

212

BIRKETT CREEK MINE OPERATORS LIMITED

MAGNETOMETER SURVEY OF THE QUARTZITE GROUP

EXPENSES INCURRED

LABOUR: Line cutting and magnetometer readings 45 man days at \$15.00/man/day.	\$675.00
CALCULATIONS AND MAP PREPARATION: 6 man days at \$15.00/man/day.	\$ 90.00
SUPERVISION OF SURVEY AND MAP PREPARATION, AND REPORT COMPILATION BY PROFESSIONAL ENGINEER: Total of 3 days at \$35.00/day.	<u>\$105.00</u>
	<u>\$870.00</u>

CCR:MIC  
July 30, 1958

*C. C. Rennie*  
C.C. Rennie, P. Eng.  
Geological Engineer.

BIRKETT CREEK MINE OPERATORS LIMITED

GEOPHYSICAL REPORT ON  
MAGNETOMETER SURVEY OF QUARTZITE GROUP OF  
CRAIGMONT MINES LTD.

CLAIMS: Quartzite 1,2,3,4,5,6 and Price #1 Fr. and Price #2 Fr.

LOCATION: 12 miles northwest of Merritt, B.C. (50°, 120° SW)

DATE OF SURVEY: June 23 - July 25, 1958.

SUPERVISION AND REPORT BY: C.C. Rennie, P. Eng.

July 30, 1958

REPORT ON  
MAGNETOMETER SURVEY OF QUARTZITE GROUP

TABLE OF CONTENTS

Purpose of Survey.....	1
Location of the Claims.....	1
General Geology of the Area.....	2
Equipment.....	3
Method of Survey.....	4
Calculation and Plotting.....	4
Interpretation of the Magnetometer Survey Results.....	5
Conclusions.....	6
Appendix.....	
1) Sample of Survey Notes	
2) Plan of Magnetometer Readings	

BIRKETT CREEK MINE OPERATORS LIMITED

REPORT ON  
MAGNETOMETER SURVEY OF THE QUARTZITE GROUP

PURPOSE OF THE SURVEY

The survey was intended to provide a detailed magnetometer reconnaissance of an area suspected of being close to the contact between the Nicola series rocks and Guichon batholith.

Copper, in the mineral chalcopyrite, occurs with magnetite and hematite on the adjoining Merrill Group of claims and the mineralized area is outlined by a high magnetic response. Some chalcopyrite occurs with hematite and minor magnetite in the old "Eric" shaft in the south-east corner of the Quartzite No. 6 claim. This occurrence suggested that any magnetic anomalies found might lead to the discovery of copper-iron ore bodies.

LOCATION OF THE CLAIMS:

The group surveyed comprises the Quartzite 1 - 6 claims and the Price 1 Fraction and Price 2 Fraction claims, which are along the east side of the Craigmont Mines Limited property, now operated by the Birkett Creek Mine Operators Limited.

The claims are served by a good gravel road which runs

east - west from the final posts of the Quartzite 5 and 6 claims across the Price No. 1 Fraction. Another jeep road passes the initial and final posts of the Quartzite 3 and 4 and Quartzite 1 and 2. These roads join the Aberdeen Road a mile to the southeast at a point four miles north of the Merritt - Spences Bridge highway.

#### GENERAL GEOLOGY OF THE AREA

REFERENCE: G.S.L. Memoir 249, "Geology and Mineral Deposits of Nicola Map Area, B.C." by W.N. Cockfield, and Geological Map 826 A which accompanies the Memoir.

The topography on the Quartzite Group of claims is gentle to moderately steep, with the bedrock 90 - 95% covered with unknown depths of overburden. The overburden is only five feet deep in the southeast corner of Quartzite #6 claim and therefore may be fairly shallow over the southern portion of this claim.

A small outcrop of diorite lies just east of the east side of Quartzite #6 claim and a large ridge of quartz diorite extends south from the vicinity of the initial posts of Quartzite #3 claim.

Generally, the claims are considered to cover the contact between the Upper Triassic Nicola formation of volcanic and sedimentary rocks on the south with the Jura-Cretaceous diorite and quartz-diorite of the Guichon batholith on the north. This assumption is only hypothetical, however, as the entire area could be underlain by intrusive rock.

The old "Eric" shaft is 8 feet by 6 feet by 7 feet deep and the dump rock indicates that a pocket of epidote-rich rock carrying

chalcopyrite, hematite and minor magnetite was mined from between walls of fine grained diorite and pink-weathering albitized rock. There is very little mineralization remaining in the walls of the shaft and the bottom of the shaft is full of rubble.

One hundred feet northeast of the shaft a bulldozer trench exposes light grey to dark brownish green fine grained rock which is somewhat banded with a vertical dip and northeast strike. The origin of the banding is indefinite. This rock is believed to be andesitic volcanic rock of the Nicola series. This rock contains some magnetite and occasional thin fracture fillings of chalcopyrite.

The association of magnetite and chalcopyrite in mineralized zones of the Nicola formation makes the magnetometer a very useful, but not infallible, tool in the search for copper deposits in this area. Besides the apparently economic chalcopyrite-magnetite-hematite Craigmont ore body there are other sub-economic chalcopyrite-magnetite and barren magnetite disseminations in the diorite in the neighbourhood.

#### EQUIPMENT

The magnetometer used for this survey was manufactured by the Radar Exploration Company, Toronto, and bears Serial No. 37. The scale constant on this torsion type instrument is 22.6 gammas per division of the micrometer scale. This instrument, which is very light and portable, requires no locking of the motion before being moved from one station to the next. With practice, an operator can take readings at 100 foot intervals every two minutes or in excess of 200 readings per day.

This instrument has no auxiliary magnets but has a range between 11,000 and 33,000 gammas.

#### METHOD OF SURVEY

A base line was established by transit survey along the cut line of the north boundary of the Price 3 and 4 claims, which forms the south boundary of the Price 1 and 2 Fractions. Picket lines were laid out by transit survey at 200 foot intervals at right angles to the base line. Stations were chained in along the picket lines at 100 foot intervals and were marked with a 4 foot cedar lath bearing the line and station numbers.

One man took the magnetometer readings and recorded the notes. Permanent and daily stations were established as a constant check on diurnal and instrument variation.

#### CALCULATION AND PLOTTING

The calculation and plotting of the notes was done by W.S. Pentland under the direction of the writer.

A diurnal correction was applied wherever a diurnal variation was apparent. This correction was made by adding or subtracting scale divisions from the actual reading.

In order to correlate the Quartzite Group survey with other detailed surveys on the Craigmont property, a constant of 225 scale divisions was subtracted from all readings to offset the difference in adjustment of the instrument. After the adjusted readings were multiplied by the scale constant of 22.6 gammas per scale division, an arbitrary constant of 10,000 gammas was subtracted since this arbitrary constant

has also been subtracted from all other magnetometer calculations on the Craigmont property.

W.S. Pentland prepared the appended map showing the survey results in relation to claim boundaries.

#### INTERPRETATION OF THE MAGNETOMETER SURVEY RESULTS

Lines of equal magnetic intensity have been drawn on the map at 1000 gamma intervals as closer intervals would only confuse the interpretation and add only meaningless detail.

The known outcrops and constant slope in the area suggest a fairly shallow mantle of overburden so that any anomalies should not be a result of varying amounts of magnetite in the overburden or of varying depth of overburden. Nor is there any known cap rock in the area that would produce a similar effect.

Furthermore, the few outcrops in the area do not suggest interbedded volcanics and sediments with variable amounts of magnetite producing elongated parallel highs and lows.

Therefore, any anomalies on the claims must be due to concentrations of magnetite in the diorite or in the Nicola series. Whether or not there is any economic mineralization associated with the anomaly is a matter for further investigation.

Magnetic variation over the group of claims ranges from a low of 5571 gammas to a high of 11990, or a maximum variation of 6419. The variation of the extreme highs above the general 7000 to 8000 gamma background is approximately 4000 gammas. This anomaly is therefore not very intense as compared with the main Craigmont anomaly which has highs of 16000 gammas



above background. The intensity corresponds more closely with an anomaly caused by above average disseminated magnetite in diorite on the McLeod 3 and 4 claims to the west.

CONCLUSIONS

- 1) The magnetometer survey indicated one 4000 gamma anomaly 700 feet long striking northeast across the common corners of the Quartzite 3,4, and 6 claims and another adjacent 3000 gamma anomaly on Quartzite 5 claim. A small anomaly of approximately 2000 gammas occurs on the Price 1 Fractional claim.
- 2) These anomalies are believed to be caused by concentrations of magnetite rather than by any variations in depth of cover or magnetic material in the overburden.
- 3) The occurrence of chalcopyrite with minor magnetite in the old "Eric" shaft at the south side of Quartzite 6 claim in an area of background magnetic intensity suggests the possibility of better copper mineralization in the areas more highly mineralized with magnetite.
- 4) An immediate program of bulldozer stripping of the bedrock is justified on the largest anomaly. The bedrock should be only thinly mantled and stripping will provide the most information at least cost.

Respectfully submitted,

*C. C. Rennie*  
C.C. Rennie, P. Eng.  
Geological Engineer.

CCR:MIC  
July 30, 1958

DATE: July 17, 1958

LINE: No 1

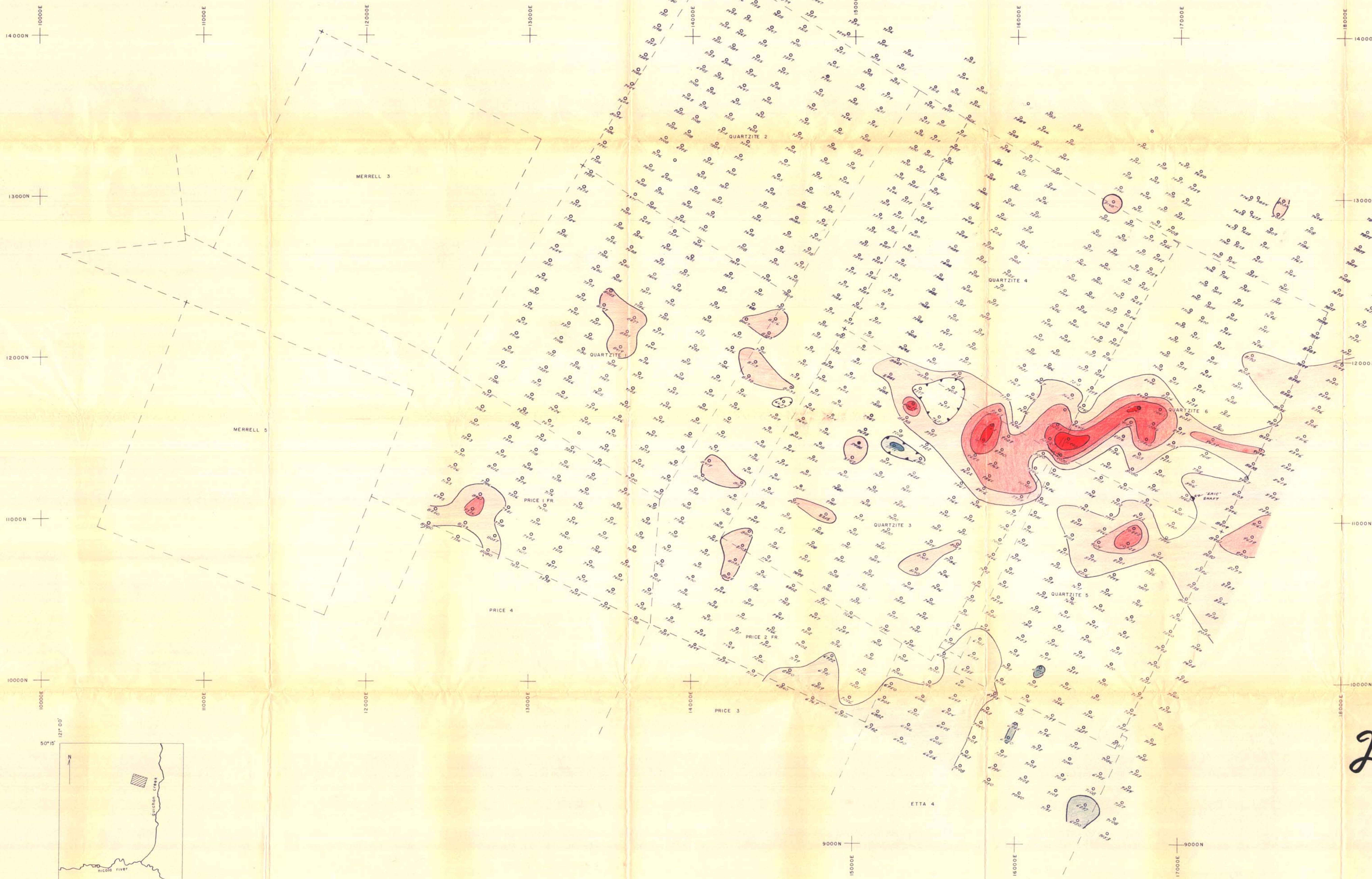
## Quartzite Group Survey

STAT	READ-R	VALUE	TIME	DIUR	$R$ $X-D=R_1$	$C=-225$ $R_1$ $X_1-C=R_2$	$R_2(22.6\sigma)-10,000\sigma$ REMARKS
Office	984		8.58	0	984	759	7153
Base 40	1025		9.11	-1	1024	799	8057
Base 41	994		9.17	-1	993	768	7356
Line 1							
1-100N	1031		9.20	-1	1030	805	8193
1-200N	1090		9.23	-1	1089	864	9526
1-300N	1066		9.26	-2	1064	839	8961
1-400N	1014		9.28	-2	1012	787	7786
1-500N	1024		9.31	-2	1022	797	8012
1-600N	1010		9.34	-2	1008	783	7695
1-700N	994		9.37	-2	992	767	7334
1-800N	1001		9.40	-2	999	774	7492
1-900N	1006		9.42	-3	1003	778	7572
1-1000N	1005		9.45	-3	1002	777	7556
1-1100N	1003		9.52	-3	1000	775	7515
1-1200N	993		9.55	-3	990	765	7289
1-1300N	990		9.58	-3	987	762	7221
1-1400N	986		10.00	-4	982	757	7108
1-1500N	995		10.02	-4	991	766	7311
1-1600N	1003		10.05	-4	999	774	7492
1-1700N	1007		10.07	-4	1003	778	7572
1-1800N	1007		10.10	-4	1003	778	7572
1-1900N	1010		10.12	-4	1006	781	7650
1-2000N	1017		10.15	-5	1012	787	7786
1-2100N	1007		10.18	-5	1002	777	7556
1-2200N	1014		10.21	-5	1009	784	7718
1-2300N	1026		10.24	-5	1021	796	7989
1-2400N	999		10.26	-5	994	769	7379
1-2500N	1011		10.29	-6	1005	780	7628

This sheet is a copy of the field notes and calculations of part of the first day's readings.

B. L. L. L.





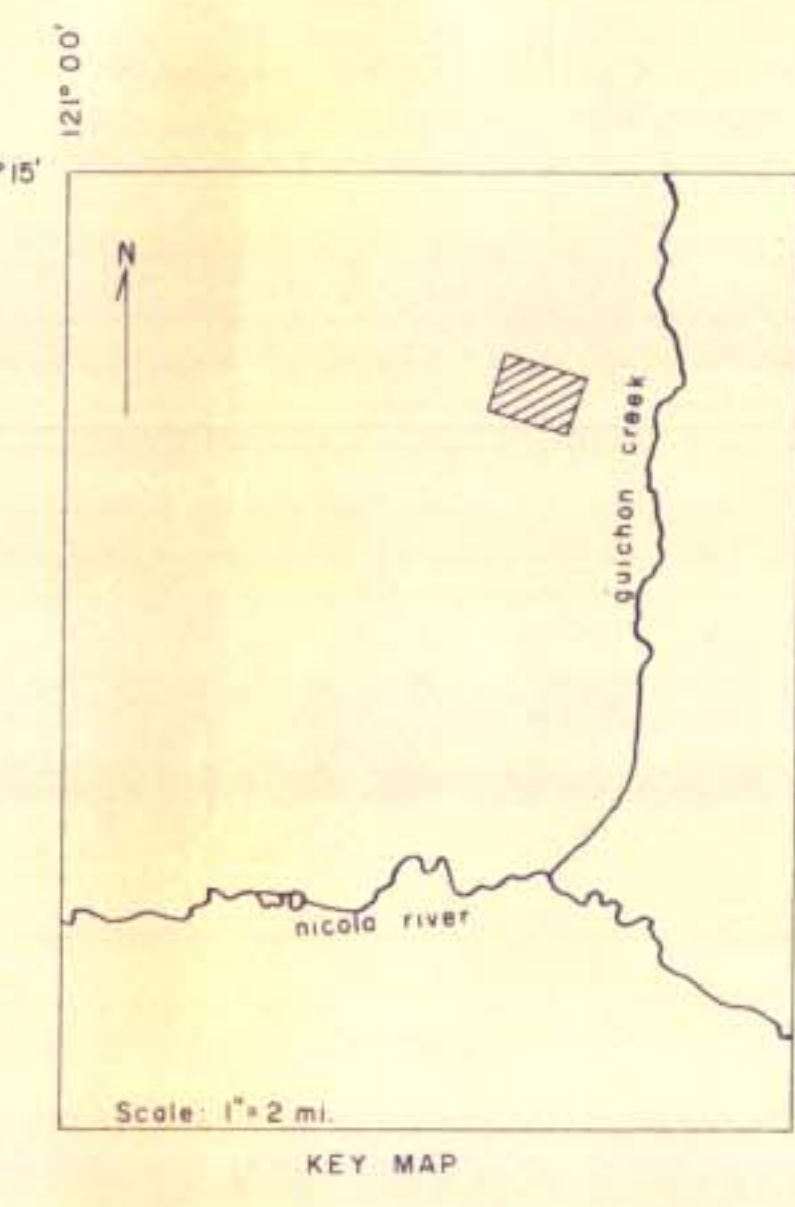
LEGEND

Red	11000 f +
Dark Red	10000 f - 11000 f
Light Red	9000 f - 10000 f
Pink	8000 f - 9000 f
White	7000 f - 8000 f
Light Blue	6000 f - 7000 f
Dark Blue	5000 f - 6000 f

A MAP SHOWING  
 THE  
 MAGNETIC VALUES AND CONTOURED RESULTS  
 ON THE  
 QUARTZITE GROUP OF MINERAL CLAIMS  
 NEAR  
 MERRITT, B.C.  
 IN THE  
 NICOLA MINING DIVISION

212

SCALE: 1" = 200'  
 DRAWN BY: W. PENTLAND  
 JULY 28, 1958



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 212 MAP #1

