

Technical Report

Analysis, and Experimental Concentration of Metalliferous Clay
From Mineral Tenure 904489

Victoria Mining District

092C 15

UTM Co-ordinates
5414044N
389836E

Owner of Claims is Dean Arbic(133434)

Report Written by Dean Arbic

Work Performed and Supervised by Dean Arbic

Event Number
5475726

Report Date January 27 2014

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Introduction, Claim Location and History

This report documents the work performed on the mineral claims named; Constitution (904529) and Marigold (904489). These claims are located on Southern Vancouver Island in the region between Cowichan and Nitinat Lakes. The claims are situated around the headwaters of Raymond Creek which is a creek that flows into Nixon Creek.

A network of old and new logging roads crisscross this area and vehicle access is excellent to the Constitution and Marigold claims and old de-activated roads serve as adequate hiking trails to the Zodiac and Libra claims. The claims are approximately 7.5 kilometers west of the western end of Lake Cowichan. To drive to the claims you travel west from the Town of Lake Cowichan through Honeymoon Bay and take logging roads further west to the Town of Caycuse, then turn left onto Nixon Creek mainline and travel southwest for another 7 kilometers then turn north on logging spur road C5. After driving 5 more kilometers you will arrive at the Marigold and Constitution claims.

Over 50 years ago a series of claims were staked in the same area. They were called the Archer claims and the Good Gold claims and a program of geological mapping, soil sampling, trenching, test pits and drilling were conducted. Zones of magnetite, chalcopryite and pyrite were identified.

The majority of the work was done in 1964 by Avallin Mines Ltd. Then in 1969 Quintana Mines Ltd. did more soil sampling of a reconnaissance nature hoping to identify copper and molybdenum resources. In 1976 Fox Geological consultants mapped and sampled old pits and skarn zones. Then in 1983 G.A. Noel and Associates confirmed large copper mineralizations in the area.

More recently in 1988 Nuspar resources did some drilling and geological mapping and extensive assaying that revealed the presence of anomalous gold and silver and recommended further sampling of a roadside outcrops in the immediate area.

Based on that conclusion I have undertaken sampling work. And have found a site containing light blue clay. After the silt is washed off the clay, it appears to contain 60 to 70% metallic crystals. This clay is the subject of this report.

Regional Geography

Raymond Creek is just south of the area between Cowichan Lake and the Nitinat Lake. This region is characterized by the underlying formations of the Upper Triassic Vancouver Group and the Lower Triassic Bonanza Group. The Vancouver Group is made of the Karmutsen Formation which was a large thick oceanic floor of Basalt and Andesite. This ocean floor was overlain by Quatsino Limestone and then that was covered later by Argillite supposedly from the Parson Bay Formation.

More recently during the Mesozoic and Jurassic eras there has been many intrusions of Granodiorite and Andesite, and much faulting and folding creating ideal conditions for a wide range of igneous, metamorphic and sedimentary metallic minerals.

Technical Work Description

A sample of decomposing Limonite was found on this claim at UTM co-ordinates 5414044N 389836E. Areas of the Limonite were interesting because they had decomposed into blue clay. When this clay is placed in a gold pan, the white silt is quickly panned off, leaving a large percentage of metallic pieces with crystal like appearances. Some of these crystal were isolated and placed under a microscope at 100 X magnification for observation.

A "Blue bowl" was constructed to separate the clay silt from metallic particles, using the centrifugal properties achieved by creating a vortex of water to carry away lighter particles and separate them from larger or heavier elements.

Sample #	UTM Co-ord.	Description
1	5414044N 389836E	Roadside iron ore with cementation zones and a layer of blue and white clay full of striated tetrahedral crystals with a bright silver appearance approximately 250 kg removed. 5 kilograms of clay and 245 kilograms of iron cemented Limonite.

The Clay had dried since the sample were stored, so they were soaked in water. And then screened in 1.5 mm sized screens and then again in 350 micron mesh screen. Four sizes of metallic crystal were found in the clay. The largest from 1.5 mm to the next 0.5 mm and 0.25 mm and 0.02 mm.

After screening the clay was placed in the homemade blue bowl. The first run successfully separated the 0.5mm sized metallic particles from the non metallic sediment. Then the rejected material was placed back in the blue bowl and the variable potentiometer was adjusted to slow the circulation of water through the bowl and the 0.25 sized particles were captured by the bowl. 2 kilograms of material was placed in the bowl and it yielded approximately 1.4 kilograms of metallic material.

Comparing the metallic and non metallic material of the metalliferous clay reveals that it is approximately 65% metal.

Microscopic observation of these metallic particles revealed two distinct types of metallic formation. Various sizes of crystalline particles were seen. The crystals were not perfect, making identification difficult, but some sides looked like tetrahedrons, either truncated or triakis. Striated and geometric lines were also observed photos of these lines are included in this report.

The other crystals were irregular and composed of small sphericals of both metal and a silicate type white mineral mixed together.

Suggesting at least two types of metallic formation processes occurred.

Equipment and Tools Used

To separate the metallic particles from the non metallic particles a "Blue Bowl" was constructed. It consisted of readily available household products.

The materials used in the Blue Bowl are;

- One ten inch diameter Angels food cake bowl modified so center is lower than sides.
- One 500 gallon per hour 12 volt DC .5 amp. bilge pump.
- One AC/DC adapter with output of 12 volts DC 0.5 amp
- One 5 Gallon Bucket with hole cut in lid and side.
- 3/4 inch diameter PVC hose 6 inches long, and 1 inch diameter PVC hose 5 feet long.
- 2 alligator clips
- 12 volt variable potentiometer to control pump flow.
- Bungy cord

- Kitchen Sieve 350 mesh
- Plastic screen 1 mm size mesh
- Turkey Baster
- Plastic Gold Pan

To analyze the results I constructed a Digital microscope from a common Highschool Research Microscope with magnification from 100X to 900X and mounted a Genius 720 P High Definition Webcam with elastic bands to the eyepiece. and connected it to my home computer via a USB port.



Homemade "Blue Bowl"

Statement of Work and Cost

This statement of work is for the event #5475726.

October 28 2013, 3 hours work at \$40.00 per hour equals \$120.00

October 30 2013, 5 hours work at \$40.00 per hour equals \$200.00

Total for work performed.....\$320.00

I certify that this is true and correct Dean M. Arbic Jan. 27 2014
Dean M. Arbic

Conclusion and Interpretations

After examining this clay sample occurring in iron cemented limonite type mineralization, my initial finding is the apparent ease at which this deposit could be mined and processed as little or no crushing would be involved to separate the metal minerals from the others.

The metallic crystals are brilliantly glittery, and lack the brassy appearance of pyrite. Microscopic examination and the blue colour of the clay may be from copper oxides and this tends to lead me to believe the crystals may be chalcocite, or bornite with marcasite. But previous work within a kilometer of this site was done in 1988 by Nuspar Resources (Aris 17164) revealed a large number of high concentrations of metals and rare metals. Including Barium, Germanium, Niobium, Tin, Titanium and Ytterbium but no conclusions about these metals was ever made.

The majority of the particles microscopically examined fell into two categories. One is globular spheroids of mixed mineralization of metals with silicate. And the Second is pure metallic crystals with partial geometric shapes. These pure crystals fell into two groups some striated with straight lines and others with triangular indentations from crystal formation at 54 degree angles only. But both had corners where three faces meet with almost 90 degree angles, suggesting tetrahedrons.

This leads me to conclude that these crystals are a complicated form of Tetrahedrite and Tennantite, where less common metals have replaced some of the more common metals of the Tetrahedrite or Tennantite, like possibly Zinc, Niobium, Tin etc. Apparently substitutions of metals is frequent when relationships exist during the formation of Tetrahedrite and Limonite. Silver was also identified by Nuspar at a maximum of 11.5 grams per ton in core samples nearby. Tetrahedrite can have as much as 18% Silver.

These metal samples will next be experimentally smelted to see if copper or silver can be isolated and assayed. To confirm their constitution beyond any doubt.

Hardware Software and Qualifications and Sources

GPS Unit..... Magellan Explorist 100

Digital CameraCanon PowerShot A540

This report was prepared using;

OpenOffice.org 3.2 for all Text documents

Paint.NET v3.5.10 for all sketches and for labelling photographs

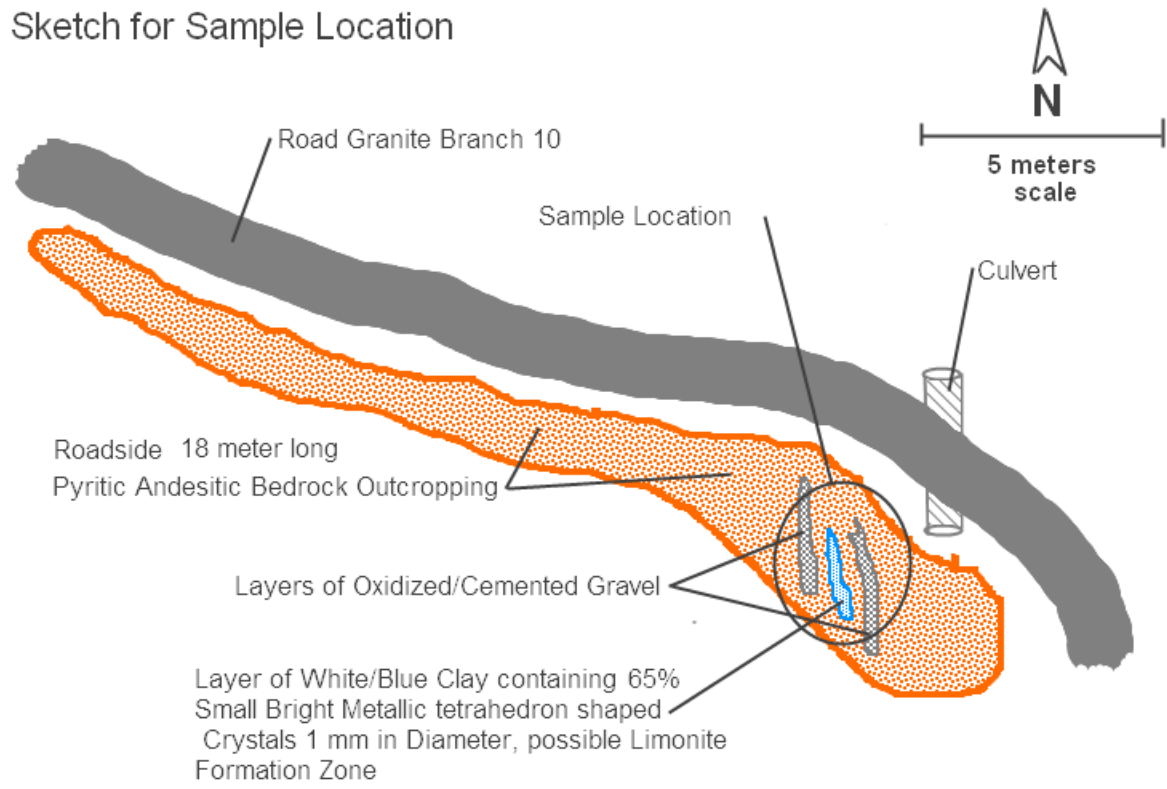
Maps were prepared using the MTO map viewer and recorded with Adobe software

IBM Desktop computer with a Microsoft Windows XP Professional Version 2002 Service Pack 3

This report was written by Dean M Arbic who has a grade 12 education from Erindale Secondary School in Ontario.

When previous work is mentioned it is referring to Aris Report 17164, "Geological and Drilling Report on the Archers I & 11 and Tatters II Mineral Claims" Nuspar Resources, Author Peter Fischl, B. Sc. February 1988.

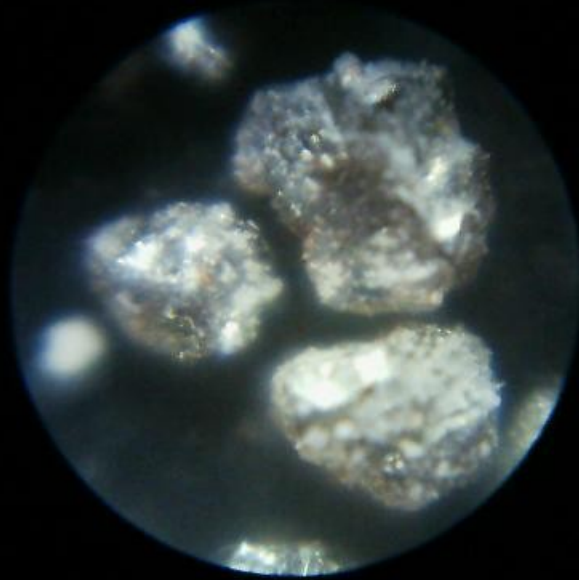
Sketch for Sample Location



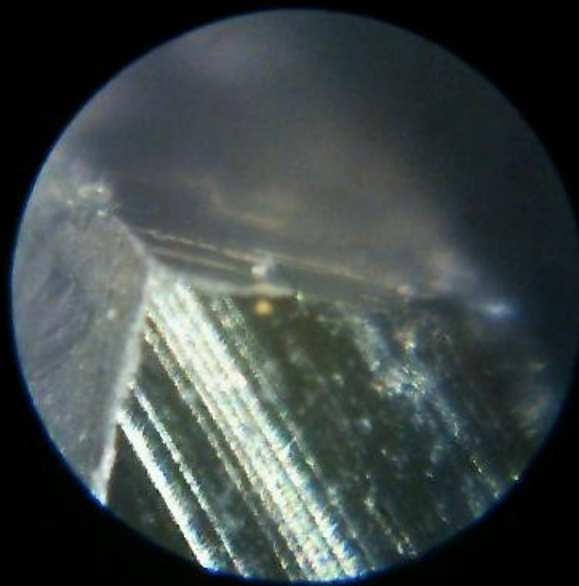


Sample Location 1
Layer of Blue Clay
between Cemented
Iron Gravel

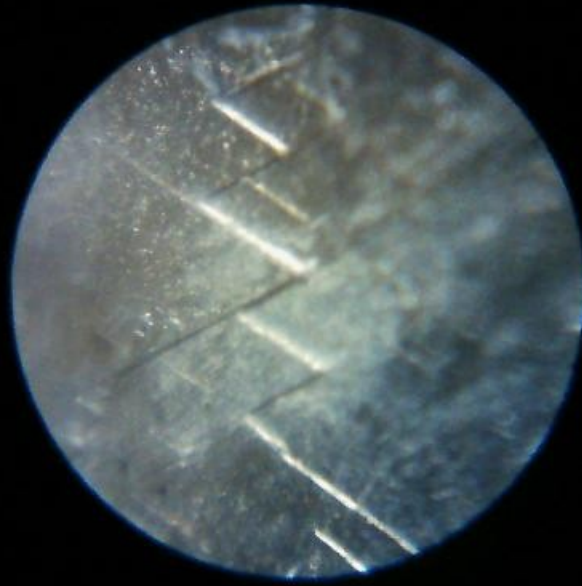
Microscopic slide #1 metal and silicates lacking crystal structure 100 X mag.



Microscopic slide #2 Tetrahedron corner of metallic crystal 90 degree, 100 X mag.



Microscopic slide #3 54 degree striations on metallic crystal 100X mag



Close up of material from blue bowl



