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PHOJECTS SECTION

REPORT
ON
MAGNETOMETER and ELECTROMAGNETIC
SURVEYS
of a'

FIFTY CLAIM GROUP SEWELL and REEVES TWPS. N.T.S.: 42-A-4 & B-1

PORCUPINE MINING DIVISION ONTARIO

J. A. KELLY, P.ENG DECEMBER 8, 1972

1. PROPERTY:

Total number of claims
Recorded numbers

- 50 unpatented mining claims
- P-313442 450 inclusive

P-332184 - 203 inclusive

P-313436 - 437 inclusive

P-332556

P-332540 - 549 inclusive

P-332566 - 573 inclusive

2. LOCATION:

Township

N. T. S.

Latitude

Longitude

Mining Division

- Sewell and Reeves Twps.

- 42-A-4 and B-1

- 48° 12' N

- 81º 59' N

- Porcupine

3. OWNERSHIP AND TITLE:

Mineral rights held by

- John J. Johnson 112 Second Avenue, Timmins, Ontario

Percent Interest

- 100%

4. ACCESS:

- (a) Summer Highway 101 from Timmins or via light aircraft to Sewell Lake.
- (b) Winter As above

5. HISTORY

Early exploration on iron formations was reported in the Groundhog River area as early as 1903. The first gold was dis-

covered and staked in 1915.

Following World War II, gold exploration resumed in the general area. Activity increased with the discovery of the Joburke Mines deposit in Keith Township.

Subsequent to 1950, other deposits than gold attracted exploration companies and syndicates to the district. Iron, copper, nickel, zinc. antimony and asbestos occurrences, deposits and prospects have been actively investigated. At the present time only one mine, the Johns-Manville, Reeves Mine is in production in the area. This asbestos fibre producer is located in Reeves Town-ship about three (3) miles west of the Johnson claim group.

Previous exploration activities on or adjacent to the Johnson claims are summarized below -

1916 - Lamport-Lumbers Property:

Five (5) patented claims adjoining the present Johnson group. Gold was discovered in a quartz vein cutting sheared mafic volcanics. An assay of 0.02 oz. Au was reported from pits excavated on the vein. Other quartz stockwork and vein occurrences associated with shear zones are reported to contain various amounts of pyrite, pyrrhotite and chalcopyrite. The last activities on the ground were reported in 1924.

1947 - Fawcett Property:

A quartz vein in mafic volcanics was trenched and drilled but no gold values were encountered. The occurrence is located in mile west of Sewell Lake and is mile south of Highway 101 in what is now claim P-332193.

1957 Canadian Johns-Mansville Mines Limited (O.D.M. File # T-647)

The company completed a geological survey of a 31 claim group covering most of the area now held by Johnson. The mapping, conducted on east-west lines spaced at 300 feet, showed the area to be underlain by mafic, amphibolitized gabbros and altered metavolcanics.

Metallic mineralization, where observed occurs as follows:

- (a) Minor chalcopyrite and pyrite in vuggy quartz veins.
- (b) Disseminated pyrite in phyllite zones in medium grained quartzites.
- (c) Excess magnetite in amphibolitized coarse massive flows and gabbroic intrusives.

It was also found that sulfide occurrences in general contained only low base metal content. In addition no alteration envelopes which could be attributed to hydrothermal metalization were recognized.

1971 Card Lake Copper Mines Limited (O.D.M. File # T-44

Conducted a program of magnetometer. EM surveys and a short drill program on claims adjoining the Johnson block on the south and south-west. Geology is essentially the same. The Card Lake target was a high-grade antimony showing. Drilling data shows the main zone consists of antimony and copper sulfides in a (possible) altered tuffaceous sequence. Assay results were not encouraging.

6. GENERAL GEOLOGY:

As previously mentioned much of the claim area was mapped by Johns-Mansville. In 1966-67 the entire Reeves-Sewell area was mapped by V.G. Milne for the O.D.M.. This map, O.D.M.N.A. Map 2230, shows the claim area to be underlain by sheared and foliated light and dark weathering intermediate to mafic metavolcanics. Essentially three main types were recognized in what is now the Johnson ground.



- 1) Fine grained quartzite with intercalated graphite
- 2) Chloritized/sericitized amphobolite
- 3) Hornblende metagabbro and porphyritic diabase

The diabase dikes trend north-south respectively through the center and western margin of the claim group.

Structurally the metavolcanics have been isoclinally folded.

Extensive shearing foliation and metamorphism has occurred.

Schistocity and/or gneissocity follow a general east-southeast trend.

Two known faults occur in the claim block. The Gosslin fault strikes north-northeast through claims P-332541 and P-332542. The other (unnamed) strikes northwest through claims P-332194, P-313443 and P-313448 about ½ mile southwest of Sewell Lake.

Mineralization in the form of sulphides in quartz veins and masses is located in claims P-313446 through P-313447 and, as described previously, in P-332193.

7. MAGNETOMETER SURVEY:

- (a) Grid -
 - 1) baseline bearing 3150 & 0000, length 14,400, feet.
 - 2) crossline bearing 045° & 000° @ 400 ft.intervals.
 - 3) total line/miles = 46.9
 - 4) stations total 4680 @ 100 foot intervals.
 - 5) tie-in _ to Reeves/Sewell Twp. boundary 650 S. of Highway 101
 - 6) Personnel three (3) man crew supervised by John J. Johnson,
 112 Second Avenue,
 Timmins, Ontario.
- (b) Survey Method -
 - 1) Instrument McPhar M700 Fluxgate magnetometer, a battery operated, transistorized, direct

reading instrument which measures the properties that vertical component of the earth's magnetic field.

- 2) Sensitivity to (+) ot (-) twenty gammas/scale division on the 1000 scale setting.
- 3) Theory of Method the fluxgate magnetometer employs a saturable core system consisting of two highly permeable metallic strips about which primary coils have been wound. A low frequency field (1 KHz) is applied to the coils through an oscillator. The field is sinusoidal and drives the strips into saturation during each half cycle resulting in an even change of permeability of these cores (at 2 KHz). Any ambient magnetic field acting on this system yields a flux or phase variation which, when "gated" at the proper frequency (in this case the second harmonic), induces voltage pulses in an adjacent secondary winding. These pulses are amplified, fed into a phase dector and emerge as a D.C. signal. This signal is directly proportional to the strength of the ambient 'field and, therefore the strength of the field can be read on a voltmeter calibrated in gammas. The accuracy of the McPhar instrument is generally within 1% of full scale between the 1000 and 10,000 gamma ranges and within 1% between the 10,000 to 30,000 gamma range
- 4) Procedure a magnetic base station was established at 30N 44 E . From here auxilliary stations were established and tied to the main station. Readings taken at 100 intervals on crosslines and the baseline. Check readings were taken at the auxilliary base stations in order that a correction curve for the diurnal variation could be established. Using this curve, all

readings were corrected for dwirnal and instrument drift variations.

- 5) Number of Readings 4680
- Personnel John J. Johnson,
 112 Second Avenue,
 Timmins, Ontario.
- 7) Date (s) of Survey March 1 to June 2, 1972

8. ELECTROMAGNETIC SURVEY:

- (a) Grid same as for magnetic survey
- (b) Survey Method -
 - Instrument McPhar SS-15 Vertical Loop EM System; a dual frequency fixed source, tilt angle method.
 - 2) Operating Frequency 1000 and 5000 C.P.S.
 - 3) Operating Range 2000 feet
 - 4) Transmitter Power 300 watt supplied by gas-powered motor generator.
 - 5) Transmitter a mast-mounted, triangular cable loop about 10' per side. The loop can be rotated about vertical axis.
 - 6) Receiver a tuned pick-up coil assembly together with a transistorized amplifier with earphone outlet and a built-in clinometer for dip angle measurement.
 - 7) Theory of Method the basic principle is essentially that a horizontal electromagnetic field generated by passing an alternating current through a wire loop will induce electrical "addy" currents in any adjacent conductive media in the earth. The induced current in any conductor will in turn re-generate as secondary, electromagnetic field. The location and orientation of the principal axes of any secondary field and, hence, the location and orientation of the source conductor can be determined by measuring tilt angles with a receiving coil. To do this the

coil is rotated about a selected axis until a null position is obtained. This null position is essentially the orientation of the receiver coil producing minimum induction. The axis of orientation must be selected such that it is horizontal and lies in a direction parallel to the plane of the receiver coil and normal to the plane of the transmitting loop.

8) Procedure - sites for the transmitter locations are selected at convenient points throughout the property. The transmitter apparatus is set up and current is applied. The plane of the loop must be kept as nearly as possible in a direction normal to location of each receiver station. The person operating the receiver orients the coil about a vertical axes until a null point is established. The direction of the plane of the coil is now parallel to an axis which is normal to the plane of the transmitter loop. Next, the receiver coil is held in a horizontal position in this direction.

If no secondary field is present a null will be obtained in the horizontal position. If such a field is present, its tilt angle is measured by rotating the coil until a null is perceived. The dip or tilt angle is read on a clinometer attached to the receiver apparatus.

The amount of tilt recorded at each station is plotted graphically on the line plane and connected by a curve.

A cross-over point is in theory, that point on the line where the curve changes from positive to negative. In practice the cross-over point is usually a point of inflection on the curve. This is due in part to distortion of the secondary field and to interference from other, minor, conductors.

9. RESULTS:

- (a) Magnetometer Survey the change in strike of the magnetic trend from east-west to southeast reflects the general pattern of the metamorphic fabric of the metavolcanic rocks. Intrusive rocks mapped in previous surveys do not seem to exhibit a magnetic "relief" of sufficient contrast to distinguish them from the older flows. This is probably due to the intense, superimposed regional metamorphism.
- (b) Electromagnetic Survey no conductors of any magnitude were indicated. Several weak cross-overs appear to be of negligible interest.

10. CONCLUSIONS:

On the basis of the data obtained there is no evidence that important zones of metallic mineralization occur in the ground covered by the Johnson claims. Further work is not recommended.

Respectfully submitted,

James A, Kelly, P.Eng.

December 8, 1972

TR. O. JUNKIA



MR. J. A KELLY
124 CHURCHIII St.,
TIMMINS, ONT



MR. FRED W. MATTHEWS.



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SUPERVISOR-

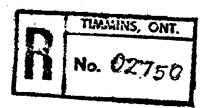
PROJECTS SECTION.

W-1617 - WHITNEY BLOCK.

PARLIAMENT BOILDINGS.

QUEEN'S PARK

TORONTO, POTARIO



ATTN: MR. O. JUNKIN

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS		IMS TRAVERSED	
Township or Area Somell and Jeanes Tup.	List	numerically	
Type of Survey <u>Slectro Magnetie</u> A separate form is required for each type of survey	see L	st	
Chief Line Cutter John S. Johnson			
Address Address		CEIVED	
Party Chief token & Solinson. 1/2 2 nd leve Timmins Out	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	C 14 1972	
Address		PROJECTS	
Name		BECTION	
724 CHURCHILL ST. TIMMINS ONT. Address			
COVERING DATES		.,,	
Line Cutting February 14/12 to May 2/12.	••••	•••••	
Field Musch 1/2 to stune 2/72 Instrument work, geological mapping sampling etc.		, ,	
Office June 25/72 - July 10/72			
			.
Make, Model and Type McPhan-55 1.5 Vartical Long	<u>5</u>		
Scale Constant or Sensitivity 1000 C.P.S. Or provide copy of instrument data from Manufacturer's brochure.			
Radiometric Background Count		• • • • • • • • • • • • • • • • • • • •	
Number of Stations Within Claim Group 4,680			
Number of Readings Within Claim Group			
Number of Miles of Line cut Within Claim Group 46.9			
Number of Samples Collected Within Claim Group			
CREDITS REQUESTED 20 DAYS 40 DAYS Includes per claim (Line cutting)	TOTAL	50	
Geological Survey	Sand in dual	inter to	
Geophysical Survey	Send in dupli	THEWS	
Geochemical Survey	SUPERVISOR-PR DEPARTMENT NORTHERN AF		i 1
DATE October 10/72 SIGNED John Splinson	WHITNEY BLOC QUEEN'S PARK TORONTO, ONT	K	

Performance and coverage credits do not apply to airborne surveys

SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS

AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

- (a) substantial and systematic coverage of each claim
- (b) line spacing not exceeding 400 foot intervals
- (c) stations not exceeding 100 foot intervals or
- (d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

List of Claims

P	313 442	-P 332 540
P	313 1143	P 332 541
12	313 214	P 332 542
P	313 11/5	P 332 543
P	313 1116	P 3325 44
J2	313 417	P 332 545
P	313 418	P 332 546
P	313 1149	P 332 547
J ^o	313 450	P 332 548
P	332 184	P 332 549
J?	335 18S	F 332 566
P	332 186	P 332 567
P	332 187	P 332 568
P	332 188	P 332 569
P	332 189	P 332 570
P	332 190	P 33 2 571
1	332 191	P 332 572
12	332 192	P 332 573
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P	332 200	
12	332 201	
P	282 202	
17	333 203	
10	.313 1136	
P	313 437	
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John Johnson

ASSESSMENT WORK DETAILS	MINING CLA	1	1	
Township or Area Sewell and Reenes Trops	List	numerica	шу	
Type of Survey Magnetometer A separate form is required for each type of survey	Sel	lis	t	
Or Contractor 112 2nd ave Timmine, Ont.	P.	CEI	, — —	
Party Chief John J. Johnson		C . 4	• • • • • • • • • • • • • • • • • • • •	
112 2 nd ane. Timmine, Ont		PROJE SECTI	CTS ON	
Consultant J. A. KELLY Name	•••••	,	••••	
724 Churchill St TIMMINS - ONT. Address				
COVERING DATES	•••••	• • • • • • • • • • • •		
Line Cutting & February 14/72 th May 2/72		•	• • • • • • • • • • • • • • • • • • • •	,
Field Musch 1/72 to Sune 2/72 Instrument work, geological mapping, sampling etc.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	***********	n. 1	
Office June 25/72 to July 10/72.	••••			
INSTRUMENT DATA		••••••	•••••	
Make, Model and Type Mc Phan - 11700 - Flugate				
Scale Constant or Sensitivity 20 gammas per Scale Di				
Radiometric Background Count	***************************************			
Number of Stations Within Claim Group 4680	•••••	••••••	• • • • • • • • • • • • • • • • • • • •	
Number of Readings Within Claim Group 4680	***************************************	•••••		
Number of Miles of Line cut Within Claim Group 46.9	***********	31	**************************************	• • • • • • • • •
Number of Samples Collected Within Claim Group	•••••			
CREDITS REQUESTED 20 DAYS 40 DAYS Includes (Line cutting)	TOTAL	50		
Geological Survey				
Geophysical Survey	Send in dupli		:	
Geochemical Survey	SUPERVISOR-PR DEPARTMENT NORTHERN AF	OJECTS OF MIN	SECTION ES &	
DATE October 10/72 SIGNED SIGNED STANSING	WHITNEY BLOO QUEEN'S PARK TORONTO, ON	K		

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	313 143	P 332 541	
P	313 144	P 332 542	
P	313 445	P 332 543	
P	313 1146	P 332544	
12	313 447	P 332 545	
P	313 448	P 332 5-46	
P	313 449	P 332 541	
p	313 450	P 332 548	
P	332 184	P 332 549	
p	332 185	P 332 566	
P	332 186	P 332 567	
P	332 187	P 332 568	
P	332 188	P 332 569	
P	332 189	P 332 570	
P	332 190	P 332 571	
17	332 191	P 332 572	
12	332 192	P 332 573	
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P	332 194		
P	332 195		
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P	332199		
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P	332 201		
P	332 202		
P	332 203		
P	313 436		
P	313 437		
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