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C. GRAF  
REPORT

ECSTALL  
PROJ OPS

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(C) DESCRIPTION OF INDIVIDUAL MINERAL OCCURRENCES

Mark Showing

This showing is located 6 km. northwest of the Ecstall Mine. It occurs in the western band of ~~pyritic~~ quartz-sericite schist and ~~associated silicic rocks~~. These rocks are predominately a sequence of pyritic, quartz-sericite-chlorite schist, and interbedded massive white silicic layers, that is over 50 m. thick and can be traced along strike for 800 m. Malachite is a minor component in all outcrops, and a few bornite grains were recognized in one sample.

Three samples were assayed, the best of which ran .143% Cu, .01% Pb, .02% Zn, .06 Oz./Ton Ag and .002 Oz. Au. These samples were representative of the mineralization, and since they contain very little base or precious metal, the showing is economically unimportant.

Marmot Showing

This showing is located <sup>5.5</sup>5 km. north of the Ecstall Mine, on the same horizon of quartz-sericite schist. The rocks consist of rusty weathering pyritic quartz-sericite schist in a thicker zone of greenschist, which can be traced southward along strike into the Ecstall Mine. Many geochemical soil and silt samples taken along the zone are moderately anomalous in copper and zinc. No samples were assayed as no minerals other than pyrite could be recognized by eye. It is felt, however, that this area has potential to host massive sulfide mineralization and should be the subject of further work.

### Ecstall Mine

This mineral deposit was discovered in the late 1900's, was first staked in 1900 and is presently held by Texas Gulf Corp. Rocks in the area are mainly quartzites and other sedimentary units; however, trending down Red Gulch Creek is a sequence of greenschist and pyritic quartz-sericite schist roughly 100 m. thick. The pyritic quartz-sericite schist horizon can be traced along the creek for over 2500 m. and it hosts three separate massive sulfide deposits. The pyrite component in the quartz-sericite schist horizon becomes more and more abundant along strike, <sup>and changes abruptly</sup> ~~and changes abruptly~~ into massive sulfide mineralization. The massive sulfide deposits are actually massive pyrite <sup>lens</sup> ~~layers~~ with minor base and precious metals. The average grade is .9% Cu, 3.1% Zn, .01% Pb, .8 Oz/Ton Ag and .013 Oz/T Au. (see map)

The two main deposits average 6 m. thick, 500 m. long, 500 m. deep, and together total roughly 8 million tons of drill-proven reserves.

### Pond Showing

This showing occurs 3 km. south of the Ecstall Mine, in the same horizon of pyritic quartz-sericite schist and greenschist. The quartz-sericite schist horizon contains abundant disseminated pyrite, over 1% malachite, and a minor amount of malachite. It is vertically dipping, averages 10 m. thick and can be traced for 600 m. along strike. A bed of rusty weathering black argillite occurs along the west contact of the schist horizon.

Four representative samples were assayed, the best of which returned .013% Cu, .01% Pb, .13% Zn, .12 Oz/Ton Ag and .001 Oz/T Au. A number of soil lines were run over the zone, which <sup>indicated</sup> showed it to be moderately anomalous in copper, lead and zinc in a few areas. Owing to the similarity between the rocks of this showing and those of the Ecstall Mine, and the abrupt manner that the <sup>Ecstall</sup> pyritic quartz-sericite-schist <sup>grades</sup> grades into massive sulfide along strike and down dip, it is felt that the Pond <sup>also</sup> Showing has the potential to host massive sulfide deposits.

#### Mass Deposit

This deposit was first discovered in 1958 by geologists working the regional trend southward from the Ecstall Mine. The deposit was subsequently drilled and found to be sub-economic. It occurs 12 km. southeast of the Ecstall Mine, and is presently owned by Dimac Resources of Vancouver.

The deposit is a layer of massive pyrite that averages 8 m. thick over a strike length of 700 m. It occurs in a pyritic quartz-sericite schist horizon that can be traced further along strike, and the overall setting is identical to that at the Ecstall Mine. The average grades are comparable to those of the Ecstall Mine as well, being generally low; however, significant zinc values have been intersected in some drill holes. *The deposit contains in the order of 3 million tons grading .5% Cu, 2% Zn, .01% Pb, 1 oz Ag, .003 Ag*

Horsefly Deposit

and staked

This deposit was originally discovered/in 1960 by geologists working regionally in the area, following the discovery of the Mass deposit, which lies 3.5 km. northwest. It was subsequently tested with a ground E-M survey, which located a conductor up to 15 m. thick and over 400 m. long. No further work was done on the property until it was staked, as part of the Ecstall claim group, and soil-sampled during the past season.

Massive pyrite and pyritic quartz-sericite schist occurs in two creeks 100 m. apart, and the zone of pyritic quartz-sericite schist (10 m. thick) outcrops on ~~strike~~ <sup>a cliff face</sup> 200 m. south. The maximum observed thickness of massive pyrite mineralization is 1 m. Two samples of it were assayed, the best of which gave .308% Cu, .08% Pb, 4.55% Zn, 1.5 Oz/Ton Ag and .01 Oz/Ton Au.

Numerous soil and silt samples were moderately to highly anomalous in Cu, Pb and Zn and indicate the interesting zone to have a strike length of over 2000 m. The setting is identical to that of the Mass and Ecstall deposits, and therefore a significant sized massive sulfide deposit is likely to exist <sup>or</sup> of the Horsefly as well.

## STRIKE SHOWING

This showing occurs 4.5 km. west of Ecstall Lake. Two pyritic quartz-sericite schist zones and one rusty weathering pyritic argillite bed occur in the area and are all of economic interest. The two schist zones may be a structural repeat of one horizon. The eastern zone of pyritic, quartz-sericite schist is over 20 m. thick and can be traced along strike for over 500 m. It outcrops along the west side of Strike Creek, roughly 150 m. above the water, while the rusty weathering pyritic argillite unit (50 m. thick) lies along the creek bed. Large (6 m. square) rusty boulders of pyritic argillite lie along the creek; however, no minerals other than pyrite were observed in them or in the associated zone of pyritic quartz-sericite schist.

The western zone of pyritic quartz-sericite schist occurs 1.5 km. west of the previous zone, is roughly 5 m. thick and can be traced for 200 m. along a narrow <sup>stream</sup> shear gully in a cliff face. Numerous, rusty weathering, fine-grained, massive sulfide boulders weighing up to 20 lbs. were found in the talus below the gully. The source was not located on the ground, but is definitely within the quartz-sericite schist zone along the gully. Three samples of the massive sulfide were assayed and the best result was .174% Cu, .27% Pb, 2.83% Zn, 1.13 Oz. Ag, .01 Oz. Au. Numerous <sup>stream</sup> silt samples moderately anomalous in Cu and Zn, show the western zone to extend for several thousand meters to the north. This entire area is considered to have potential to host massive sulfide deposits and should be subsequently staked and evaluated with further work.

MARLYN SHOWING

This showing occurs 2 km. east of the Horsefly  
an  
deposit in/entirely separate zone of quartz-sericite schist  
and enclosing greenschists. The rocks consist of rusty  
weathering quartz-sericite schist containing disseminated  
pyrite, <sup>cr.</sup> 1/8" thick ~~and~~ pyrite layers, ~~and~~  
~~pyritic quartz-chlorite schist~~. The zone is 25 m. thick and can  
be traced for several thousand meters southeast across the Quaal  
River. Two representative samples were assayed, the best of  
which gave .005% Cu, .01% Pb, .05% Zn, .05 Oz/T Ag and  
.002 Oz./Ton Au.

Numerous silt samples were taken along the zone,  
only a few of which were moderately anomalous in Cu and Zn.  
Owing to the low content of base and precious metals, this  
zone is considered to be economically unimportant.

E) GEOCHEMISTRY

The entire claim block as well as all the adjoining area underlain by favorable stratigraphy was reconnaissance stream sampled. The samples were taken by samplers walking along the drainages, the density being roughly one sample per 500 m. A total of 600 silt samples were taken and analyzed by Min-En Labs, Vancouver, for Cu, Pb and Zn. Selected samples were also analyzed for Au and Ag.

~~In addition,~~ <sup>in addition</sup> A large soil sample grid was ~~made~~ <sup>laid out</sup> over the Horsefly deposit, and three other interesting areas had a number of soil sample lines taken over them. The Horsefly soil grid was 4 km. long, with a line spacing of 200 m. and a sample spacing of 100 m. A total of 440 samples were taken on it. The soil lines that were run over the three other areas were 200 m. apart, with a sample spacing of 50 m. or 100 m.

The B. Horizon was sampled and analyzed for Cu, Pb, Zn, also by Min-En Labs, Vancouver. Selected samples were analyzed for Au and Ag.

Background and anomalous values were arbitrarily determined as follows:

	<u>Cu(ppm)</u>	<u>Pb(ppm)</u>	<u>Zn(ppm)</u>	<u>Au</u>	<u>Ag</u>
Background	< 80	< 50	< 100		
Anomalous	> 80	> 50	> 100		
Maximum	? 1400 ?	? 155 ?	? 500 ?		

<sup>copper-zinc</sup> A number of copper-zinc anomalous areas were located; however, coincident anomalous lead values occur only in those samples that were taken directly over known massive sulfide

deposits. Therefore, despite being a minor constituent in the known deposits, <sup>lead</sup> ~~is~~ the best guide to <sup>locating</sup> ~~pinpointing~~ massive sulfide bodies.

The coincident copper-zinc anomalies are very useful as they outline weakly mineralized horizons, that could contain richer massive sulfide zones, ~~and provide new work.~~

The quality of the <sup>geochemical</sup> stream silt samples was hampered in many places by lack of silt in <sup>streams</sup> ~~streams~~, by deep moss and humus cover, and by swampy terrain.

At least ten ~~copper anomalies~~ areas were located that were moderately to highly anomalous in copper, but contained low zinc and lead values. The more significant anomalies ~~should be followed up with further work,~~ <sup>as they likely reflect copper mineralization</sup> however these are considered to be lower priority than the copper-zinc anomalies.

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## CONCLUSIONS

The Ecstall-Quaal rivers area of B.C. is an economically <sup>in part</sup> ~~interesting~~ volcanogenic massive sulfide district. Two individual massive sulfide deposits have been discovered, and their host quartz-sericite schist horizon is of regional extent. Copper and copper-zinc stream silt and soil anomalous areas have been located along the <sup>pyritic</sup> quartz-sericite schist horizon, indicating several new zones of economic interest. The deposits discovered to date ~~have been~~ <sup>are</sup> significantly large (3-8 million tons); however, they are essentially sub-economic massive pyrite bodies with low base and precious metal contents. If a similar sized deposit can be discovered, <sup>in one of</sup> ~~the new zones,~~ which also contains enough high grade mineralization to warrant being placed into production, then the two deposits already discovered could later provide additional mill feed. *The district is therefore considered to have potential for a long term large scale mining operation.*

## RECOMMENDATIONS

*new* It is recommended that four <sup>geochronologically anomalous</sup> areas be followed up by more detailed work next season. These areas and the work recommended is outlined below.

### HORSEFLY DEPOSIT

*economic* This area should be mapped and prospected in detail. *As well, a* ~~the~~ ground E-M Survey should be run over the soil grid which has already been laid out <sup>and sampled</sup> this past season.

### STRIKE SHOWING

*evaluation* This area should initially be staked with four claims

totalling 80 units. A soil grid should be laid out over the entire four claims, with a line spacing of 200 m. and a sample spacing of 100 m. These samples should be analyzed for copper, lead and zinc. The area should also be mapped and prospected in detail, and a ground E-M Survey run if interesting mineralization, or a significant soil anomaly is located.

#### POND SHOWING

This area should be sampled on a soil grid with a line spacing of 200 m. and a sample spacing of 100 m.

Prospecting and mapping will be difficult

because of the bush and moss cover; however, a ground

E-M Survey should be made over the main pyritic quartz-sericite schist zone, and any soil anomalies <sup>that have been</sup> ~~subsequently~~ located.

#### MARMOT SHOWING

This area should be mapped and prospected in detail.

A soil grid with a 200 m. line spacing and a 100 m. sample spacing should be laid over it. A ground E-M Survey should also be run over the soil grid, as the area is definitely anomalous in copper and zinc.

In addition to these four main areas recommended for follow-up work, there are a number of single element (copper) and airborne E-M anomalies that should also be investigated.

The main area is the T-1, <sup>airborne</sup> E-M anomaly at the head of Red Gulch Creek,

<sup>which area</sup> ~~that~~ also contains a significant copper anomaly in soils, ~~but not~~  
~~in the rocks.~~