

The Red Metal Ridge Property is located on Vancouver Island, British Columbia, Canada, approximately 74 kilometres northwest of the City of Campbell River and 12 kilometres southwest of the Village of Sayward. The property has excellent access through a network of good logging haul roads.

Copper mineralization in the form of chalcopyrite-bornite-malachite-azurite hosted by Triassic volcanics was first discovered in the Adams River area in the late 1960's by prospectors examining road cuts along newly built logging roads. The history of work done in the area now covered by the Red Metal Ridge Property.



Samples from the Cruller contact shear zone assayed 2.83% Cu and 5 samples of mineralized breccia and basalt from the Linzer showing returned over 1.5% Cu with the best value 5.77% Cu. This sample was also anomalous in Au at 932 ppb (Schau, 2010). The mineralization at the Linzer showing is described as bornite dissemination in a "horizon" in altered basalt that can be traced for 100 m. along the road.

Minfile No.	Name	Easting	Northing	Deposit Type	Mineralization
092L 163	Billy 19	703121	5581929	I06: Cu+/-Ag quartz veins	Chalcopyrite, Bornite, Pyrite, Magnetite
092L 170	Rooney 1-4	703111	5581962	I06: Cu+/-Ag quartz veins	Chalcopyrite, Bornite, Pyrite, Magnetite
092L 249	Billy 11	703929	5581000	I06: Cu+/-Ag quartz veins	Chalcopyrite, Bornite, Pyrite, Magnetite
092L 355	Krisp	702583	5582073	106: Cu+/-Ag quartz veins	Chalcopyrite, Magnetite
092L 356	Cruller	705211	5580196	I06: Cu+/-Ag quartz veins	Pyrite, Chalcopyrite, Bornite
092L 357	Linzer	706084	5578294	106: Cu+/-Ag quartz veins	Bornite, Chalcopyrite
092L 405	Puff	704710	5580568	I06: Cu+/-Ag quartz veins	Malachite
092L 407	Pastry 5	703741	5582141	I06: Cu+/-Ag quartz veins	Magnetite, Pyrite, Chalcopyrite
092L 408	Kringle Blue	702099	5582395	I06: Cu+/-Ag quartz veins	Malachite
092L 409	Kringle North	700840	5582193	I06: Cu+/-Ag quartz veins	Chalcopyrite
092L 411	Kringle (Plus 40)	702026	5581712	106: Cu+/-Ag quartz veins	Chalcopyrite, Bornite
unassigned	Eclair	705026	5580067	I06: Cu+/-Ag quartz veins	Malachite, Chalcopyrite, Pyrite
unassigned	Oreo	703122	5581447	I06: Cu+/-Ag quartz veins	Malachite

Table 4. Mineral occurrences, Red Metal Ridge Property.

Most of the mineralized samples were collected from high grade veins and shear zones within amygdaloidal subaerial basaltic volcanic rocks.

Several samples containing high grade Cu mineralization were collected from a borrow pit at the Éclair showing with one sample returning 14.95% Cu. Soil samples collected in the vicinity of the Eclair showing were also strongly anomalous in Cu with the highest value being 1380 ppm.



# **History**

Copper mineralization in the form of chalcopyrite-bornite-malachite-azurite hosted by Triassic age Karmutsen basalt flows was first discovered in the Adams River area in the late 1960's by prospectors examining road cuts along newly built logging roads.

The Red Metal Ridge Property covers 13 showings of copper mineralisation, 11 of which are documented in the Minfile database.

## Billy 19 - Minfile #092L 163

The Billy 19 showing is underlain by basalts of the Upper Triassic Karmutsen Formation. The occurrence consists of disseminated chalcopyrite and bornite, accompanied by minor pyrite and magnetite in fractured massive to amygdaloidal basalts. Chlorite and epidote alteration are present near the mineralization.

In 1969, diamond drilling returned values of 0.53% copper over 1.5 metres and 0.27% over 3.8 metres from hole number one. Hole number two, at the same location but drilled at a different azimuth, has as its highest assay 0.41% copper over 1.5 metres. A drill hole located 113 metres north of the above holes (diamond-drill hole #5) returned 0.14% copper over 6 metres (Assessment Report 3795).

## Rooney 1-4 - Minfile #092L 170

The Rooney showing is located on a un-named north flowing tributary of Rooney Creek, approximately 700 metres east of Rooney Lake.

The occurrence consists of disseminated chalcopyrite and bornite, accompanied by minor pyrite and magnetite in an area where the massive to amygdaloidal basalts are fractured and bleached. Chlorite and epidote alteration are present near mineralization.

In 1969, a chip sample over 6.0 metres assayed 0.23% copper, but other samples in the vicinity ran in the 0.03 range (Richardson 1969; Assessment Report 1859). In 2004, sampling yielded up to 1.26% copper and 6 grams per tonne silver (Schau 2004; Assessment Report 27463).

### Billy 11 - Minfile #092L 249

The Billy 11 occurrence is located on a ridge west of the Adam River, approximately 2.2 kilometres south east of Rooney Lake. It has been explored in conjunction with the Billy 19 (MINFILE 092L 163) located 1220 metres to the north west.

The occurrence consists of disseminated chalcopyrite and bornite with minor pyrite and magnetite in an area where the massive amygdaloidal basalts are highly fractured. Chlorite and epidote alteration are present near mineralization.

In 1969, diamond-drill Hole 6 assayed 0.48% copper over 3.6 metres (Sheppard, 1977; Assessment Report 3795). This drill hole is presumed to be the locality intended for this showing.

### Krisp - Minfile #092L 355

The Krisp showing is located on the southeast side of the Island Highway, east of Rooney Lake. The showing was discovered in 2005 by M. Schau and subsequently sampled. The area is underlain by Karmutsen basalts, as a mix of autoclastic breccias, pillowed and massive flows with thin intercalations of volcaniclastic and limey sandstones cut by thin dolerite/gabbro sills.

Locally, a mineralized Tertiary (?) shear system(s) with epidote± magnetite bearing sulphide disseminations in and adjacent to a shear zone and hydrothermal system associated (?) with a nearby contact between the Triassic Vancouver Group and the Jurassic Adam River batholith.

In 2005, a grab sample of vein material containing chalcopyrite mineralization returned values up to 6.33% copper, 18.4 grams per tonne silver and 0.212 grams per tonne gold (Schau, 2005; Assessment Report 27736).

#### Cruller - Minfile #092L 356

The Cruller showing is located between Kim Creek and the Adam River in the south-central part of the Property. The showing is described as distal skarn contact mineralization that occurs near a porphyritic monzodiorite dike. The dike appears to strike 150 degrees. Mineralization consists of pyrite, chalcopyrite and malachite.

In 2006, sampling yielded up to 2.71% copper, 5.6 grams per tonne silver and 0.35 grams per tonne gold (Shau 2006; Assessment Report 28747). In 2010, sampling of the zone returned up to 2.83% copper and 6 grams per tonne silver (Shau, 2010; Assessment Report 31856).

## Linzer - Minfile #092L 357

The Linzer showing is located on or near the southernmost boundary of the Property A complete exploration history of this showing can be found in Assessment Report 31856 (Schau, 2010).

Locally, three (Upper, Mid and Lower) areas of small, several cm wide, bornite chalcopyrite veins and breccias are hosted in potassic altered basalts over a length of 150

metres. In 2006, sampling yielded up to 21.28% copper and 49.1 grams per tonne silver (Schau, 2007; Assessment Report 28747).

Approximately 250 metres to the north east of the Linzer occurrence, malachite stained basalts host copper values. In 2006, two samples yielded 4.9 and 3.2% copper with 6.5 grams per tonne silver each, respectively (Schau, 2007; Assessment Report 28747). Location of the 2006 samples is shown in Figure 6. Th location of the Linzer showing has been adjusted based on the GPS coordinates contained in assessment report 28747. Based on these coordinates the Linzer showing plots on the boundary of the Property.

### Puff - Minfile #092L 405

The Puff occurrence is located in a quarry along the Kim Creek FSR near a logging road junction, approximately 2.6 kilometres southeast of Rooney Lake.

The showing is comprised of quartz veins in fractured and brecciated basaltic rock. A nearby felsite dike hosts chalcopyrite mineralization. Other highly sheared and locally veined zones of magnetite-chalcopyrite bearing epidosite are also reported from sampling in the quarry. In 2002, sampling yielded up to 4.5% Cu, 23.9 grams per tonne Ag, 0.107 grams per tonne Au and 0.118 gram per tonne Pd from a 6 centimetre wide mineralized quartz vein; while a sample of the mineralized felsic dike yielded 2.25% Cu and 12.3 grams per tonne Ag. A chip sample across the mineralized shear zone yielded 0.95% Cu and 4.62 grams per tonne Ag over 2.2 metres (Schau 2002; Assessment Report 27070).

In 2006, sampling yielded up to 4.65% copper and 29.7 grams per tonne silver (Schau 2006; sample PU-2; Assessment Report 28328). In 2009, a sample (109a1) taken from near the shear assayed 52.6 grams per tonne silver and greater than 1.0% copper (Schau 2009; Assessment Report 31039). In 2010, a chip sample assayed 7.1% copper, 46.7 grams per tonne silver and 0.06 gram per tonne gold (Shau 2010; Assessment Report 31856).

### Pastry 5 - Minfile #92L 407

The Pastry 5 occurrence is located near a logging road junction, southwest of the Adam River and approximately 1.5 kilometres east-northeast of Rooney Lake.

At the showing, an epidotized felsite brecciated basalt hosts magnetite veins, disseminated sulphides and malachite staining. In 2004, sampling yielded up to 0.9% copper and 3.3 grams per tonne silver, while a nearby talus boulder assayed 4.8% copper and 14.6 grams per tonne silver (Schau 2004; Assessment Report 27463).

### Kringle Blue - Minfile #92L 408

The Kringle Blue occurrence is located southwest of the Adam River, approximately 400 metres north-northwest of Rooney Lake.

At the showing, a malachite stained "blue" quartz vein is hosted by massive basalt. In 2006, sampling yielded up to 0.681% copper, 6.4 grams per tonne silver and 0.266 gram per tonne gold (Schau 2006; Assessment Report 28328).

## Kringle North - Minfile #092L 409

The Kringle North occurrence is located at an elevation of 605 metres in the head waters of an unnamed northeast flowing tributary of Rooney Creek.

At the showing, basalts host quartz-feldspar-epidote veins with sulphide mineralization. In 2006, a lone sample (K079) assayed 0.424% copper, 3.0 grams per tonne silver, 1.17 grams per tonne gold and 0.11 gram per tonne palladium (Schau 2006; Assessment Report 28328). **Kringle (Plus 40) - Minfile #092L 411** 

The Kringle (Plus 40) occurrence is located on the northwest side of Rooney Lake. The showing is comprised of chalcopyrite, bornite, malachite and azurite mineralization, in

## basalt that has been exposed in road cuts.

#### Eclair

The Eclair occurrence is located a few hundred metres south west of the Cruller showing. In the Minfile database it is included with the Cruller showing although it is at a different location. The showing exposed in borrow pits on either side of the Kim Creek FSR. Here, amygdaloidal, feldspar phyric basalt hosts quartz veins with chalcopyrite and bornite. Malachite and azurite occurs on fracture surfaces and in shear zones.

The first mention of this showing is a 2011 assessment report (Schau, 2011;Assessment Report 32553). A sample collected in 2011 returned up to 6.09% Cu.



#### Oreo

The mineralization noted in Oreo is in a large road metal quarry which has been situated between two shear zones to exploit the crushed rock developed there (Schau, 2002). The quarry is on the west side of the east arm of Rooney Creek and is approximately 450 metres south of the Rooney 1-4 and Billy 19 showings (Figure 8). According to Schau (2002) this whole region is mineralized with copper sulphides and attendant epidote alteration. The mineralization is spread across the quarry floor in patches seemingly associated with secondary faults. The patches are metre sized and are chalcedonic in nature. The mineralization is predominantly chalcopyrite with associated epidote and other unidentified green minerals. Several patches yield good values, the best being 1.26% Cu and 6.0 grams per tonne Ag (Schau, 2002; Assessment Report 27070).

#### Kringle (Highway) - Minfile #092L 359

The Kringle (Highway) showing is located on the east side of the Adam River. The area is underlain by the volcanic rocks of the Triassic Karmutsen Formation (Vancouver Group) and limestones of the Triassic Quatsino Formation (Vancouver Group). These are near the contact with the Jurassic Adam River batholith to the east. Early altered dikes are near, and fresh porphyry dikes cut, the altered contact. This showing is surrounded by the Property. Locally, sulphides occur as veins cutting, garnet skarns, granodiorite, and feldspar porphyries, and as replacement masses at contacts between rock types, especially marble and garnetite. Sulphide mineralization consists of bornite along with, and among, magnetite, chalcopyrite, pyrrhotite (?), and pyrite. Local masses of wollastonite are also reported. In 2002, a sample (E187880) of malachite-stained, argillically altered felsite(?) returned 7.05% copper, 67.2 grams per tonne silver. Another sample (E187881) returned 0.112% molybdenum with 0.203% copper. Samples of massive magnetite yielded up to 36.7% iron (Schau, 2002; Assessment Report 26930). In 2006, a sample (A8-79) assayed 0.018% molybdenum and 0.218% vanadium (Schau, 2009; Assessment Report 31039).

#### Macaroon - Minfile #092L 406

The Macaroon occurrence is located west of Rooney Creek, approximately 300 metres south-southwest of its junction with the Adam River. The area to the west of the Adam River is underlain mainly by the upper part of the Triassic Karmutsen Formation, comprising mainly thick massive flows with local intercalations of amygdaloidal basalt and pods of autoclastic breccias, pillowed and massive flows with thin intercalations of volcaniclastic and limy sandstones, all cut by thin dolerite/gabbro sills. Locally, a highly sheared and strained silicified, chloritic and epidotic andesite hosts sulphide mineralization. Small dodecahedrons of reddish-brown garnet occur with epidote and felsitic rocks. In 2004, sampling yielded up to 2.4% copper and 21.7 grams per tonne silver with anomalous values in gold and palladium (Schau 2004; Assessment Report 27463).



Figure 17. Beep Mat survey lines and location of strong conductors (purple squares) with Rt (Ratio) values >80%. Map produced by D.G. MacIntyre from survey data provided by Rich River Exploration, September, 2018.

Several strong conductors were detected by the Beep Mat survey, some of which may represent new subsurface occurrences of sulphide minerals.

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