

005453

SOOKE COPPER-NICKEL GROUP

92B/5E

92B-78,9,10

PROPERTY

Previously known as Iron Mine Hill, Willow Grouse, Copper King or Margaret and Old Copper Mine now known as:

1. Cooke Zone (Willow Grouse)
2. Huestis Zone (Margaret or Copper King)
3. Merryth Zone (Iron Mine Hill)
4. Griffith Zone (Old Copper Mine)

LOCATION

Approximately 20 miles S.W. of Victoria, Vancouver Island, British Columbia.

ELEVATIONS

Sea Level to 850 feet above, which is highest summit in the area.

OWNERSHIP

F. Cooke; H.H. Huestis; Frank Merryth; and George Griffith. All of Vancouver, B.C.

TRANSPORTATION

1. Paved highway for 16 miles, balance of 4 miles in good gravel road or a total of 20 miles from Victoria, B.C.
2. Good harbours for 500-ton freighters.
3. C.N.R. railway within 4 miles of property.

POWER

B.C. Electric Hydro-Power within 2 miles of property.

PRECIPITATION

Not over 50 inches of rainfall per year - snowfall an unusual occurrence.

OVERBURDEN

Not over 3 feet except in zone where it could be up to 20 feet.

OUTCROPS

About 10 to 15 per cent of mass.

PROPERTY FILE

MINERAL CLAIMS

Held by Crown grants and staked, 46. 14 other claims adjoin our group.

MAPS accompanying report:

1. Vancouver Island, southern half. 4 miles - 1"
2. Photostat Map showing geology and mineral claims and location of zones. Scale 1" = 2000'
3. Mineralized zones and Breaks on Sooke Peninsula. Data from aerial photos - Scale 1" = 1650'
4. Claim Map
5. East Sooke Geological Map 1674 by Cooke.
6. Sooke Sheet, Map 44-A by Clapp.

PREVIOUS GOVERNMENT REPORTS

Reports of Progress: Vol. I p. 40 A
 II 19 T, 20 T
 III 102 R, 151 T
 IV 59 A, 60 H, 76 H.
 85 A.

Dom. Geological Survey Reports:

1908 - pages 57, 60
 1912 " 41, 54
 1913 " 106, 108

Memoirs: No. 13 (Southern Vancouver Island) -
 No. 96 (Sooke and Duncan Map Views) -

Geological Survey Publications: No. R1085 - p. 136.

Provincial Mines Reports:

1874	page	36	1907	page	154	1916	page	280 - 366
1888	"	324-5	1912	"	198	1928	"	361 362
1893	"	1079	1913	"	291	1929	"	368
1902	"	220	1914	"	386	1930	"	287
1904	"	220	1915	"	290	1931	"	161 -
		254						
		256						

SHIPMENTS

Cooke Zone - 1915, 1916, 1918, 1413 tons
 Grade - Cu 4.75%, Au .02 oz. Ag .02 oz.

Huestis Zone - 1917, 1918 - 559 tons.
 Grade - Cu 3.90%, Au .01 oz. Ag .02 oz.

1. COOKE ZONE (Willow Grouse)

Location: about 2000 feet south of highway. Old wagon road to property.

Elevation: 357 feet above sea level.

Mineralization: Mostly chalcopyrite with minor amounts of pyrrhotite, magnetite and molybdenite.

Gangue: Hornblende, Chlorite, feldspar and quartz.

Strike: Northeasterly

Dip: 75° N.W.

Width: At least 100 feet.

Length: Mineralization picked up for 500 feet. Zone continues for an undetermined length.

Quote: W.M. Brewer, B.C. Dept. of Mines, 1904, 254, 25.

"The occurrence of a fissure zone fully 100 feet wide and of undetermined length has been fully established. Within this zone occur not only several extensive lenses or pockets of high grade chalcopyrite, but the green basic rock, which is really the matrix of the ore, is found to be thoroughly impregnated with masses and grains of chalcopyrite deposited as sheets and elongated kidneys. That the lenses of solid ore in this zone possess extent is demonstrated by the fact that the main showing of ore, which carried 11 to 18 per cent copper, is exposed in a deep open cut and shaft, at upwards to 70 feet in length, with solid ore still showing at north end of cut, and from 4 feet in width at the north end to about 11 feet in width at the south end. Surface stripping beyond the deep cut at the north end shows that the lenses occur lying en echelon to the one referred to, and these show an aggregate width of nearly 15 feet. At the south end of the open cut a vertical shaft has been sunk 50 feet in ore, and a crosscut tunnel has been driven from the bottom of the shaft towards the hang-wall, or western boundary of the ore-bearing zone.

At the time of the writers visit he was unable to make an examination of underground workings, as they were full of water, however, when I visited the property in 1902 I saw the shaft being sunk in ore."

Quote: Geo. Clothier, B.C. Dept. of Mines 1931 - p. 161.

The minerals occur throughout the gangue, chiefly hornblende, or in lenses 6 to 7 feet wide of clean chalcopyrite. An

open cut about 125 feet long shows that these lenses of chalcopyrite have been mined from the surface in this small area. Old reports state that about 1000 tons of 6 percent copper ore was shipped from these lenses, and that hand sorting later produced another 300 to 400 tons. It would seem reasonable to expect other lenses similar to those mined out, and therefore that close surface prospecting would be fully justified and possibly diamond drilling at the encouraging places."

Quote: H.C. Cooke, Dom. Geol. Survey Memoir 96, p. 327, p. 328.

"The ore is developed in a shear zone 50 to 100 feet wide having a strike of N. 40° E. The entire shear zone is not, however, hornblendized or mineralized, but is subdivided into subsidiary shear zones of which only those close to the N.W. wall are well exposed, these are 6 feet, 15 feet and 20 feet wide. They are nearly parallel to the main shear zone, but vary somewhat in strike and dip steeply to the N.W. at an angle of about 70 degrees. The ore mined in chalcopyrite, and occurs disseminated through all the subsidiary shear zones, although best developed in those along N.W. wall. The principal deposit is exposed for a distance of 150 feet in a caved stope and in an open cut adjoining the stope. Five hundred feet to the S.W. mineralized rock is exposed in a shallow pit, and it is probable that the zone between the two exposures is mineralized."

I (the writer) visited the property near the end of November 1947. About 5000 tons of low grade ore was observed on the dump, and this could assay from around 1.75% to 2% copper. The underground workings were filled with water.

One the hang-wall side of zone at the North face showed about 3% copper ore, having an approximate width of 20 feet.

About 500 feet S.W. some good chalcopyrite mineralization was noted on the dump from a shallow pit. Part of the zone fills a strong depression, being covered with overburden. Only picked samples were taken to make tests for Nickel, Cobalt and Platinum.

ASSAYS: By Dept. of Mines, Victoria, B.C.
Spectrograph-Specimens.

No. 4 Chalcopyrite in an altered basic rock.
Cu 6%, Nickel .30%, Cobalt .20%, Molybdenum

No. 5 Massive chalcopyrite in an altered basic rock.
Cu 11%, Nickel .30%, Cobalt .30%, Molybdenum .20%

ASSAY: Similar to No. 5.
Cu 11.30%, balance of assays for gold, silver, platinum, nickel and cobalt are not completed at this time.

2. HUESTIS ZONE (Margaret)

Elevation: 450 feet above sea level

Location: About 1 mile south of highway with a possible gazetted road to the showing.

Mineralization: Chalcopyrite, with minor amounts of pyrrhotite and magnetite.

Gangue: Hornblende, chlorite, Felspar and considerable quartz.

Width: 250 feet

Length: Mineralization along 1000 feet zone continuous for at least 4500 feet

Strike: N. Easterly.

Dip: 85° S.E.

Quote:

W.M. Brewer, B.C. Dept. of Mines, 1917 - 262-263-264.

"The portion of massive ore as contrasted with waste exposed in the workings examined by the writer appears to be about 75% good ore to 25% waste.

The ore occurrences of copper ore that have been so far developed occur in a shallow gulch or depression of variable width that appears to extend through the three claims, and appears to have been formed by erosion, which acted on the mineralized part of the shear zone, as this rock offered less resistance than the part of the gabbro-country-rock in which the shearing action had been less pronounced.

At the N. Easterly or upper end of the gulch there is a large swamp, in which is exposed a body of almost solid ore opened by a shaft 25 feet deep and an open cut for a length of more than 200 feet, a width of about 12 feet in the N.E. end of the cut and to a depth of 25 feet below the level of the surface outcropping at this point.

A short distance to the S.W. and in the same open cut the ore-bearing gabbro has been proven to reach a width of 40 feet. When the open cut was first made it appeared as though the foot wall of the ore body was exposed on the northwesterly side, and in sinking the shallow shaft this so-called wall was made on one side of it, but later it was discovered that the wall was only the cleavage plane of a fracture in the shear zone, and when

blasted into, the solid ore was exposed beyond it. By a series of open cuts made towards the northwesterly side of the gulch, and into the rock that had suffered less from erosion, a still greater width of ore-bearing gabbro is exposed and at the time of examination the full width of the ore body on this portion of the property was undetermined.

In an adit to cross-cut the orebody at a point about 250 feet southwesterly from the shaft mentioned, a well-defined hanging wall occurs near the portal of the adit, dipping at about a vertical angle and striking northeasterly, conformable with the strike of the orebody exposed in the open cut already referred to. From the hanging wall, the ore body is cross cut for 10 feet, with the whole face of the cross cut in ore. Drifts are driven in both directions at right angles to the cross cut for a total of about 25 feet in length. The drifts are in solid ore with both faces in ore. About 1000 feet southwesterly from the adit there are located some old workings, the chief of which is a shaft, said to be 25 feet deep, now full of water. This shaft was sunk on an outcrop of hornblende, through which are disseminated lumps, grains and small particles of chalcopryite, and apparently the shaft is sunk in an extension of the shear zone in which the ore occurs. In addition to the old workings, there is an open cut 176 feet long which cross cuts the shear zone at this point and exposes low grade concentrating copper minerals, mainly chalcopryite, disseminated through the hornblende, country rock the entire length of the open cut, demonstrating the Clapp's estimate of the width of the shear zone, in the following paragraph from his report published in 1912 (Memoir 13) being about 200 feet, is well established.

Quote: Clapp

"On the southern slope of Mount Maguire are three claims - Margaret, Copper King and Eureka - located on a wide shear zone some 200 feet wide, having a strike of N. 43° E. which is traceable for the whole length of the three claims. As a rule the metallic minerals, chiefly chalcopryite, are disseminated throughout the entire shear zone, with the best values along the N.W. walls. Occasionally the chalcopryite occurs in small lenses and veins. Quartz stringers are very abundant."

Quote - H.C. Cooke, Memoir 96, p. 328

"The zone is intersected near the southwestern boundary of the Copper King claims by a smaller shear zone about 100 feet wide, striking N. 10° E. As a rule the metallic minerals, chiefly chalcopryite, are disseminated throughout the shear zone. Occasionally chalcopryite occurs in small lenses and veins and numerous quartz veins. Extensive mineralization is exposed only near the intersection of the two shear zones; the N. 10° E. zone is mineralized for about 1000 feet north of the intersection, although the outcrops are not continuous. Samples from the shear zone range from 1% to 6% of copper."

Huestis

I visited the property near the end of November 1947. About 1000 tons of ore are on the dumps; average grade might be around 2% copper. The workings are in good condition; the cross-cut tunnel has been driven another 58 feet since Mr. Brewers' examination in 1916. Chip samples and specimens were taken only for tests.

Assays: by Dept. of Mines, Victoria, B.C.

Spectrograph

Specimens

- No. 1 Pyrrhotite and chalcopyrite and limonite in altered basic rock. Cu 0.30%, Nickel 0.60%, Cobalt 0.20%.
- No. 2 Chalcopyrite with small amount of pyrrhotite in altered basic rock.
Cu 5.0%, Nickel 0.30%, Cobalt 0.20%
- No. 3 Sheared basic rock, few specks chalcopyrite
Cu 0.30%, Nickel 0.05%
- No. 6 Altered hornblendite, no mineral observed.
Cu 0.40%, Nickel 0.05%

Note: All samples contain more than 10% magnesium oxide.

Assay by G.S. Eldridge & Co.

- Huestis No. 2 Chips from hanging wall section of crosscuts.
Cu 2.30%, Au .04 oz., Ag tr.
- Huestis No. 1 Channel across 10 feet of gouge at end of cross cut (no mineralization noted)
Cu 1.7%
- Huestis No. 3 Across 110 feet in open cut above cross cut.
Cu 1.5%, Au .01 oz., Ag tr.

MERRYTH ZONE (Iron Mine Hill) (Massive Deposit)

- Elevation: Sea level to 100 feet above
- Location: S.W. corner of Sooke Peninsula; road within a mile of property, good trail balance of way.
- Mineralization: Mostly pyrrhotite, minor amounts of chalcopyrite and magnetite.
- Gangue: Hornblende

Width: 200 Feet
Length: Mineralization over a distance of 2000 feet; zone
Length undetermined.

Quote H.C. Cooke - Memoir 16, page 326.

"A second type of mineral deposit, very subordinate both as regards quantity and value, is the magnetite-pyrrhotite deposits.

These deposits might be formed at two periods in the history of the consolidation of the stock. They might have resulted from the early separation and aggregation of iron minerals from the body of the gabbro-magma, as at Sudbury, and thus in age antedate the consolidation of nearly all its other phases; or they may have been formed in the last stages of differentiation at the time of the formation of the hornblendite veins, and the waters that formed there have been laden with excess of iron. This deposit is found in a large shear zone in the form of lenses greatly cracked and cut by later depositions of chalcopyrite. The chief value of the property in the past has been as an iron flux in copper smelting."

Huestis: A few grab samples were taken from the dumps for assay.

Assay Dept. of Mines, Victoria, B.C.

No. 8 Mostly pyrrhotite, some chalcopyrite in basic rock.
Cu 2%

Spectograph: Cu 2.50%, Nickel .10%, Cobalt .15%

GRIFFITH ZONE (Old Copper Mine)

Elevation: Sea Level

Location: About 1 miles east of O'Brien Point in south coast
of Sooke Peninsula

Mineralization: Pyrite, chalcopyrite and minor amount of native
copper (secondary)

Gangue: Calcite, quartz and sheared hornblende

Width: 60 feet at least

Length: Undetermined: on sea zone at beach, balance of zone
filled with brush.

Strike: North (approximately)

Dip: Vertical.

Huestis:

The above property was worked on a small scale in 1864. The zone is a strong shear zone on the contact of augite gabbro and gabbro; the sheared rock is composed of a network of calcite stringers with native copper along slips within the show. On the dump several pieces of massive pyrite and chalcopyrite were seen.

Assay B.C. Dept. of Mines, Victoria, B.C.

Spectrograph Specimen

No. 9 Massive pyrite, some chalcopyrite.
 Cu 3.0%, Cobalt 0.10%, Nickel .15%

CONCLUSIONS

Throughout the report I have quoted several government engineers' reports, as they seemed more fitting for these large prospects.

Clapp even remarks, in Memoir #13, quote: "There is every reason to believe these shear zones will extend to considerable depth. Since the chalcopyrite is usually disseminated through wide zones of sheared rock, the deposits are low grade. The ore-mineral could, however, be easily concentrated, hence the deposits are of great prospective value."

From the records of ore shipments, the assays of the few samples taken by the writer, I believe ore might have an overall average of 2% copper, plus low gold and silver values. The nickel content would have to be determined after a thorough sampling job was done.

Sampling is a large job and the only satisfactory way would be by diamond drilling. This would involve some \$75,000 to \$100,000 at least. However we must realize all monies appropriated for drilling would be spent almost one hundred per cent on the property, which is unusual for, in most places, one has to spend a quarter of monies raised for roads, or transportation to the property.

The Tacoma Smelter lies only about 100 miles southeasterly of the property, which means cheap transportation via boat, probably not over 30¢ per ton of concentrates.

Labor conditions would be favourable, as mostly family men would be involved, where there are several locations for homes. Good water and power are available within five miles of the property.

The above data has been respectfully submitted by

H.H. Huestis (Mining Prospector)
January 7, 1948.