Visible (in terms of signature**)- the portion shown in a chart or map

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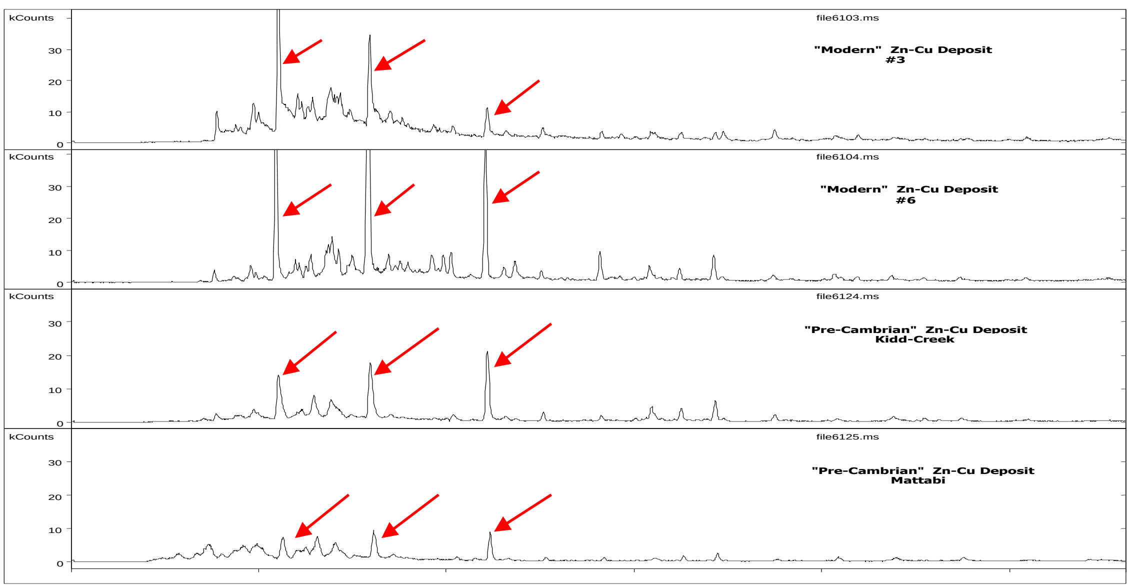
APPENDIX "B"

EXAMPLE OF AN SGH FORENSIC GEOCHEMICAL SIGNATURE EXAMPLE SHOWN FOR A VMS TARGET

The following analyses examine the Volcanic Massive Sulphide (VMS) deposit in various known locations. These analyses show how the gas chromatography indicates the reality of deposits. For all the profiles in this section, the red arrows indicate the signature of the VMS, which have all been found by organic geochemistry. These forensic geochemical signatures are shown to be consistent for similar target areas; therefore, the analyses are reliable indicators for the presence of VMS.

One of the first experiments in 1996 in the development of the SGH analysis was to observe if an SGH response could be obtained directly from an ore sample. From office shelf specimens, small rock chips were obtained which were then crushed and milled. The fine pulp obtained was then subjected to the SGH analysis. These shelf specimen samples were from well known VMS deposits of the Mattabi deposit from the Archean Sturgeon Lake Camp in Northwestern Ontario and from the Kidd Creek Archean volcanic-hosted copper-zinc deposit. Even these specimen samples contain a geochemical record of the hydrocarbons produced by the bacteria that had been feeding on these deposits at depth. As a comparison, SGH analysis were similarly conducted on modern-day VMS ore samples taken from a "black smoker" hydrothermal volcanic vent from the deep sea bed of the Juan de Fuca Ridge where high concentrations of microbial growth was also known to exist. The raw data profiles as GC/MS Total Ion Chromatograms are shown below to illustrate the *"visible"* portion of the VMS signature obtained from the SGH analysis.



The above profiles are:

- First profile: Samples from modern day "black smokers"
- Second profile: Samples from modern day "black smokers"
- Third profile: Samples from Pre-Cambrian Zn-Cu Kidd Creek deposit
- Fourth profile: Samples from Mattabi deposit

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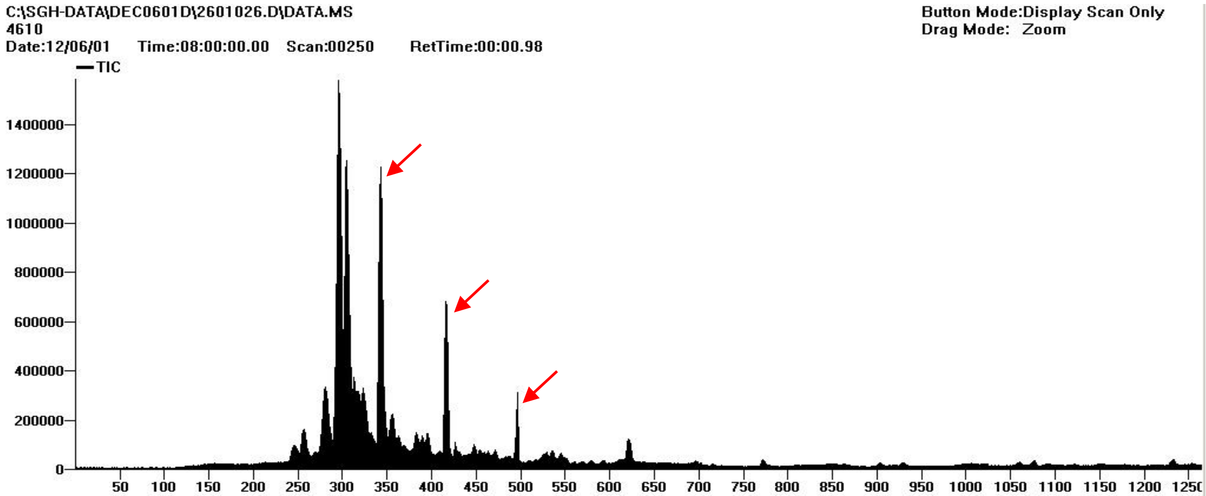
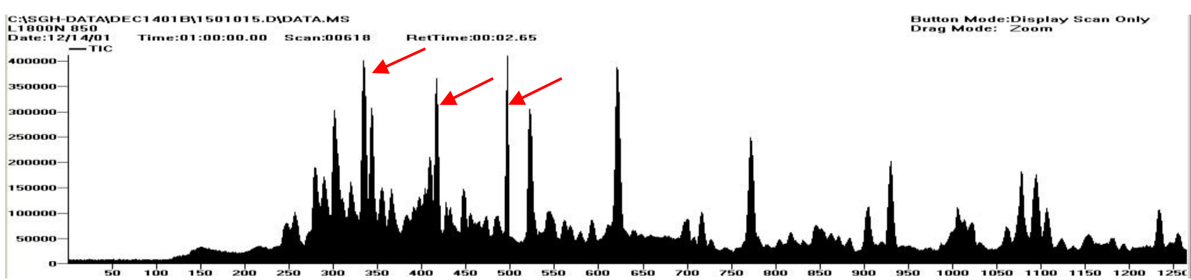
The red arrows point to three compounds that are a *portion* of the SGH signature for VMS type deposits. This visible portion of the VMS signature of hydrocarbons can easily be seen in the analysis of each of these four samples.

The next question in our early objectives was to see if this SGH signature could also be observed in *surficial soil samples* that had been taken over VMS deposits. Through our research projects, soil samples were obtained from over the Ruttan Cu-Zn VMS deposit near Leaf Rapids, Manitoba and located in the Paleoproterozoic Rusty Lake greenstone belt. The profile obtained, as observed in the raw GC/MS chromatogram, is shown in this next image below:



The three compounds indicated by the red arrows represent the same *visible portion* of the VMS signature observed from the modern day black smoker samples and the ore samples taken from the Mattabi and Kidd Creek, even though this soil was taken from over a different VMS deposit in a geographically different area. Is this coincidence?

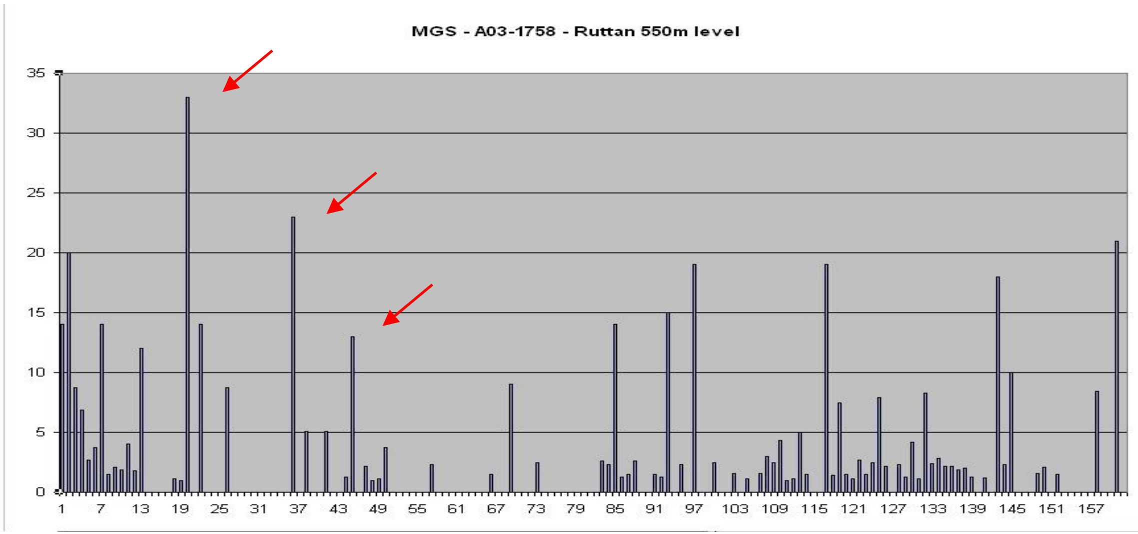
Another soil sample was obtained from Noranda's Gilmour South base-metal occurrence in the Bathurst Mining camp in northern New Brunswick. As shown below, this sample contained a very complex SGH signature, however the visible portion of the VMS signature as indicated by the red arrows is still observed as in the black smoker, Mattabi and Kidd Creek ore samples.



In research conducted by the Ontario Geological Survey, this same portion of the SGH signature was also observed over the VMS deposit at Cross Lake in Ontario. **Note that the visible signature shown as the three compounds indicated by the red arrows is only a small portion of the**

complete SGH VMS signature. The full VMS signature is made up of at least three groups, as three organic chemical classes, that together contain at least 35 of the individual SGH hydrocarbons.

The chromatograms shown on the preceding page from the GC/MS analysis are not used directly in the interpretation of SGH data. As we are only interested in a specific list of 162 hydrocarbons, the mass spectrometer and associated software programs specifically identifies the hydrocarbons of interest, runs calculations using relative responses to a short list of hydrocarbons used as standards, and develops an Excel spreadsheet of semi-quantitative concentration data to represent the sample. Thus the SGH results for a sample, like that observed in ore from the Ruttan, are filtered to obtain the concentrations for the specific 162 hydrocarbons. A simple bar graph drawn from the Excel spreadsheet of the hydrocarbons and their concentrations results in a DNA like *forensic SGH signature* as shown below. The portion discussed hear as the "visible" SGH VMS signature in the GC/MS chromatograms, is again shown by the red arrows.



Through the work done in the SGH CAMIRO research projects, it was observed that the hydrocarbon signature produced by the SGH technique appeared to also be able to be used to differentiate barren from ore-bearing conductors. This was explored further through the submission and analysis of specific specimen samples that represented a barren pyritic conductor and a barren graphitic conductor.

The GC/MS chromatograms from these two specimens are compared to that obtained from the Kidd-Creek ore as shown below. This diagram conclusively shows that the SGH signatures obtained from the two types of barren conductors are completely different than that obtained by SGH over VMS type ore. SGH is thus able to differentiate between ore-bearing conductors and barren conductors as **the Forensic SGH Geochemical signature is different**.

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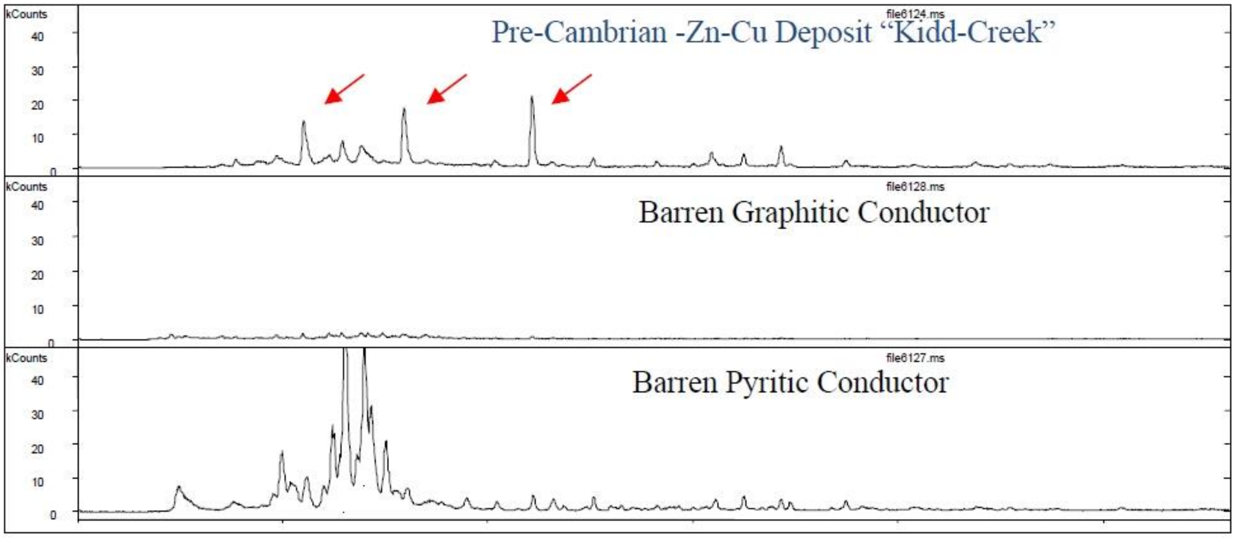

SGH has been described by the Ontario Geological Survey of Canada (OGS) as a "REDOX cell locator". Many SGH surveys for Gold and other mineral targets can result in multiple types of anomalies, depending on the class of SGH compounds, even over the same target and in the same set of samples. Thus "Apical", "Nested-Halo", and "Rabbit-Ear" or "Halo" type SGH anomalies are all typically observed from the effect of REDOX cells that have developed over deposits. REDOX cells are also related to the presence of bacteriological activity.

The VMS template of SGH Pathfinder Classes uses low and medium weight classes of hydrocarbon compounds. Again, at least three Pathfinder Class group maps, associated with the SGH signature for VMS, must be present to begin to be considered for assignment of a good rating. The Pathfinder Class anomalies in these maps must logically concur and support a consistent interpretation in relation to the expected geochromatographic characteristics of the Pathfinder Class, for a specific area.

The interpretation development history for VMS SGH Pathfinder Class map(s) shown in this report is similar to the development history for other target types. The reader should not draw a conclusion that SGH is used only for sulphide based mineralization as some of the most intense SGH anomaly has been associated with Kimberlites where sulphides are essentially not present.

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APPENDIX "C"

SOIL GAS HYDROCARBON SURVEY DESIGN AND SAMPLING

Sample Type and Survey Design: It is highly recommended that a ***minimum*** of 50 sample "locations" is preferred to obtain enough samples into background areas on both sides of *small* suspected targets (wet gas plays, Kimberlite pipes, Uranium Breccia pipes, veins, etc.). SGH is not interpreted in the same way as inorganic based geochemical method. SGH must have enough samples over both the target and background areas in order to fully study the dispersion patterns or geochromatography of the SGH classes of compounds. Based on our minimum recommendation of at least 50 sample locations we further suggest that all samples be *evenly spaced* with about one-third of the samples over the target and one-third on each side of the target in order for SGH to be used for exploration. Targets other than gas plays, pipes, dykes or veins usually require additional samples to represent both the target and background areas.

SGH has been shown to be very robust to the use of different sample types even "within" the same survey or transect. Research has illustrated that it is far more important to the ultimate interpretation of the results to take a complete sample transect or grid than to skip samples due to different sample media. The most ideal natural sample is still believed to be soil from the "Upper B-Horizon", however excellent results can also be obtained from other soil horizons, humus, peat, lake-bottom sediments, and even snow. The sampling design is suggested to use evenly spaced samples from 15 metres to 200 metres and line spacing from 50 metres to 500 metres depending on the size and type of target. A 4:1 ratio is suggested, however, larger orientation surveys have also been successful. Ideally even large grids should have one-third of the samples over the target and two-thirds of the samples into anticipated background areas. This will allow the proper assessment of the SGH geochromatographic vectoring and background site signature levels with minimal bias. Individual samples taken at significant distances from the main survey area to represent background are not of value in the SGH interpretation as SGH results are not background subtracted. Samples can be drip dried in the field and do not need special preservation for shipping and has been specifically designed to avoid common contaminants from sample handling and shipping. SGH has also been shown to be robust to cultural activities even to the point that successful results and interpretation has been obtained from roadside right-of-ways. In conclusion, the conditions for the sample type and survey design include:

- Fist sized samples are retrieved from a shallow dug hole in the 15-40 cm range of depth.
- Different sample types can be taken even "within" the same survey or transect, data leveling is rarely ever required. SGH is highly effective is areas of very difficult terrain. The Golden Rule is to always take a sample.
- Samples should be evenly spaced in a grid or a series of transects with sample lines spaced at a ratio of up to 4:1 (line spacing: sample spacing).
- A minimum of 50 sample "locations" is recommended with one-third over the target and one-third on each side of the target into background if this can be predicted. This provides the opportunity of optimal data contrast.
- If very wet, samples can be drip dried in the field.
- No special preservation is required for shipping.

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APPENDIX "D"
SAMPLE PREPARATION AND ANALYSIS

Upon receipt at Activation Laboratories the samples are air-dried in isolated and dedicated environmentally controlled rooms set to 40°C. The dried samples are then sieved. In the sieving process, it is important that compressed air is not used to clean the sieves between samples as trace amounts of compressor oils "may" poison the samples and significantly affect some target signatures. Solvents such as Acetone, Methanol, and Hexane cannot be used at any time for cleaning sample containers or sampling apparatus ie. Cleaning sieves between samples. The use of solvents at this time severely reduces the response of the hydrocarbons measured. At Activation Laboratories a vacuum is used to clean the sieve between each sample. The -60 mesh sieve fraction (<250 microns, although different mesh sizes can be used at the preference of the exploration geologist) is collected and packaged in a Kraft paper envelope and transferred from our sample preparation department to our Organics Geochemical department also in our World Headquarters in Ancaster, Ontario, Canada. Each sample is then extracted, separated by gas chromatography and analyzed by mass spectrometry using customized parameters enabling the highly specific detection of the 162 targeted hydrocarbons at a *reporting limit* of one part-per-trillion (ppt). This trace level limit of reporting is critical to the detection of these hydrocarbons that, through research, have been found to be related at least in part to the breakdown and release of hydrocarbons from the death phase of microbes directly interacting with a deposit at depth. The hydrocarbon signatures are directly linked to the deposit type, which is used as a food source. The hydrocarbons that are mobilized and metabolized by the microbes are released in the death phase of each successive generation. Very few of the hydrocarbons measured are actually due to microbe cell structure, or hydrocarbons present or formed in the genesis of the deposit or from anthropogenic contamination. The results of the SGH analysis is reported in raw data form in an Excel spreadsheet as "semi-quantitative" concentrations without any additional statistical modification.

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APPENDIX "E"

SGH DATA QUALITY

Reporting Limit

The SGH Excel spreadsheet of results contains the raw unaltered concentrations of the individual SGH compounds in units of "part-per-trillion" (ppt). The reporting of these ultra low levels is vital to the measurement of the small amounts of hydrocarbons now known to be leached/metabolized and subsequently released by dead bacteria that have been interacting with the ore at depth. To ensure that the data has a high level of confidence, a "reporting limit" is used. The reporting limit of 1 ppt actually represents a level of confidence of approximately 5 standard deviations where SGH data is assured to be "real" and non-zero. Thus in SGH the use of a reporting limit automatically removes site variability, and there is no need to further background subtract any data as the reporting limit has already filtered out any site background effects. Thus we recommend that all data that is equal to or greater than 2 ppt should be used in any data review. It is important to review all SGH data as low values that may be the centre of halo anomalies and higher values as apical anomalies or as halo ridges are all important.

Laboratory Replicate Analysis

A laboratory replicate is a sample taken randomly from the submitted survey being analyzed and are not unrelated samples taken from some large stockpile of bulk material. In the Organics laboratory an equal portion of this sieved sample, or pulp, is taken and analyzed in the same manner using the Gas Chromatography/Mass Spectrometer. The comparison of laboratory replicate and field duplicate results for chemical tests in the parts-per-million or even parts-per-billion range has typically been done using an absolute "relative percent difference (RPD)" statistic which is an easy proxy for error estimation rather than a more complete analysis of precision as specified by Thompson and Howarth. An RPD statistic is not appropriate for SGH results as the reporting limit for SGH is *1 part-per-trillion*. Further, *SGH is a semi-quantitative technique* and was not designed to have the same level of precision as other less sensitive geochemistry's as it is only used as an exploration tool and not for any assay work. SGH is also designed to cover a wide range of organic compounds with an unprecedented 162 compounds being measured for each sample. In order to analyze such a wide molecular weight range of compounds, sacrifices were made to the variability especially in the low molecular weight range of the SGH analysis. The result is that the first fifteen SGH compounds in the Excel spreadsheet is expected to exhibit more imprecision than the other 147 compounds. An SGH laboratory replicate is a large set of data for comparison even for just a few pairs of analyses. Precision calculations using a Thompson and Howarth approach should only be used for estimating error in individual measurements, and not for describing the average error in a larger data set. In geochemical exploration geochemists seek concentration patterns to interpret and thus rigorous precision in individual samples is not required because the concentrations of many samples are interpreted collectively. For these reasons recent and independent research at Acadia University in Canada promote that a percent Coefficient of Variation (%CV) should be used as a universal measurement of relative error in all geochemical applications. As SGH results are a relatively large data set for nearly all submissions, %CV is a better statistic for use with SGH. By using %CV, the concentration of duplicate pairs is irrelevant because the units of concentration cancel out in the formation of the coefficient of variation ratio. For SGH, the %CV is calculated on all values ≥ 2 ppt. These values are averaged and represent a value for each pair of replicate analysis of the sample. All of the %CV values for the replicates are then averaged to

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report one %CV value to represent the overall estimate of the relative error in the laboratory sub-sampling from the prepared samples, and any instrumental variability, in the SGH data set for the survey. Actlabs' has successfully addressed the analytical challenge to minimize analytical variability for such a large list of compounds. Thus as SGH is also interpreted as a signature and is solely used for exploration and not assay measurement, the data from SGH is *"fit for purpose"* as a geochemical exploration tool.

Historical SGH Precision

In the general history of geochemistry, studies indicate that a large component of total measurement error is introduced during the collection of the initial sample and in sub-sampling, and that only a subordinate amount of error in the result is introduced during preparation and analysis. A historical record encompassing many projects for SGH, including a wide variety of sample types, geology and geography, shows that the consistency and precision for the analysis of SGH *is excellent* with an overall precision of 6.8% Coefficient of Variation (%CV). When last calculated, this number had a range of a maximum of 12.4% CV, a minimum of 3.0% CV, with a standard deviation of 1.6%, in a population made up of over 400 targets (over 45,000 samples) interpreted since June of 2004. Again the precision of 6.8% CV included all of the sample types as soil from different horizons, peat, till, humus, lake-bottom sediments, ocean-bottom sediments, and even snow. When field duplicates have been revealed to us, we have found that the precision of the field duplicates are in the range of about 9 to 12 %CV. As SGH is interpreted using a combination of compounds as a chemical "class" or signature, the affect of a few concentrations that may be imprecise in a direct comparison of duplicates is not significant. Further, projects that have been re-sampled at different times or seasons are expected to have different SGH concentrations. The SGH anomalies may not be in exactly the same position or of the same intensity due to variable conditions that may have affected the dispersion of different pathfinder classes. However, the SGH "signature" as to the presence of the specific mix of SGH pathfinder classes will definitely still exist, and will retain the ability to identify the deposit type and vector to the same target location.

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APPENDIX "F"
SGH DATA INTERPRETATION

SGH Interpretation Report

All SGH submissions must be accompanied by relative or UTM coordinates so that we may ensure that the sample survey design is appropriate for use with SGH, and to provide an SGH interpretation with the results. In our interpretation procedure, we separate the results into 19 SGH sub-classes. These classes include specific alkanes, alkenes, thiophenes, aromatic, and polyaromatic compounds. Note that none of the SGH hydrocarbons are "gaseous" at room temperature and pressure. The classes are then evaluated in terms of their geochromatography and for coincident compound class anomalies that are unique to different types of mineralization. Actlabs uses a six point scale in assigning a subjective rating of similarity of the SGH signatures found in the submitted survey to signatures previously reviewed and researched from known case studies over the same commodity type. Also factored into this rating is the appropriateness of the survey and amount of data/sample locations that is available for interpretation. This rating scale is described in detail in the following section.

SGH PATHFINDER CLASS MAGNITUDE

The magnitude of any individual concentration or that of a hydrocarbon class *does not imply* that the data is of more importance or that mineralization is of higher quantity or grade. SGH interpretation must use the review of the combination of specific hydrocarbon classes to make any interpretation.

GEOCHEMICAL ANOMALY THRESHOLD VALUE

In the interpretation of "inorganic" geochemical data one of the determinations to be made is to calculate a "Threshold" value above which data is considered anomalous. This is done on an element by element basis. In the interpretation of this "organic" geochemical data this determination is done differently. The determination of a threshold value is not calculated for each hydrocarbon compound. The determination of a threshold value is also a concentration below which geochemical data is considered as "noise" for the purposes of geochemical interpretation. As discussed, SGH uses a "Reporting Limit" instead of some type of Detection Limit. The amount of noise that is already eliminated in the data, as below the Reporting Limit of 1 part-per-trillion (shown in the data spreadsheet as "-1" as "not-detected at a Reporting Limit of 1 ppt") is equivalent to approximately 5 standard deviations of variability. *To thus calculate an additional Threshold Value is a loss of real and valuable data.* Further, in the interpretation of SGH data, individual compounds are not considered (unless explicitly mentioned in the report). The interpretation of SGH data is exclusively conducted by "compound chemical class" which is the sum of four to fourteen individual hydrocarbons in the same organic chemical class as these compounds naturally have the same chemical properties that ultimately define their spatial dispersion characteristics in their rise from a mineral target through the overburden. This combined class is more reliable than the measurement of any one compound. SGH also eliminates the need for a Threshold value determination above the Reporting Limit due to the "high specificity" of the specific hydrocarbons and the classes they form. Each of the hydrocarbons has been hand selected due to their lower probability of being found in general surface soils. Further, only those classes where the majority of the compounds are detected above the Reporting Limit are considered in the interpretation. This defines the SGH geochemistry as having less geochemical noise due to the use of a reporting limit and as having higher confidence in the use of groups (classes) of data instead of

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individual compounds. However the most important aspect of interpretation is the use of a forensic signature. At least three specific "Pathfinder" classes, based on the combinations or template of classes we have developed, must be present to define the hydrocarbon signature to confidently predict the presence of a specific type of mineral target. *Do not calculate another Threshold value*. **Fact:** It has been proven many times that important SGH anomalies that depict mineralization at depth can exist even with data at 3 ppt.

Mobilized Inorganic Geochemical Anomalies

It is important to note that SGH is essentially "blind" to any inorganic content in samples as only *organic* compounds as hydrocarbons are measured. Thus inorganic geochemical surface anomalies that have migrated away from the mineral source, and thus may be interpreted and found to be a false target location, is not detected and does not affect SGH results. This fact is of great advantage when comparing the SGH results to inorganic geochemical results. If there is agreement in the location of the anomalies between the organic and inorganic technique, such as Actlabs' Enzyme Leach, a significant increase in confidence in the target location can be realized. If there is no agreement or a shift in the location of the anomalies between the techniques, the inorganic anomaly may have been mobilized in the surficial environment.

The Nugget Effect

As SGH is "blind" to the inorganic content in the survey samples, any concern of a "nugget effect" will not be encountered with SGH data. A "nugget effect" may be of a concern for other inorganic geochemical methods from surveys over copper, gold, lead, nickel, etc. type targets.

SGH DATA LEVELING

The combination of SGH data from different field sampling events has rarely required leveling in order to combine survey grids. The only circumstances that have occasionally required leveling has been the combination of samples that are very fine in texture, thus having a combined large surface area to samples of peat that may be in nearby areas. Even after maceration of the peat and in using the maximum size of sample amenable to this test method, peat samples have a significantly lower surface area. Peat samples have only required leveling in one survey in the last 500 SGH interpretations.

In only the last year it has been observed that SGH data *may* require leveling when different field sampling events have significantly different soil temperature. It has been documented that only when "soil" samples are taken from "frozen" ground that data leveling may be required as frozen sample act as a frozen cap to the hydrocarbon flux and may collect a higher concentration of hydrocarbon compounds compared to sampling during seasons where the samples are not frozen. Only two surveys have required leveling in the last 500 SGH interpretations.

The author has taken introductory training in the leveling of geochemical data. If leveling is required, both data sets are reviewed in terms of maximum, minimum and average values for each SGH Pathfinder Class intended for use in the interpretation. Data is sectioned into quartiles and each section is assigned specific leveling factors that are then applied to one data set. It should be noted that any type of data leveling is an approximation.

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APPENDIX "G"
SGH RATING SYSTEM DESCRIPTION

To date SGH has been found to be successful in the depiction of buried mineralization for Gold, Nickel, VMS, SEDEX, Uranium, Cu-Ni-PGE, IOCG, Base Metal, Tungsten, Lithium, Polymetallic, and Copper, as well as for Kimberlites, Coal Seam, Wet Gas and Oil Plays. SGH data has developed into a dual exploration tool. From the interpretation, a vertical projection of the predicted location of the target can be made as well as a statement on the rating of the comparability of the identification of the anticipated target type to that from known case studies, as an example: if the client anticipates the target to be a Gold deposit, what is the rating or comparability that the target is similar to the SGH results over a Gold deposit in Nunavut, shear hosted and sediment hosted deposits in Nevada, or Paleochannel Gold mineralization in Western Australia.

- **A rating of "6"** is the highest or best rating, and means that the SGH classes most important to describing a Gold related hydrocarbon signature are all present and consistently vector to the same location with well defined anomalies. To obtain this rating there also needs to be other SGH classes that when mapped lend support to the predicted location.
- **A rating of "5"** means that the SGH classes most important to describing a Gold signature are all present and consistently describe the same location with well defined anomalies. The SGH signatures may not be strong enough to also develop additional supporting classes.
- **A rating of "4"** means that the SGH classes most important to describing a Gold signature are mostly present describing the location with <u>well</u> defined anomalies. Supporting classes may also be present.
- **A rating of "3"** means that the SGH classes most important to describing a Gold signature are mostly present and describe the same location with <u>fairly well</u> defined anomalies. Some supporting classes may or may not be present.
- **A rating of "2"** means that some of the SGH classes most important to describing a Gold signature are present but a predicted location is difficult to determine. Some supporting classes may be present
- **A rating of "1"** is the lowest rating, and means that one of the SGH classes most important to describing a Gold signature is present but a predicted location is difficult to determine. Supporting classes are also not helpful.

The SGH rating is directly and significantly affected by the survey design. Small data sets, especially if significantly <50 sample locations, or transects/surveys that are geographically too short *will automatically receive a lower rating no matter how impressive an SGH anomaly might be*. When there is not enough sample locations to adequately review the SGH class geochromatography, or when the sample spacing is inadequate, or if the spacing is highly variable such that it biases the interpretation of the results, then the confidence in the interpretation of any geochemistry is adversely affected. The SGH rating is not just a rating of the agreement between the SGH pathfinder classes for a particular target type; it is a rating of the overall confidence in the SGH results from this particular survey. The interpretation is only based on the SGH results without any information from other geochemical, geological or geophysical information unless otherwise specified.

HISTORY & UNDERSTANDING

The subjective SGH rating system has been used since 2004 when Activation Laboratories started providing an SGH Interpretation Report with every submission for SGH analysis to aid our clients in understanding this organic geochemistry and ensuring that they obtain the best results for their

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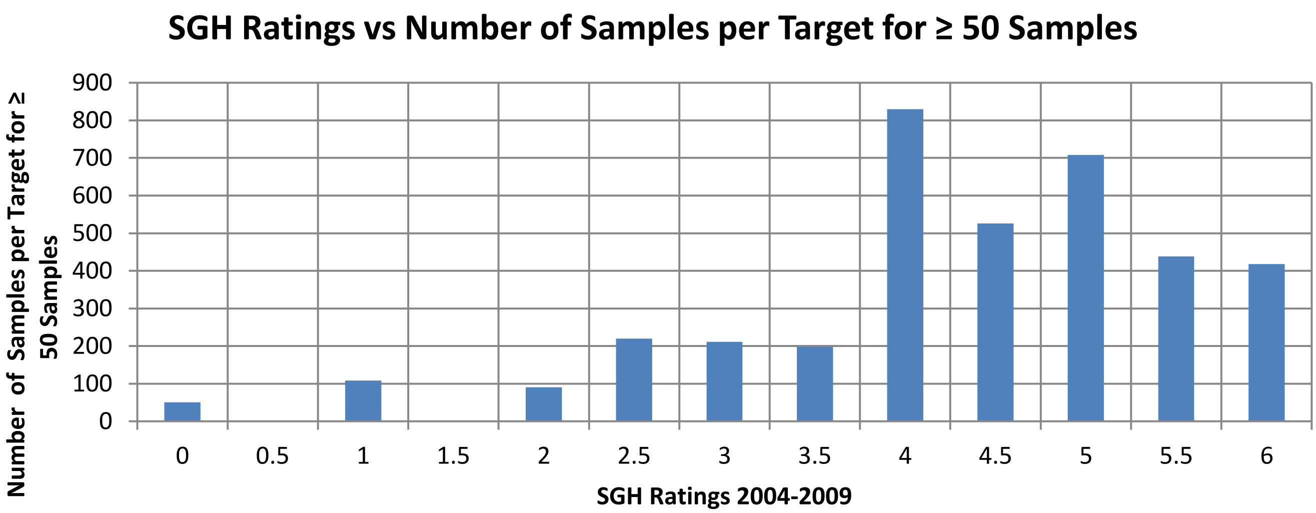
surveys. As explained in the previous section, the SGH rating is not just a rating of how definitive an SGH anomaly is, and it is not based just on the map(s) provided in this report. It is a rating of "confidence in the interpreted anomaly" from the combination of:

- (i) are the expected SGH Pathfinder Classes of compounds present from the template for this target type (one Pathfinder Class map is shown in the report, at least three must be present to adequately describe the correct signature for a particular target),
- (ii) how well do these SGH Pathfinder Classes agree in describing a particular area,
- (iii) how well does this agreement compare to SGH case studies over known targets of that type,
- (iv) how well is the interpreted anomaly defined by the survey (i.e. a single transect does not provide the same confidence as a complete grid of samples), and
- (v) is there at least a minimum of 50 sample locations in the survey so that there may be an adequate amount of data to observe the geochromatography of the different SGH Pathfinder Class of compounds.

The question often arises by clients as to the frequency of a rating, e.g. "how often is a rating of 5.0 given in an interpretation". To better understand this we present this review of the history of the SGH rating program since 2004 and some of the underlying situations that can affect the historical rating charts. Originally it was recommended that a minimum of 35 sample location be used for small target exploration, however it was quite quickly realized that this is often insufficient and at least 50 sample locations were required. In 2007 the rating scale was refined to include increments of 0.5 units rather than just integer values from 0 to 6.

A rating frequency may be biased high as most clients conduct an orientation study over a known target, thus several of these projects result in high ratings. Note that, at this time, the rating is not said to be linked to grade of a deposit or depth to the target. Even in exploration surveys clients tend to submit samples over more promising targets due to knowledge of the geology and prior geochemical or geophysical results. As shown in the following chart, projects with SGH data from 200 or more sample locations have a higher level of confidence in the interpretation as the geochromatography of the SGH Pathfinder Classes of compounds can be more completely observed and reviewed.



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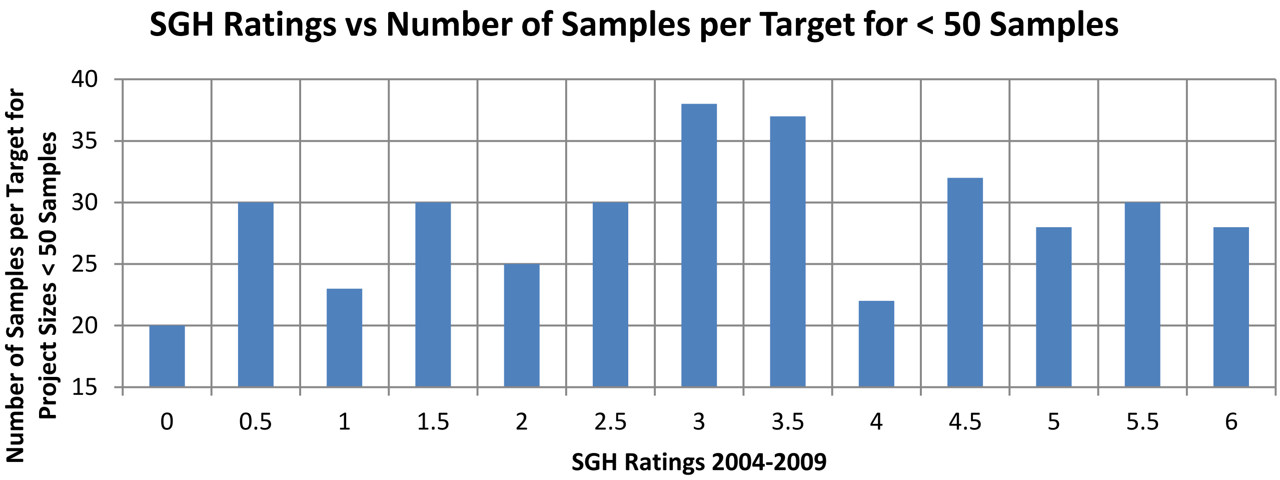
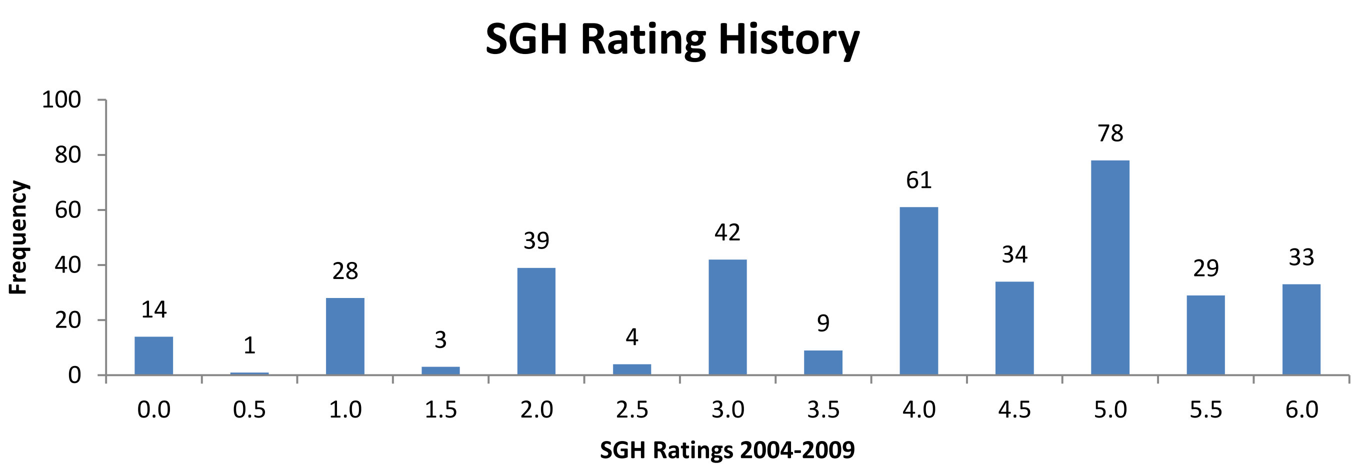
The rating frequency may be biased low as research projects often include a bare minimum of samples to reduce costs. Research projects may also be over targets known to be difficult to depict with geochemistry. Multiple targets in close vicinity in a survey may result in a low bias as the Pathfinder Class geochromatography is more difficult to deconvelute. Ratings may also be biased low if less than the recommended 50 sample locations are submitted as indicated by the following chart. This chart also illustrates that there is no interpretation bias to a particular rating value.



The overall rating frequency for over 400 targets from January 2004 to December 2009 is shown in the chart below illustrating that surveys over more promising targets are most often submitted for best use of research or exploration dollars. It also indicates that the 0.5 increments were less frequent as they started in 2007.



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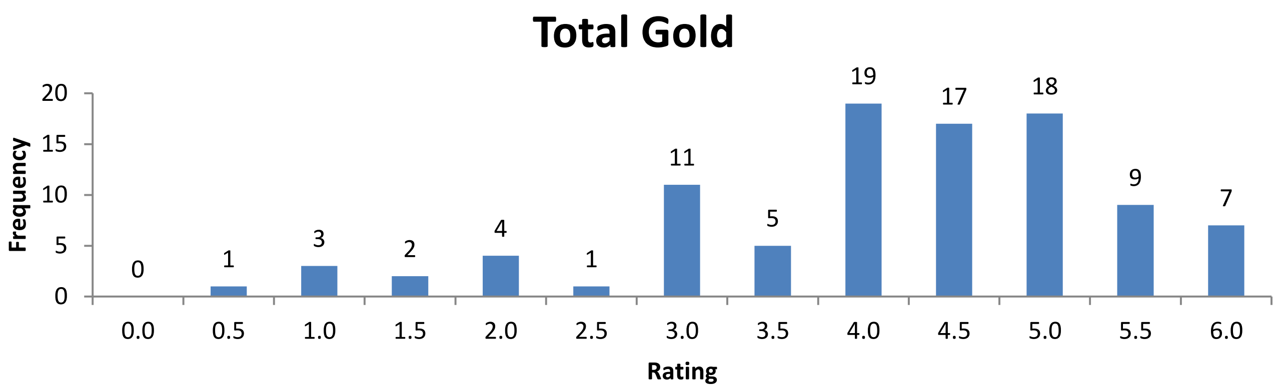
More specific for SGH interpretation for Gold targets, the overall rating frequency for 97 targets from January 2004 to December 2009 is shown in the chart below that also illustrates that surveys over more promising Gold targets are most often submitted for best use of research or exploration dollars.



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APPENDIX "H"

NOTE: THERE IS NEW PRICING FOR THE SGH GEOCHEMISTRY

SAMPLE PREPARATION: CODE SGH-1 - $4.50 per sample

INTERPRETATION FOR ONE COMMODITY TARGETS: Included in the price of analysis of $50.40 per sample

INTERPRETATION FOR MULTI-COMMODITY TARGETS: i.e. VMS, SEDEX, Polymetallic, IOCG, IOCGU, Cu-Au-Porphyry, etc. – add additional price of $525 is applied to cover the additional time in interpretation.

"ADDITIONAL INTERPRETATIONS": ($ 525.00) - if within 60 days after delivery of the report.

The SGH data can be interpreted multiple times in comparison to a variety of SGH templates developed for exploration for different mineral targets or petroleum plays. The samples do not have to be reanalyzed. This can be addressed as a separate section of a report or as a separate report based on the client's wishes. The price is per survey area, e.g. if there are two projects in a submission, perhaps a North area and South area, and both survey areas are to be interpreted for say Gold and Copper, the first interpretation is included in the SGH analysis price, the second interpretation for each area would be priced at $525 per area, thus a total of $1050.

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PREP-31

Standard Sample Preparation: Dry, Crush, Split and Pulverize

Sample preparation is the most critical step in the entire laboratory operation. The purpose of preparation is to produce a homogeneous analytical sub-sample that is fully representative of the material submitted to the laboratory.

The sample is logged in the tracking system, weighed, dried and finely crushed to better than 70 % passing a 2 mm (Tyler 9 mesh, US Std. No.10) screen. A split of up to 250 g is taken and pulverized to better than 85 % passing a 75 micron (Tyler 200 mesh, US Std. No. 200) screen. This method is appropriate for rock chip or drill samples.

Method Code	Description
LOG-22	Sample is logged in tracking system and a bar code label is attached.
CRU-31	Fine crushing of rock chip and drill samples to better than 70 % of the sample passing 2 mm.
SPL-21	Split sample using riffle splitter.
PUL-31	A sample split of up to 250 g is pulverized to better than 85 % of the sample passing 75 microns.

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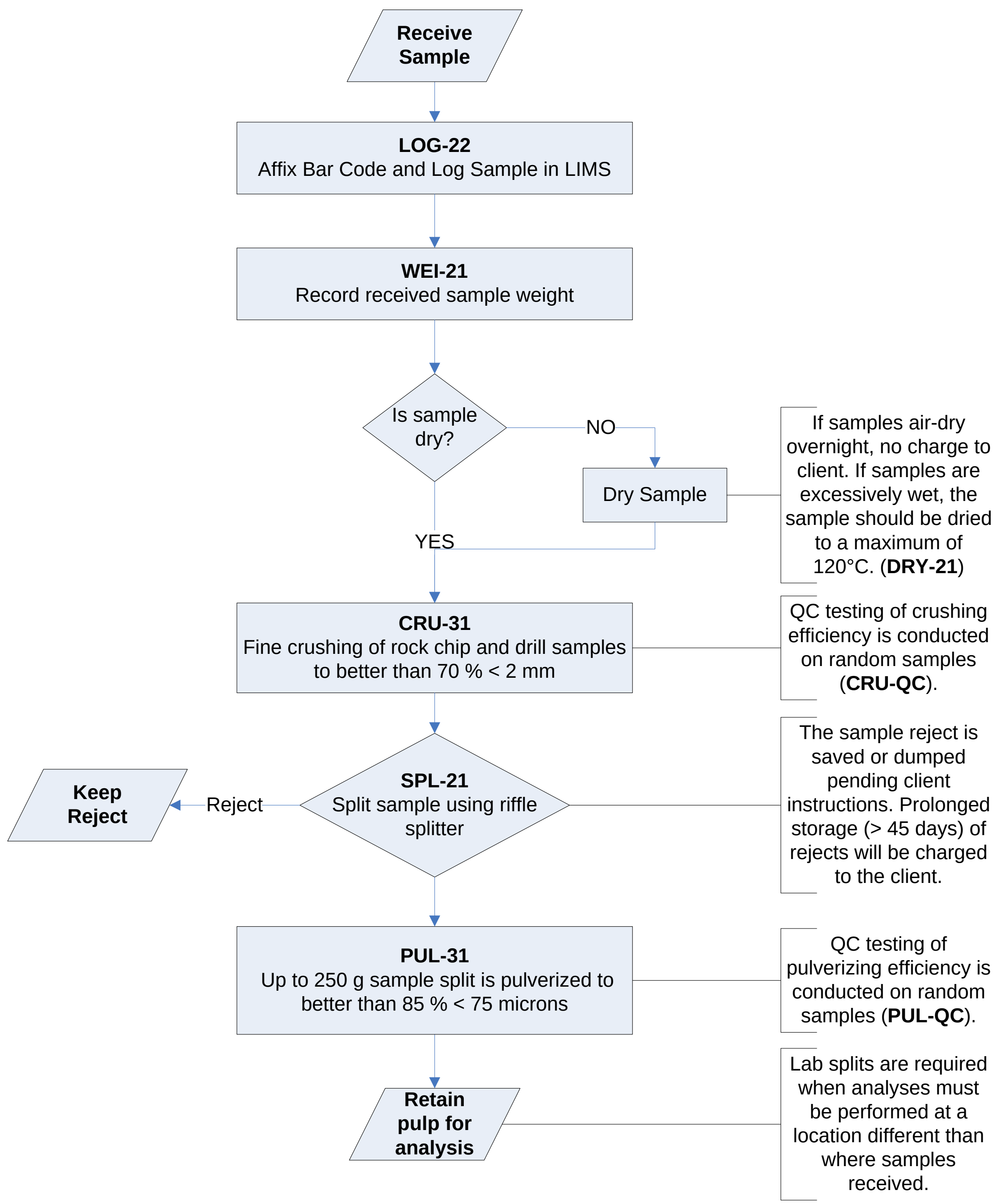
Flow Chart - Sample Preparation Package – PREP-31
Standard Sample Preparation: Dry, Crush, Split and Pulverize



Cu-PKG06LI

Cu Sequential Leach – For Determination of Sulphuric Acid Soluble, Cyanide Soluble and Residual Copper

Sample Decomposition:

ASY-CuSE01

Analytical Method:

Atomic Absorption Spectroscopy (AAS)

The sequential leach package is comprised of 3 steps to report sulphuric acid soluble, cyanide soluble and residual Cu. The mineral dissolution in each leach may vary depending on the sample matrix and specific mineralogy.

Method Code	Analyte	Units	Lower Limit	Upper Limit
Cu-AA06s	Cu	%	0.01	100
Cu-AA16s	Cu	%	0.01	100
Cu-AA62s	Cu	%	0.01	50

Cu-AA06s

Copper oxide minerals such as malachite, azurite, chrysocolla and portions of cuprite and tenorite can be leached using sulphuric acid (referred to as ‘acid soluble copper). A prepared sample (0.5g) is leached with 20 ml of 5% sulfuric acid, agitated for an hour, the leach solution is subsequently separated from the solid sample and analyzed by AAS

Cu-AA16s

Cyanide leach will dissolve the secondary chalcocite, covellite, bornite and a portions of the chalcopyrite content of the sample. The solid residue from acid leach above is treated with 20ml of 10% NaCN, agitated for 30 minutes, the solution is quantitatively separated from solids and analyzed by AAS.

Cu-AA62s

The four-acid digestion dissolves residual sulphides and other minerals. The final residue is evaporated to incipient dryness and digested with nitric, perchloric, hydrofluoric and hydrochloric acids until near dryness. The sample is subsequently leached with hydrochloric acid for a short period of time and analyzed by atomic absorption spectrometry against matrix-matched standards.

Geofacts Consulting
Copper Island SGH Project

SGH Units – ppt (Parts-per-trillion)

	SGH-Copper
101	635
102	500
103	453
104	914
105	513
105-R	587
106	392
107	549
108	296
109	357
110	300
111	745
112	696
113	299
114	645
115	407
116	389
117	447
118	992
119	941
120	329
120-R	231
121	1495
122	459
123	937
124	523
125	731
126	465
127	476
128	478
129	558
130	446
131	368
132	364
133	217
134	117
135	430
135-R	423
136	497
137	445
138	294
139	705
140	823
141	607
142	394
143	613
144	430

145	539
146	703
147	205
148	357
149	490
150	800
150-R	494