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The Granby Consolidated M. S. & P. Co. Ltd.

Geophysical Investigation

of 22 claims of

Regal Group of Mineral Claims

Located about 3 miles north-east of

Princeton, B.C.

In Similkameen Mining Division

49° 120° SE

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by Keith C. Fahrni, P. Eng.

April to July 1958.

Table of Contents

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INTRODUCTION

The Regal Group of mineral claims is situated on the south-west slopes of Bald Mountain at approximately 49° 29' latitude and 120° 28' longitude, and about three miles north-east of Princeton in the Similkameen Mining Division of British Columbia.

The original group of six claims was located in June of 1957 and have been held in good standing by Granby Company since that time. An additional 16 claims were located by J.J. Mullin and J. Murdock in March of 1958, and these were subsequently transferred by Bill of Sale to the Granby Company.

Of the 22 claims in the group 18 were covered by a magnetometer survey, 10 by dip needle, 10 by self-potential and 21 by electromagnetic. Thus all claims were covered by one or more geophysical methods.

The following report covers all work done on the 22 claim group and provides evidence of expenditure mandatory for acceptance of the report as assessment work.

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SCHEDULE OF CLAIMS COVERED BY REPORT

The total area covered by the 22 claim group listed below is about 1109 acres as determined by outlines shown on maps attached to the report.

Claim	Tag No.	Located	Recorded	Record No.	Locator	F.M.C. No.
Regal #1	A 74794	June 5, 1951.	June 8, 1951.	5415	(Held	72771F
2	74795	June 5, 1951.	June 8, 1951.	5416	by	"
3	74796	June 5, 1951.	June 8, 1951.	5417		"
4	74797	June 5, 1951.	June 8, 1951.	5418	Granby	"
5	74798	June 8, 1951.	June 13, 1951.	5422		"
6	74799	June 8, 1951.	June 13, 1951.	5423	Company)	"
7	B 62531	Mar. 21, 1958.	Mar. 25, 1958.	7310	Jack J. Mullin	72878F
8	62530	Mar. 21, 1958.	Mar. 25, 1958.	7311	"	"
9	B 2443	Mar. 21, 1958.	Mar. 25, 1958.	7312	"	"
10	2444	Mar. 21, 1958.	Mar. 25, 1958.	7313	"	"
11	2445	Mar. 21, 1958.	Mar. 25, 1958.	7314	"	"
12	2446	Mar. 21, 1958.	Mar. 25, 1958.	7315	"	"
13	2447	Mar. 21, 1958.	Mar. 25, 1958.	7316	"	"
14	2448	Mar. 21, 1958.	Mar. 25, 1958.	7317	"	"
15	242131	Mar. 21, 1958.	Mar. 25, 1958.	7318	Joe Murdock	72778F
16	242132	Mar. 21, 1958.	Mar. 25, 1958.	7319	"	"
17	B 62533	Mar. 21, 1958.	Mar. 25, 1958.	7320	"	"
18	62534	Mar. 21, 1958.	Mar. 25, 1958.	7321	"	"
19	62532	Mar. 21, 1958.	Mar. 25, 1958.	7322	"	"
20	62539	Mar. 21, 1958.	Mar. 25, 1958.	7323	"	"
21	62535	Mar. 21, 1958.	Mar. 25, 1958.	7324	"	"
22	62536	Mar. 21, 1958.	Mar. 25, 1958.	7325	"	"

COST STATEMENT

The following costs for geophysical work done on this property has been taken from the cost records in the Granby office at Allenby. All costs have been based on the base rate of pay for men involved with limitations on pay for technical and professional men as required by the mining act. No allowance has been made for overtime pay or holiday pay actually earned by the men under the B.C. Labour Act requirements.

Miscellaneous charges are largely motor vehicle operating costs directly chargeable to the Regal Group.

No indirect costs such as proportions of the Allenby office expense, motor vehicle depreciation or insurance are included in costs as shown.

Schedule of Labour on Regal Group

Name		Job	Days	Actual or Allowed Rate	Total
Archibald	T.	Helper	7	13.12	91.84
Bradley	B.	"	28	13.12	367.36
Cook	B.	"	7 1/8	13.12	93.48
Cousins	G.	"	10 1/8	13.12	132.84
Fahrni	C.	" (Boy)	5 1/2	9.76	53.68
Gould	S.	"	12 1/4	13.12	160.72
Murdock	J.	Leadman	16	14.00	224.00
Postle	J.	Boy Helper	2 1/2	9.76	24.40
Sarich	G.	Helper	37 1/8	13.12	487.08
Tait	J.	"	15 7/8	13.12	208.28
		Sub Total:	141 1/2		$1,843.68
Fahrni	K.	Supervision	6 1/2	35.00	227.50
Matthew	P.R.	Geological Engineer	2 1/2	15.00	37.50
Day	H.W.	Surveyor, Draughtsman	17	15.00	255.00
		Sub Total:	26		520.00
		Total:	167 1/2		$2,363.68

Labour Distribution to Different Jobs on Regal Group

Grid Survey and Line Cutting:

Helper	1	shift at $13.12 =	13.12	
Surveyor & Engineer	7	shifts at 15.00 =	105.00	
				118.12

Magnetic Survey:

Helper	32	shifts at $13.12 =	419.84	
Leadman	11	shifts at 14.00 =	154.00	
Engineer	1	shift at 15.00 =	15.00	
				588.84

Electromagnetic Survey:

Helpers	42 7/8	shifts at $13.12 =	562.52	
				562.52

Dip Needle Survey:

Leadman	5	shifts at $14.00 =	70.00	
Helper	7/8	shifts at 13.12 =	11.48	
				81.48

Self Potential Survey:

Helpers	35 3/4	shifts at $13.12 =	469.04	
Boy Helpers	6 1/2	shifts at 9.76 =	63.44	
				532.48

Calculations and Draughting:

Draughtsman	11 1/2	shifts at $15.00 =	172.50	
Helpers	5	shifts at 13.12 =	65.60	
Boy Helpers	1 1/2	shifts at 9.76 =	14.64	
				252.74

Supervision:

Chief Geologist	6 1/2 shifts at $35.00 =	227.50	
			227.50

Total $2,363.68

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Summary of Total Costs for Regal Group (22 claims)

Wages and Salaries as per schedule	$2,363.68
Miscellaneous including motor vehicle operating costs	17.50
Total:	$2,381.18

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I hereby certify that the above is a true and correct statement of direct costs assignable to geophysical surveys carried out on the Regal Group Mineral Claims as described in this report.

J.D. Balden,
Office Manager.

THE GRANBY CONSOLIDATED M.S. & P. CO. LTD.
ALLENBY, B. C.

GEOPHYSICAL SURVEY

General Details:

The area covered by the Regal Group lies on the south-west slopes of Bald (Allison) Mountain, about three miles north-east of Princeton. Access is gained by a side road, known as the Five Mile Road, which leaves the old Princeton-Hedley Highway a half mile east of Princeton.

An old coal mine lies in the west side of the property, and the now defunct Princeton Cement Plant stands further down the hill to the south.

During 1951 the Granby Company did considerable work on some 66 claims in the same area. Stripping, trenching, and diamond drilling delimited two zones of very low grade copper mineralization consisting largely of malachite and azurite with very little visible chalcopyrite and some pyrite in fractured Nicola lavas. It appeared at that time that the copper values occurred in the oxidized limonitic material, while the original lavas contained negligible values.

Subsequent to this work all but the original group of six claims were allowed to revert to the Crown.

Early in 1958 it was decided to carry out a geophysical survey over the area covered by the Regal claims and some adjoining ground, so accordingly new claims were staked to secure the ground to be covered in case surveys should prove effective in finding mineralization under the extensive overburden. Field work with magnetometer and dip needle began in May and electromagnetic and spontaneous polarization surveys followed closely over the same grid. The E.M. survey covered the entire area but due to slower progress and increasing

dryness of the ground it was found necessary to limit the S.P. survey to the most promising part of the area. The survey was completed in July.

Besides work done in recent years by Granby crews, this area was studied and mapped by the Geological Survey of Canada, Memoir No. 243 by H.M.A. Rice, 1947 and Map No. 888A, Princeton Map Area give descriptions of formations encountered and in this report references are made to Rice's table of formations.

Grid Lay-out:

Base lines were surveyed along the west boundary of Regal 1 and 2 mineral claims and along a line 2000 feet to the east. These are tied together at the central line of the claims by a transverse survey line. These lines have been marked off with pickets at 200 foot intervals. Cross section lines were laid out in the east-west direction by the magnetometer party by pace and compass with pickets being placed at 200 foot intervals as markers for the self potential and electromagnetic surveys which followed.

Grid north as determined by the claim line is eight degrees west of true north line.

The origin of the grid system is placed at No. 1 posts of Regal 1 and 2 claims with measurements being made north and south and to the west from that point for the rectangular co-ordinates.

Magnetic Survey

Instruments:

The magnetometer survey was run with a "Radar" magnetometer manufactured by Eastern Geophysics Limited, 69 Kipling Ave., South, Toronto. This particular instrument has a ratio of 25.5 gammas per scale division.

The magnetic survey was extended into the more rugged rocky terrain to the south and east by use of the Sharpe D-2 dip needle. Two of these instruments were used. Both were manufactured by Sharpe Instruments, 6080 Yonge Street, Newtonbrook (Toronto) Ontario. Serial numbers are 654 and 732. Graduations are in degrees and calibration of the two instruments are about the same.

Control:

The base lines were run in as closed and balanced traverses of less than two hours duration and were referred to a control base station near Allenby which is assumed to have a value of 5,000 gammas.

No tie in with any known government established base station has been made so values shown must be considered as relative gamma values.

Method:

Magnetometer readings are taken at 200 foot spaced grid points as a general pattern. Where showings are known to exist, as proven by trenches, the readings are reduced to 100 foot spacing on the 200 foot grid lines. The exact location of the reading is marked on the ground by a picket bearing the co-ordinates of the grid intersection or by a small rock cairn or a strip of

red marking ribbon.

Barometer elevations and time of the magnetometer reading is also recorded.

The dip needles were operated on the same basis as the magnetometer, readings being taken over magnetometer stations and extended into new ground. By comparison of dip needle readings with magnetometer values a comparison chart was established for converting dip readings to equivalent gamma values. To distinguish the two types of readings, dip needle readings show gamma values to the closest even fifty so dip needle values always end with "00" or "50", while magnetometer readings show significant figures in both the tens and units columns.

Calculations:

To illustrate the method of note keeping and calculating gamma values, a page of magnetometer notes is given below. This is a transcript of pages 107 and 108 in the note book.

Line	Station	Time	Bar	Mag.	Adj.	Bal. Mag.	Diff.	Gammas	Remarks
00E	200N	8:52	2325	762	0	762	0	4,566	(Base Point
200S	2000E	9:17	2825	769	-2	767	+5	4,694	(See Page 18
	1800E	9:22	2725	758	-3	755	-7	4,388	
	1600E	9:26	2625	767	-3	764	+2	4,617	
	1400E	9:30	2615	766	-3	763	+1	4,592	
	1200E	9:33	2600	769	-4	764	+2	4,617	
	1000E	9:36	2590	767	-4	763	+1	4,592	
	800E	9:40	2550	765	-4	761	-1	4,540	
	600E	9:43	2500	755	-5	750	-12	4,260	
	400E	9:47	2450	778	-5	773	+11	4,846	
	200E	9:50	2375	774	-5	769	+7	4,744	
	00E	9:54	2350	750	-6	744	-18	4,107	
00E	200N	9:58	2325	768	-6	762	0	4,566	Check

The gamma values are those plotted on the attached map.

With the dip needle, notes are kept in the same way as above but due to the coarser reading of this instrument balancing was not necessary.

Mapping:

The volcanic rock of the Nicola series which underlies the greater part of the area being mapped, has varying magnetic properties from place to place. The values plotted are contoured on 1000 gamma intervals, considering that this degree of definition would smooth out irregularities due to variations of rock composition but would show up any appreciable body of hydrothermal or contact metamorphic replacement magnetite which might be valuable in themselves as iron ore, or which might be associated with valuable deposits of ores of copper and other metals.

Electromagnetic Survey

Instrument:

The E.M. survey was run with a portable E.M. outfit manufactured and distributed by Midwest Mining Supplies Limited, 860 King Edward Street, Winnipeg 12, Manitoba. The instrument was designed by F.E. Doolan of Central Geophysics Limited and is known by the name of "Doolimeter", Model No. 57-06-31.

This is a battery operated instrument with 18 inch coils and a continuous (1000 cps) signal. It is designed to operate at from 200 foot to 300 foot separation with the axes of the transmitting coil horizontal. Distortion of the transmitter field is measured by a clinometer on the receiving coil when it is held at the null point.

Method of Operation:

A two man crew carried out the E.M. survey on the Regal Group. This survey followed the magnetometer and Dip Needle surveys and the same stations were used for control. Readings were taken from diagonally opposite corners of the 200 foot squares on the primary reference grid. This was accomplished by having the two crewmen move along parallel cross section lines 200 feet apart, keeping one man 200 feet ahead of the other.

This diagonal procedure gives the best chances for receiving indications of ore bodies. In order that conductors at right angles to the direction of readings could be detected, alternate directions of readings were used for opposite lines.

Mapping:

In plotting, the receiver indications are plotted at the position of the transmitter, since conductors closer to the transmitter have more distorting effect on the field. A small direction line near the reading indicates the direction in which the receiver lays to obtain the reading. The values plotted on the accompanying electromagnetic map are actual degrees of inclination of the receiving loop. Values above four degrees in either direction are considered significant and checking is justified to determine whether the readings are due to ground profiles or possible conductors.

Self-Potential Survey

Instrument:

The self-potential survey of the claim group was made using a Sharpe Potentiometer graduated to read to three millivolts. A reel carrying 1000 feet of plastic covered copper wire and porous pot ground contacts completed the outfit. The pots are unglazed assay crucibles with copper rod contacts which are immersed in a copper sulphate solution in the pot to give a non-polarizing contact with the ground.

Method of Operation:

The self-potential survey was run along grid lines as shown on the accompanying self-potential survey map. The potentials of stations along the grid lines were compared to the potentials of points on the base lines. The values of points on the base line were established by base line readings and are referred to grid point 00N 00E which is assumed to have a value of 100 millivolts.

The procedure used operates from a base station of established potential. A porous pot ground contact is made at this point. Special precautions are necessary to see that all root and decaying vegetation material, which might give spurious values, has been cleared from the surface at the point of contact. If the ground is dry, the addition of water improves the contact. When the base line contact has been established the wire is run out from the reel along the cross section line for a distance of 100 ft. and ground contact is established there with another porous pot , taking every precaution made at the base point. When connections have been made between the pots through the potentiometer and the reel, a measurement

is made.

The potential difference obtained in millivolts is added to or subtracted from the base value depending upon whether it is higher or lower in potential with respect to the base point.

Succeeding readings are made along the line at 200, 300, 400 feet and so on until the 1000 foot point is reached. The comparison with the assumed potential of the base point is made in each case.

It has been found that points greater than 1000 feet apart are not practical. While comparisons of potential can be made, the problem of communication between the operators increases until operation is not efficient.

Mapping:

The relative potential of each contact point is shown on the self-potential map accompanying this report.

Since potentials developed in the ground due to the oxidation of sulphide ore bodies are almost invariably negative, contours are plotted showing potential values materially below the potential established as normal back ground for each area.

Results and Analysis

Magnetic Survey Results:

Examination of the magnetic map along with the known geological information suggests that the contact between the older Nicola volcanic series and the younger Princeton sediments can be defined in a general way. This indefiniteness is probably due to the relatively gradual thinning of the sediments remaining in the lower section where they overlie the Nicola rocks. In the old United Empire Cola Mine, now abandoned, Nicola rocks are reported in faces of tunnels. At the north-west corner of the map, on Regal 11 and 12 claims, appreciably lower magnetic values suggest considerable thickening of the depth of Princeton sediments.

Two spot highs of 9414 gammas and 7929 gammas occur on Regal No. 2 claim which is almost entirely underlain by Princeton sediments. The very localized nature of these magnetic effects not even giving an indication in readings 100 feet distant, suggests that they are due to boulders or slabs of magnetite bearing material which occur close to the surface immediately under the magnetometer stations. These could well have been transported by glacial action from the contact of the Okanagan batholith which lies about a mile away to the north-east and where contact metamorphism is known to have deposited magnetite in varying concentrations in rocks of the Nicola series.

Two areas of what appear to be rocks of great magnetic irregularity occur in the north-east and south-east corners of the map. Examination shows that these areas were the sections covered by dip needles. The control grid of magnetometer readings show little difference in the range of readings than that obtained elsewhere over the Nicola rocks. It is felt that this apparent

irregularity is due largely to the instruments, and map values in these sections are not of any appreciable geological significance.

The remainder of the map area, covering the ground previously investigated by stripping and drilling, shows a fairly constant range of values extending through about 1000 gammas. This can be considered the normal range for rocks of the Nicola Series where rock types are variable and occasional magnetite rich lavas can be expected. Although a limestone bed occurs in one of the lower open cuts, no magnetic indications suggesting the presence of replacement magnetite bodies were found.

Electromagnetic Survey Results:

In the north-west side of the map area, on Claims Regal 9 and 11, considerable interference with the operation of the E.M. outfit was encountered due to the presence of the C.P.R. telegraph and telephone line. Erratic high readings and failure to recognize any null point over the hum of the electric field of the communication wires makes this area unsuitable for recognition of earth conductors by the E.M. apparatus.

On Regal No. 4 claim a number of readings of four degree tips or better were recorded. This seemed significant more especially since the high readings fall immediately to the south of a zone of stripping near the brow of the hill. In order to check this indication a series of three lines were run in a direction from NW to SE across the zone of irregular readings. These lines are shown on the E.M. map. Readings at 50 foot intervals with the transmitter stationary at a point of a high E.M. value are as follows:

Footage	Line 1	Line 2	Line 3
0	1L	-	0
50	1R	-	1R
100	0	6R	0
150	1L	1R	1L
200	1L	0	0
250	1L	0	1R
300	3L	0	0
350	4R	0	1R
400	8R	0	0
450	8R	2R	0
500	7R	2R	1R
550	9R	1R	0
600	6R	3L	0
650	3R	2R	1R
700	-	1R	-

The high readings at the SE end of line No. 1 all occurred where a ridge intervened between the transmitter and receiver and are due to distortion of the transmitter field by irregular ground profile rather than the presence of a conductor. Lines 2 and 3, where transmitter and receiver were intervisible, showed no "cross-overs" which would indicate the presence of a conductor. Checks of topography where other high readings were obtained to the south-west of Line 1, show that here also irregular ground surface would account for anomalous readings.

Self-Potential Survey Results:

The map of self-potential or spontaneous polarization values shows two general areas of lower than normal readings. These areas lie on Regal No. 6 and Regal No. 4 Mineral Claims. The level of readings is in the first case about 50 millivolts below the regional background and in the second case about 30 millivolts below background.

The Regal No. 6 S.P. anomaly occurs along a north-south draw in which some swampy conditions exist. It seems possible that the presence of

salines and a marked moisture difference between contact points might be sufficient to account for this anomaly. The potential difference is not sufficient to be due to a decomposing sulphide ore body.

The Regal No. 4 S.P. anomaly occurs almost directly over the principal area of E.M. irregularity, immediately south of the old workings. The fact that this is an area of rocky and irregular topography may have some effect on the potential readings. Poor contacts and dry conditions of the soil may give relatively lower values in this area.

Conclusions and Recommendations

Magnetic readings appear to give no information of importance. Initial E.M. readings indicated an area of interest on Regal No. 4 M.C. but later checking showed discouraging results. Self-Potential readings show two low grade anomalies, one of which corresponds with the E.M. area of irregularity on Regal No. 4.

It is recommended that a geochemical survey be run over the area of Regal No. 4 mineral claim and if any indications are found by this method of investigation, some stripping or drilling should be considered at once.

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MAPS

The following schedule of maps accompanies this report to show the location of the claims and the results and positions of geophysical instrument readings.

#1 1. Key Map of British Columbia.

#2 2. Key Map of Princeton District.

#3 3. Regal Group Surface Geology and Claims. (in pocket)

#4 4. Regal Group Magnetometer. (in pocket)

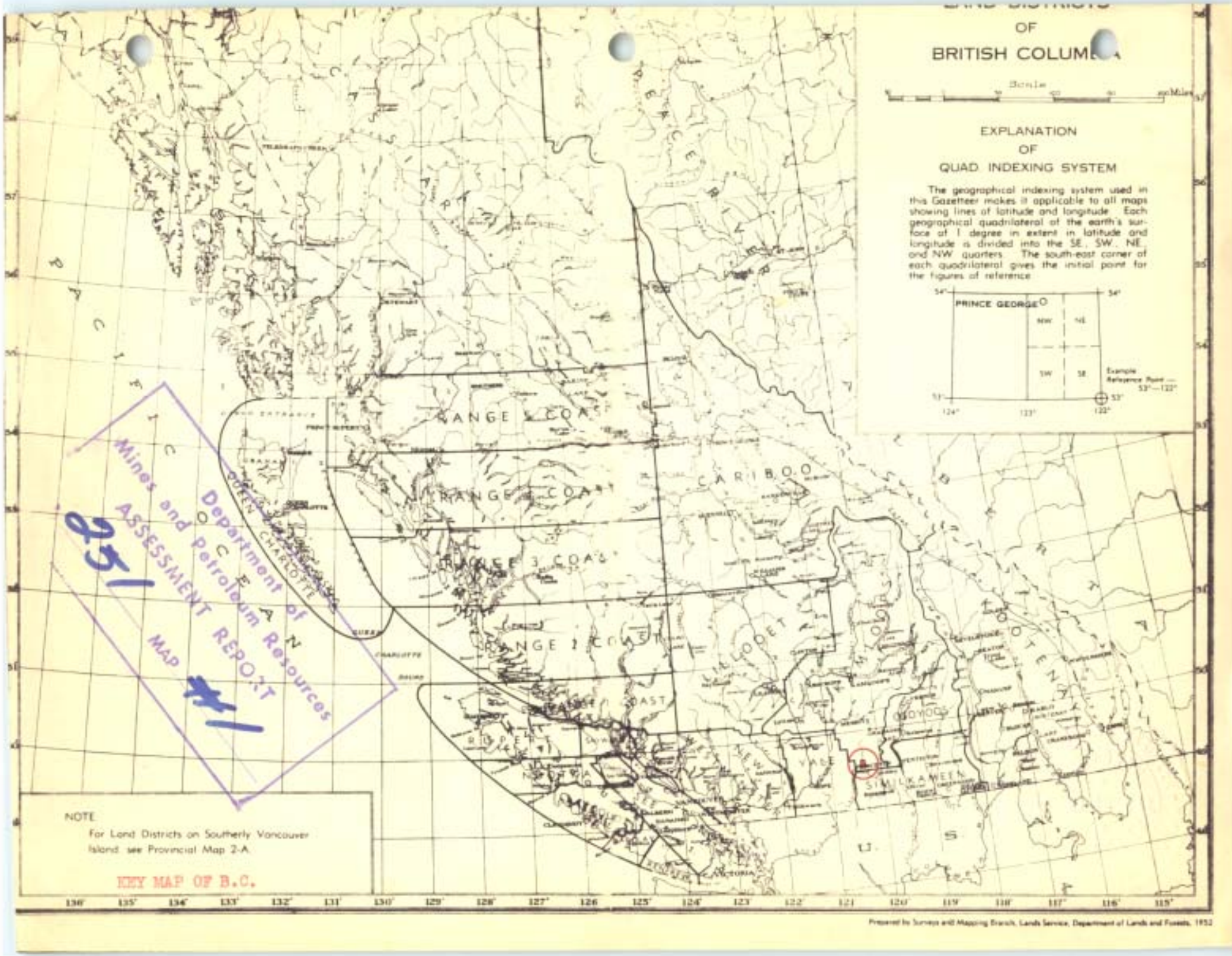
#5 5. Regal Group E.M. Readings. (in pocket)

#6 6. Regal Group S.P. Readings. (in pocket)

Report respectfully submitted,

Keith C. Fahrni

Keith C. Fahrni, Prof. Eng. in B.C.
Chief Geologist.



NOTE
For Land Districts on Southerly Vancouver Island see Provincial Map 2-A.

KEY MAP OF B.C.

Prepared by Surveys and Mapping Branch, Lands Service, Department of Lands and Forests, 1952

DEPARTMENT OF LANDS AND FORESTS

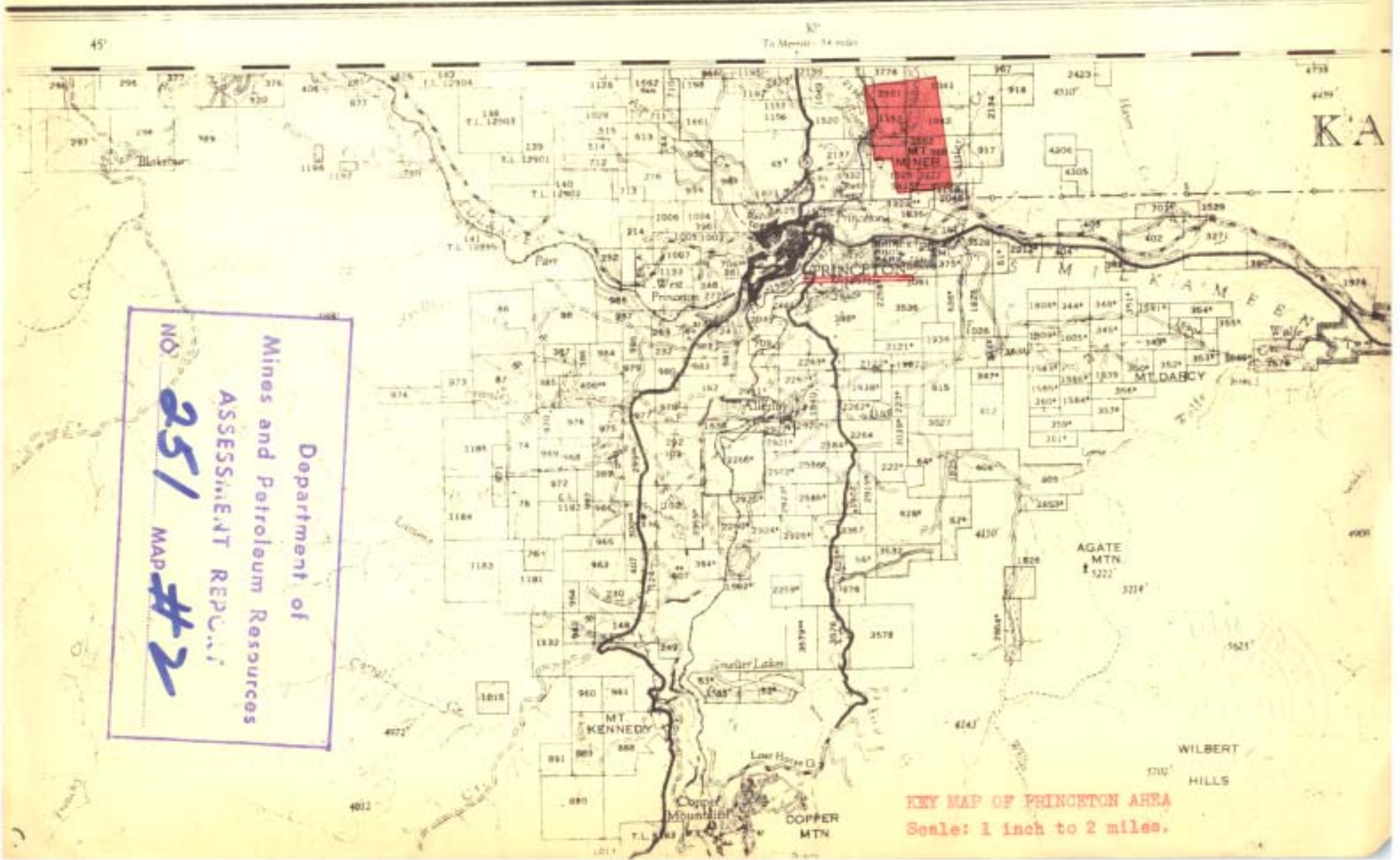
BRITISH COLUMBIA

HONOURABLE R. E. SOMMERS, MINISTER

C. E. HOPPER, DEPUTY MINISTER OF LANDS

G. S. ANDREWS, DIRECTOR OF SURVEYS AND MAPPING

FIRS



KEY MAP OF PRINCETON AREA

Scale: 1 inch to 2 miles.

7000N 6000E 5000N 4000N 3000N 2000N 1000N 00N 1000S 3000S 5000S 7000S 6000E

4000E

REGAL Nº 14 | REGAL Nº 16 | REGAL Nº6. | REGAL Nº5. | REGAL Nº 18 | REGAL Nº 20

REGAL Nº 13. | REGAL Nº 15 | REGAL Nº 3. | REGAL Nº 4 | REGAL Nº 17 | REGAL Nº 19

2000E

REGAL Nº 12 | REGAL Nº10 | REGAL Nº2. | REGAL Nº1 | REGAL Nº 22 | REGAL Nº21

00E

REGAL Nº 11. | REGAL Nº 9 | REGAL Nº 8 | REGAL Nº 7

1500W

2000W

4000W

Surface Scraped Off.

Lot 1042

Lot 968

Lot 1193

Lot 2552

Unaltered Nicola Lavas and a 2 feet Limestone Bed.

True North

251

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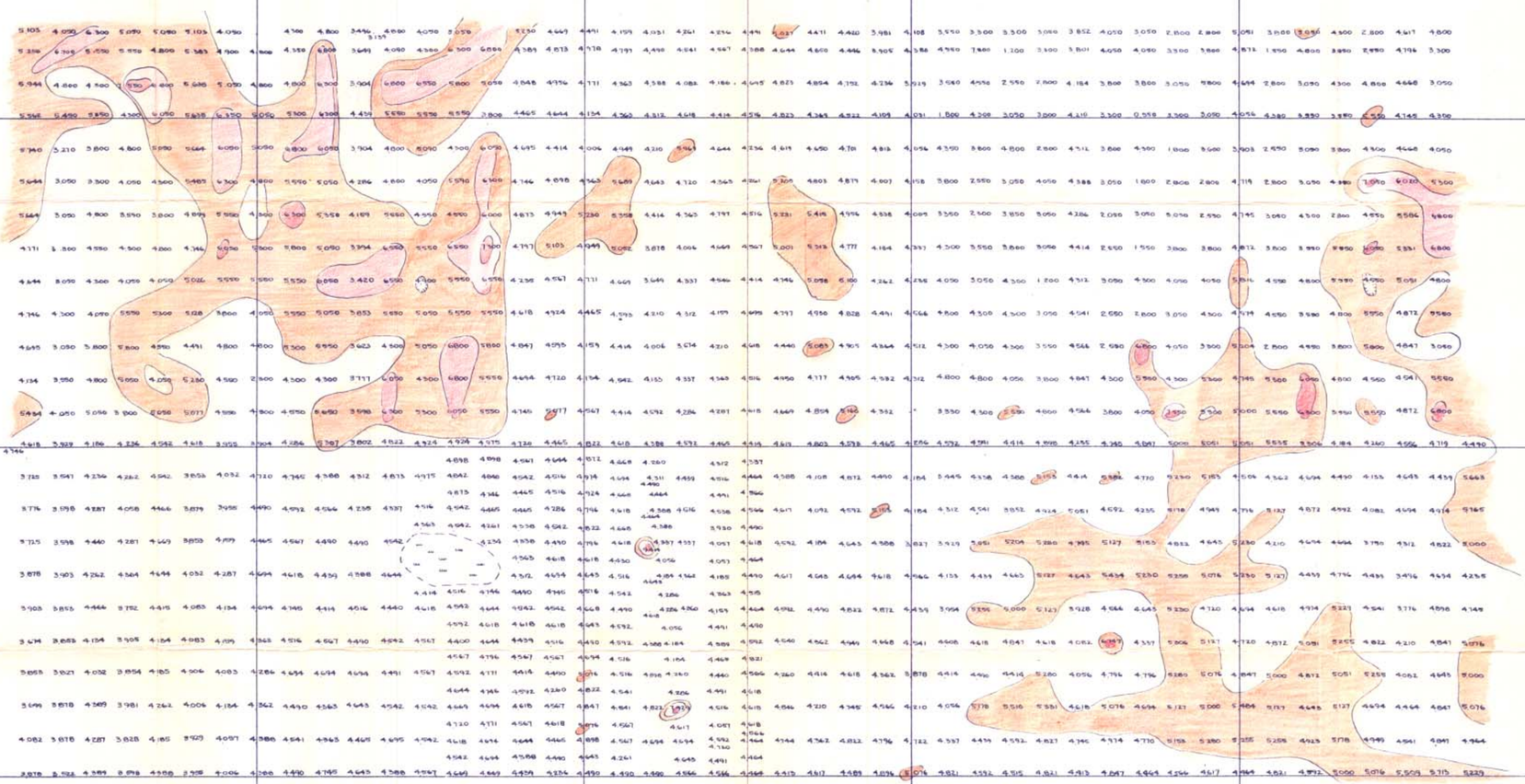
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 251 MAP #3

GRANBY CONS. M.S. & P. CO. LTD.
COPPER MOUNTAIN, B.C.

SCALE: 1 INCH = 400 FEET

TITLE REGAL GROUP
SURFACE GEOLOGY.

ELEV. | NO.



251

LEGEND

GAMMAS	
5000	WHITE
6000	ORANGE
7000	LIGHT RED
	DARK RED

Values shown in gammas with reference to Allenby Base which has assumed value of 5000 gammas.

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 251 MAP #4

GRANBY CONS. M. S. & P. CO. LTD.
COPPER MOUNTAIN, B.C.
SCALE: 1 INCH = 400 FEET

TITLE REGAL GROUP MAGNETOMETER
ELEV.
NO.

6000E 5000N 3000N 1000N 00N 1000S 3000S 5000S 6000E 7000S

4000E

2000E

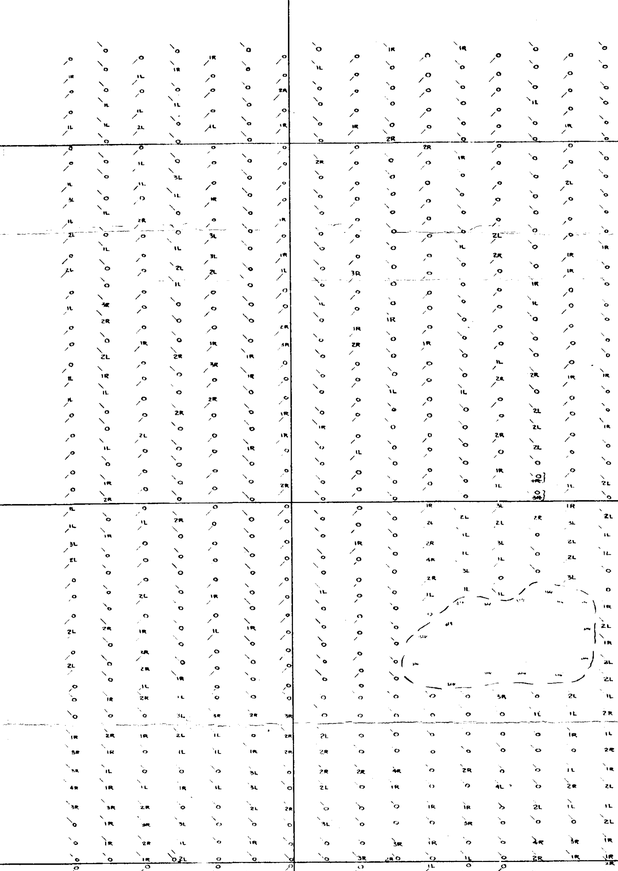
00E

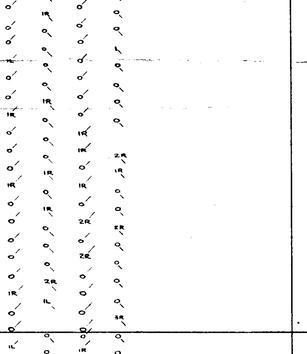
1500W

2000W

7000N 5000N 3000N 1000N 00N 1000S 2000S 5000S 7000S

4000W





Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 251 MAP #5

251

Kevin Falvey
March 6/80

GRANBY CONS. M.S. & P. CO. LTD.
COPPER MOUNTAIN, B.C.
SCALE: 1 INCH = 400 FEET

TITLE REGAL GROUP
E.M. READINGS

ELEV. | No.

7000N
5000N
3000N
1000N
0
1000S
3000S
5000S
6000E
7000N
4000E
2000E
00E
1500W

PROFILE ON 2000E
BASE 100 Millivolts
Vert Scale: 1" to 40 MV.

PROFILE ON 000E
BASE 100 Millivolts
Vert Scale: 1" to 40 MV.

TRUE NORTH

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ASSESSMENT REPORT
NO. 851 MAP #6

251

Value for Point 08-06 assumed to be 100 Milli Volts

GRANBY CONS. M.S. & P. CO. LTD.
COPPER MOUNTAIN, B.C.

SCALE: 1 INCH = 400 FEET

TITLE REGAL GROUP
SP READINGS.

ELEV.

NO.