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REPORT
on the
MAGNETOMETER SURVEY
of the
S A M M I N E R A L C L A I M S
near
M E R R I T T, B. C.

March, 1959.

F.J. Hensworth.

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MAP OF THE MAGNETOMETER SURVEY OF THE
SAM GROUP... Envelope

REPORT
on the
MAGNETOMETER SURVEY
of the
SAM MINERAL CLAIMS
near
MERRITT, B.C.

INTRODUCTION

This report describes the procedure and results of a magnetometer survey completed on the Sam group of mineral claims at Merritt, B.C. The report is prepared at the request of Mrs. G.C. Short of Georgian Mineral Industries Limited of Calgary, Alberta.

The magnetometer survey was part of a planned program aimed at finding zones of copper mineralization.

The report and accompanying magnetometer contour map are submitted in compliance with the Mineral Act for assessment credit for one year on the claims enumerated in the text.

LOCATION AND PROPERTY

The Sam group of eight claims is situated about six miles northwest of the town of Merritt, B.C., in the Nicola Mining Division. The geographical position is latitude N 50° 10', longitude W 120° 55'. The claims lie about two miles south of the Craigmont Mine.

Access is from the main Merritt-Spences Bridge Highway at a point just beyond the town of Lower Nicola about five miles west from Merritt. From this point a ranch-road leads north for 1½ miles to the claims.

Particulars of the Sam group of mineral claims

<u>Name</u>	<u>Tag No.</u>	<u>Record No.</u>	<u>Record Date</u>
Sam No. 1	252416	6310	March 21/58
Sam No. 2	252417	6311	March 21/58
Sam No. 3	252418	6312	March 21/58
Sam No. 4	252419	6313	March 21/58
Sam No. 5	252424	6314	March 21/58
Sam No. 6	252421	6315	March 21/58
Sam No. 7	252422	6316	March 21/58
Sam No. 8	252423	6317	March 21/58

GENERAL DESCRIPTION OF THE AREA

The property lies on the north side of the Nicola River Valley to the west of Stumbles Creek. The ground slopes gradually upward to the north with alternate flat benches and steeper sections up to about 20°. The elevations vary between 2,500 and 3,000 feet above sea level. The area has been partially logged and is covered by a sparse growth of pine and fir.

MAP OF HIGHLAND VALLEY-MERRITT AREA. B.C.

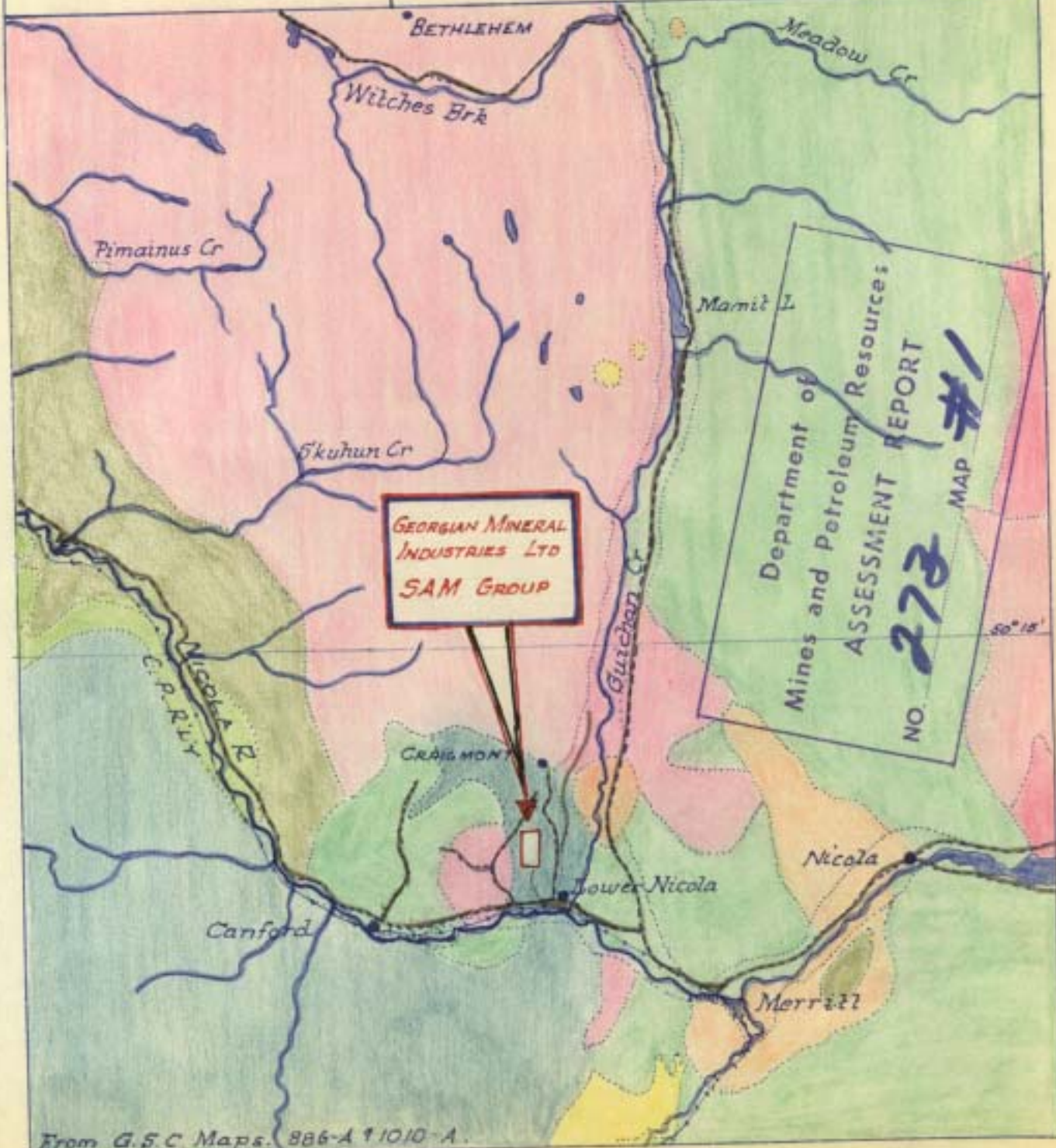
Scale. 4 MIs to 1 In.

F. J. HEMSWORTH. P. ENG.

Mar 13 - 1959

- KAMLOOPS VOLCS
- KINGSVALE GROUP
- JURASSIC GRANITES
- NICOLA GROUP

- PAVED ROADS
- IMPROVED ROADS



From G.S.C. Maps. 886-A & 1010-A.

GENERAL GEOLOGY

At the time of the survey about six inches of dry snow covered the ground and obscured the rock outcrops.

The main geological feature and mineralizer of the Merritt area is the Guichon Batholith, and other smaller relative intrusive stocks. These plutonic masses, consisting primarily of quartz diorite of Jurassic Age, have intruded older volcanics, and sediments of the Nicola Series of Triassic Age. It has been found that the most favorable areas for copper mineralization are along the contacts between these two formations or in the Nicola Series adjacent to the contact.

The Nicola group consists largely of volcanic rocks (greenstones). These rocks are chiefly andesites but include basalts, breccias, and tuffs. Minor amounts of sedimentary rocks are associated with the volcanic members. Limestone is the most abundant type but argillite and conglomerate occur sparingly.

From the geological survey Nicola Map No. 886A the Sam group of claims are underlain by rocks of the Nicola Series close to the contact of a granitic stock. However, younger volcanic flows overlie the Nicola Series. These more recent flows are classified as the Kingsvale Group of Lower

Cretaceous Age. The rocks consist of rhyolite, andesite, basalt, associated tuffs, breccias, agglomerates, and are of unknown thickness. The Kingsvale Series are considered as poor host rocks for copper mineralization. The purpose of the geophysical work was to try to probe through these overlying rocks into the more favorable Lower Nicola Series.

MAGNETOMETER SURVEY

Survey of Grid

Two baselines were laid out with a Brunton compass in an east-west direction following the original location lines of the claims. The baselines were cut out and stations were set at 400-foot intervals. From each baseline station lines were run at right angles in a north-south direction and readings were taken at 200-foot intervals along these sidelines. The grid thus formed had 400 foot - 200 foot station intervals. The road and any other topographical features were noted.

Instrument

Readings were taken at 200-foot intervals with a Radar Magnetometer. This instrument has a sensitivity of 25.7 gammas per scale division.

Corrections

(a) Diurnal

Short traverses were run, each loop being approximately 3,000 feet, and diurnal variations were noted. The diurnal variations were very small and were not considered significant in this type of magnetometer reconnaissance, consequently no diurnal corrections were made.

(b) Day to Day

A reading was taken at the base station each day before beginning the field work, and each day after field work was completed. The variation between the base reading on any particular day, and the original base reading was the day to day correction.

Mapping

The results of the magnetometer survey are shown on the map contained in the pocket at the back of the report. The magnetometer readings are represented on this map by a series of contour lines indicating the magnetic intensity in gammas. The contour lines were drawn through readings of equal intensity at 300 gamma intervals on a working plan on which the readings were plotted.

The setting of the instrument was high, and in order to facilitate mapping 16,000 gammas were subtracted from all the readings. This does not effect the results as it is the difference between readings rather than the strength of the reading which makes the anomalous condition.

DISCUSSION OF MAGNETIC ANOMALIES

The purpose of the magnetometer survey was to find if any magnetic anomalies existed on the property, and to determine their size and intensity. An anomaly would result from the presence or absence of magnetite in the rocks investigated. Copper minerals have been found with magnetite on other claims in the neighborhood and for this reason a magnetic anomaly would be an area of interest for possible copper ore bodies, and hence worthy of more detailed attention. The following factors produce variations in vertical magnetic intensity.

1. A concentration of magnetic minerals, possibly with associated valuable minerals.
2. A variation in the amount of accessory magnetite in granitic or volcanic bedrock.
3. A variation in the amount of magnetite distributed through, or connected with, the overburden.
4. A variation in depth of non magnetic overburden or caprock over bedrock having a constant vertical magnetic intensity.
5. Variations in amounts of magnetic minerals in adjacent bands of volcanic and sedimentary rock, such as may be expected in the Nicola formations which would produce elongated magnetic highs, and lows parallel to the form strike. These variations are not expected to be great.
6. Any combination between variations in magnetic minerals in the rock, and variation in the thickness of the overlying magnetic or non magnetic overburden or caprock.

ANALYSIS OF SURVEY RESULTS

The magnetometer readings were generally higher in the northwest section on Sam No. 3 claim, and lower in the southeast section. This conforms with the amount of rock outcrop, and the relative depth of overburden. The southeast portion is in the valley, where the depth of overburden is greater and readings are generally lower.


An exception to the above was noted in the southwest portion of the group, on the Sam No. 8 claim, where a series of small minus readings showed. However, the overall difference between the smallest low (minus 686 gammas) and the greatest high (plus 1,186 gammas) is only 1,872 gammas. This difference is considered too small to be significant.

CONCLUSION

No readings of outstanding interest were recorded on the Sam group of mineral claims. It should be pointed out however, that areas of known geologically favorable rocks devoid of anomalies cannot be rejected out of hand purely on the basis of a magnetometer survey alone because there may be commercially interesting mineralization not associated with anomaly producing magnetite minerals; also the mineralization, if associated with magnetite, may be at too great a depth to affect the magnetometer.

No development work is recommended on
these claims at the present time.

Respectfully submitted,


F. J. Hensworth, P. Eng.

March, 1959.

Statement of Labor Expenses on the Magnetometer
Survey of the Sam Nos. 1-8 Mineral Claim Group,
near Merritt, B.C., in the Nicola Mining Division.

John Sirola-Geophysicist-Feb. 16-22, 1959, 7 days @ \$30.00 per day---	\$210.00
#R. Berchtold-Helper-Feb. 16-22, 1959, 7 days @ \$22.00 per day---	154.00
#R. Watson-Helper-Feb. 16-22, 1959, 7 days @ \$22.00 per day----	154.00
F.W. Reger-Computations & Drafting-Feb. 23 & 24, 2 days @ \$24.00 per day----	48.00
8% of payroll for Workmen's Compensation, Holiday Pay and Unemployment Insurance-	41.00
F.J. Hemsworth-P.Eng.-7 days @ \$45.00 per day-----	<u>315.00</u>
Total	<u>\$922.00</u>
Magnetometer Rental and Stenographic services not charged.	

#Note: From conditions governing acceptance of
geophysical surveys as assessment work
Section 3(f) "The services of other shall
be rated at not more than the wage regularly
paid to miners in the vicinity."

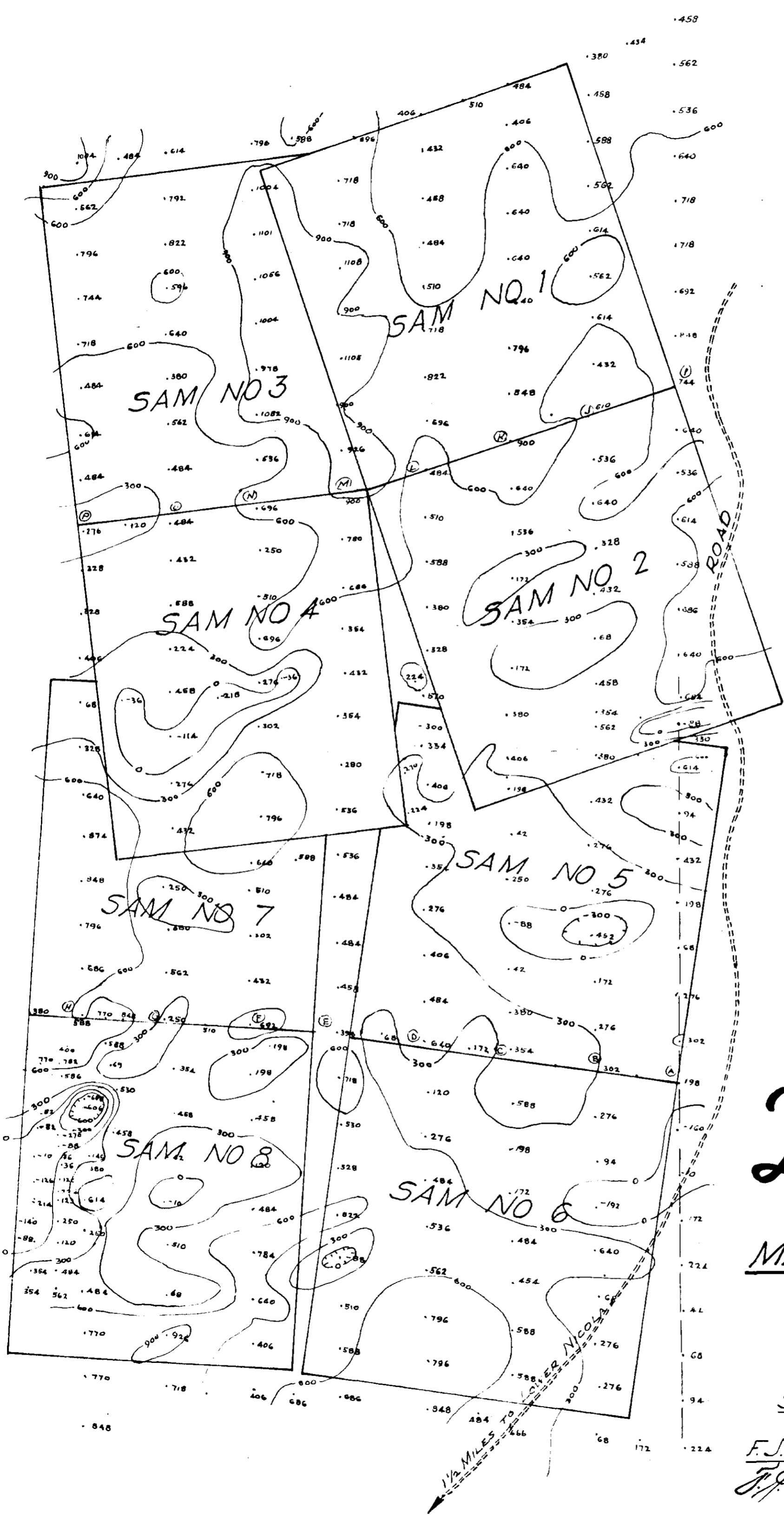
Miners at the neighboring Craigmont mine are
paid \$14.84 per day plus an average bonus of
\$10.00 per day making a total wage of \$24.84
per day.

Certified Correct


F.J. Hemsworth.

March 13, 1959.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
273 MAP #12 NO



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MAGNETOMETER SURVEY
OF THE
SAM GROUP
MERRITT, B.C.

SCALE. 1 INCH = 400 FEET

F.J. HEMSWORTH, P. ENG. MAR 12-1959
F.J. Hemsworth
CONTOUR INTERVAL - 300 GAMMAS