

GEOLOGICAL REPORT

by

M. K. Pickard

63A.118

November 30th, 1949 ✓



31M055E0086 63A.118 GILLIES

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Mr. J. M. Easson,
President,
South Giroux Mines Limited,
217 Bay Street,
Toronto 1, Ontario.

Dear Sir:

On the 14th of November I went to Cobalt and, as you requested, attempted to carry out a detailed geological survey of the claims of the South Giroux Mines Limited. The purpose of this survey was to establish the most satisfactory method of exploring the ground for possible shoots of high-grade silver ore. Unfortunately, snow at first hindered and finally halted my efforts before the survey could be completed. The areas which have been mapped in some detail, and those which are still to be mapped, can be seen on the plan which accompanies this report. North-south lines have been cut and picketed at 100' intervals on claims A99 and A100 and at 200' intervals on the remainder of the group and it will be a relatively simple task to complete the geological survey once the snow goes.

From the work carried out to date it can be seen that the Nipissing diabase lies under the Keewatin volcanics on these claims. The diabase is exposed along the north and west boundaries and the contact appears to dip at from 15° to 30° to the southeast. While the individual flows of the Keewatin series were not mapped, various flow structures revealed that the strike was generally northwesterly and the dip steeply to the northeast.

In the area mapped four Keewatin rock types were recognized:

1. Pillow lavas.
2. Andesitic volcanics with some flow structures.
3. Dark, massive, aphanitic to fine-grained rocks which are probably volcanics but possibly intrusives.
4. Dark, massive, coarse-grained rocks which are probably intrusives but possibly altered volcanics.

To establish contacts which are now obscured by snow, to trace out the individual flows, to exactly classify #3 and #4 and to work out the Keewatin structure would require a great deal of detailed work. With the constant threat of snow this was not done.

Mr. J. M. Easson,
South Giroux Mines Limited

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The Keewatin series is cut by three types of veins and veinlets - quartz, aplite and calcite. The quartz veins are older than the diabase and the aplite and calcite somewhat younger. Where seen, the aplite veins contained galena, sphalerite and epidote and the calcite veins were completely barren. There is a distinct possibility that gradational phases between the two exist.

Near the northeast corner of the group the diabase appears to be faulted or steeply folded. The contact between the diabase and the Keewatin can be seen along a north-facing escarpment which strikes S.65 E. from the northeast corner of A100. The escarpment fades as it passes over the boundary between A99 and A100 and the contact here becomes covered with overburden and waste from #3 shaft. The contact is next seen some 200' west and 100' north of the northeast corner of A99 and here, in spite of the southerly dip, appears to be about 10' below the previously mentioned showing. This anomaly could be explained by :

1. A fold with a north-south \pm - axis.
2. A fold with an east-west \pm - axis
3. A north-south \pm - fault with the west side moving a) down
or b) north.
4. An east-west \pm - fault with the north side moving down.

Air photographs were examined after the anomaly had been discovered and distinct lineations could be seen both north and south of #3 shaft running somewhat south of west. (See air photograph covered with perf-trace.) With the general north-westerly strike which seems to prevail in this region these lineations would not be stratigraphic features and, as relatively sharp folding would be necessary to produce the observed dislocation in the diabase, it is possible that they represent faults. Against this argument it should be noted that sections and plans of the old workings in the vicinity of #3 shaft show no extensive faulting which can be directly correlated to these lineations.

The geological work to date has shown beyond reasonable doubt that the diabase-Keewatin contact, which is invariably associated with the deposition of silver, exists under all claims of the South Giroux property. However, the survey also showed that numerous aplite "veins" exist and failed to reveal the presence of cherty sediments - - factors which are considered by some to be unfavourable to silver deposition. It is possible that further work would reveal the presence of the cherty sediments but nothing can eliminate the aplite "veins".

The objective of the geological survey was to establish the most satisfactory method of exploring the ground for possible shoots of high-grade silver ore. If it is not necessary to consider the time element I would recommend that the survey be completed in the spring. At the time the position of calcite veins which are thought to exist in the old trenches could be ascertained exactly and correlated with available data on underground development which is on hand. Some original surface exploration might also be carried out at the same time. When all the facts are accumulated then decide on the drilling programme.

November 30th, 1949.

If, however, the decision is to proceed with some work immediately an exploration plan should be devised which makes use of the available data and, at the same time, adds to the knowledge of the property. If this is to be the case I would recommend that :

1. The relative elevations of #1, #2 and #3 shafts and the diabase-Keewatin contact along the northern boundary of A99 be determined. When this has been done it will be possible to establish the dip of the diabase-Keewatin contact with some certainty.

2. A diamond drill hole be driven parallel to the Keewatin-diabase contact from some point along the northern boundary of A99, striking 150° to 160° T. Such a hole would be within 100' of the contact throughout its entire length and, therefore, in the favourable zone for silver deposition. It would explore the region under the three lineations shown on the photographs and might intersect the 12" calcite vein reported in the Log of #2 Hole of the Oxford Silver Mine. The hole should be at least 600' long and could be extended to 1200' if further exploration in this direction is desired. The old workings from #3 shaft should be avoided if possible.

3. A diamond drill hole be driven from a point on the east boundary of A100 approximately 200' from the northeast corner of the claim. The strike of this hole should be southwesterly and the dip parallel to the contact. The objective would be to find a site that would permit the hole to be within 100' of the contact throughout its length. Such a hole would locate veins which might parallel the hole recommended in 2 and might intersect the southern extension of the fractures reported to have carried silver values in the west drift on the 75' level from #3 shaft. The hole should be at least 600' long.

4. A diamond drill hole be driven from a point on the east boundary of claim A100 about 700' south of the northeast corner. The direction of the hole should be southwesterly and the dip about 45° . This hole should be spotted so that it would intersect the 8" calcite vein shown on the log of diamond drill Hole #4 about 50' from the contact and 50' north of #1 shaft. Approximately half the length of this hole would be in the favourable zone. The hole should be drilled to the contact at about 275'.

5. A hole be drilled from approximately the same area as 3 at a 30° angle for a length of 350' to explore the area under the north-south lineations shown on the air photographs of A100 (see air photograph covered with perf-trace).

The exact location, direction and dip of all holes suggested will depend on the local topography and on the results of the survey recommended in 1. The cost of these four holes would be approximately \$6,000. or \$7,000.

Yours truly,

MKP-JWL

M. K. Pickard

*Geologist
Venturas Ltd.
25 King St W. Toronto*

R E P O R T
on
SOUTH GIROUX MINES



31M05SE0086 63A.118 GILLIES

Foreword

This report deals principally with the geology of the property and the possibilities as suggested by a study of the surface rocks and the drill core. Earlier reports have covered other factors in considerable detail.

Location and Access

The property, consisting of approximately 240 acres, is located in the north western section of what is known as the New Lake Basin. It is in Gillies Limit, west of the southerly three quarters of Lot 3, Concession 3 in Coleman Township. It is reached by wagon road from the Rochester shaft of the Silver Miller Mine which is on a good gravel road from Cobalt. The distance over the wagon road is roughly one mile and a half to the South Giroux #2 Shaft.

History

Much surface work in the form of trenching and small test pits has been done through the years on most of the claims in the group. Most of these trenches have not been mapped, they are largely filled in and it is impossible to tell what they exposed. In addition to the surface work a deeper pit called #1 Shaft was sunk and shafts #2 and #3 were put down to 150 ft. and underground work and diamond drilling was carried out at both of these workings.

General Geology

The New Lake Basin consists of an area of Keewatin lavas underlain by the Nipissing Diabase sill. There is a small area of Cobalt Series sediments overlying the Keewatin near the south side of New Lake. Both the surface of the Keewatin and the sill are basin-shaped.

The property is mainly Keewatin pillow lava with some Nipissing Diabase outcropping along the north and west boundaries.

The Silver Miller, Cobalt Lode, Christopher, New Silver Banner and Mayfair properties are presently working underground in the New Lake Basin and the Silver Lake Mines is doing surface diamond drilling. All of these properties are working on or looking for silver ore at the upper contact of the diabase. The Beaver and Temiskaming Mines which had a large production of silver from the same upper contact are not really in the New Lake Basin since they lie along the east flank of a southward plunging finger of diabase while the Silver Miller and Cobalt Lode are on the western flank of this finger.

In some parts of the Keewatin in the area sediments and tuffs occur, but none of these could be recognized on the South Giroux with the exception of a little agglomerate which was found in one outcrop only.

General Geology (cont'd)

In addition to Keewatin and Nipissing Diabase there are a series of basic intrusives consisting of Gabbros, diorites and diabases with some lamprophyres which are thought to be post granite in age and would be then Matachewan or late Algoman. There are probably two ages of lamprophyres since some of its typical Algoman, while some appears to grade from the gabbro. These Matachewan rocks are very widespread in small irregular flat dipping sills on the South Giroux property, they also occur in larger irregular shaped dike-like masses.

The Keewatin lavas strike in a generally southeast direction and face north and with a few exceptions they dip steeply north.

The diabase strikes northeasterly and dips about 15 deg. to the southeast, but it has rather variable dip and strike and is much disturbed by faulting.

There is much faulting throughout the area and a good number of faults can be located on the ground while others are obvious from a study of the air photographs.

Nipissing Diabase

The Nipissing diabase sill as previously stated outcrops along part of the north boundary and most of the west boundary of the property. Where undisturbed contacts are exposed it strikes south 60 west and dips 15 deg. to the southeast in the northeast part of the property, but toward the southwest its strike changes to south 30 west. The section in which the upper contact outcrops has been much disturbed by a series of strong faults striking North 30 to 40 East and by a number of less conspicuous faults striking south 78 east. None of the small dikes and sills of diabase on the property can be stated to be of the same age as the big sill, but there are a number of stringers and very small dikes of aplite which belong to this age group.

Algoman

No intermediate or acid dikes of this age occur, but there is lamprophyre on the dump at #2 shaft and there are small dikes in two of the drill holes which probably are of this age.

Matachewan

A great many outcrops on the property have their shape partially controlled by sills of gabbro, diorite or diabase. These vary from a few inches to at least 20 ft. in thickness and generally dip at angles of less than 20 deg., in many cases there are parallel fractures in the Keewatin above and below these sills. They carry many inclusions, fork, alter their thickness suddenly and reverse their dip, so that although they have a strong tendency to outcrop they cannot be followed any great distance. Three larger masses of these rocks occur on the property, one on the east boundary, one east of #2 shaft and one on the southwest claims. These masses appear to have steep contacts at least locally, but they are filled with large and small inclusions and their outcrops are considerably effected by faulting.

General Geology (cont'd)

Matachewan (cont'd)

Dr. Thomson found inclusions of granite in similar rocks at Ibsen's Pond which would indicate them to be post-granite in age and the Nipissing Diabase sill is chilled against them. They generally show considerable chlorite, although some of them are grey diabases. In some outcrops fine grained sills out coarser ones, in a few instances they show some biotite mica, but generally they have very little quartz. Slight silicification of the lavas above and below these sills is quite common and in some cases there appears to be re-crystallization of the lavas close to them. No connection between sulphide mineralization and these intrusives was noted, but they do have some influence on quartz veins.

Since some of the heavier Keewatin flows have dioritic and diabasic textures and since the bases of some of these flows carry inclusions from the underlying flows there is often a good deal of difficulty in distinguishing between the two.

Keewatin

At least ninety percent of the outcropping Keewatin shows pillow structure. Flow tops are not well marked and no prominent textural features are found in the flows. The composition is rather basic andesite to basalt. Where texture is apparent it is usually dioritic or diabasic, though in a few cases it is gabbroic. The strike and dip of the flows can only be determined from pillows, which means that the accuracy of the determinations is not better than within twenty degrees. Some flow breccia is found, but this occurs only between pillows and no fragmental tops are to be found.

With sufficient drill holes across the strike of the flows it would probably be possible to identify some of the heavier flows and use them as horizon markers, but at present there is no satisfactory marker.

Mineralization

A small to fair amount of pyrite mineralization is found in many places on the property. Very little pyrrhotite and sphalerite, which are characteristic of Cobalt type mineralization, was noted.

Showings and Structure

Information as to results of underground work and early surface work is available in fair detail for some sections, and it is felt that a fair amount of reliance can be placed on this.

It may safely be assumed that some encouraging results were obtained in the veins which the shafts were sunk to investigate, and some cobalt at least was found at #3 shaft.

The only cobalt bloom found on surface is in a vein 375 ft. north-westerly from #3 shaft, on the adjoining property to the north, but a little cobalt was found in the core.

Showings and Structure (cont'd)

Most of the observed veins which look promising are too high above the diabase sill to be in a good horizon and hence they have possibilities at depth.

Judged by the Silver Miller and Cobalt Lode, which are the closest properties having developed ore, the most favourable horizon is within one hundred feet above the diabase contact and an as yet undetermined distance below this contact. The experience at the Beaver and Temiskaming is that a large percentage of the ore came from the horizon 150 ft. above to 150 ft. below the contact. Large oreshoots made well right through the contact, but small ones tended to bottom above it or top below it. The ideal horizons for exploration would appear to be 50 feet above the contact and 50 ft. below it, but in most cases drill hole footage has to be used to get down to the favourable horizon and for that reason exploration holes would have to prospect to a depth of 150 ft. below the contact.

The flat sills of Matachewan diorite and diabase must be considered as being unfavourable to vein and ore formation as the lamprophyres are at the Beaver. What is no more than a strong fracture in this formation may be a good vein below it.

Considerable drilling has been done in the northeast corner of the property and some encouragement has been had in this work. This was the most logical place to concentrate because the depth to the diabase was reasonable and the #3 shaft is useable. The greatest number of veins according to old records also occur in this section and the only known strong northerly striking faults are here.

The favourable direction for ore bearing veins in this particular area cannot be predicted. It is northerly on the Beaver-Temiskaming, Silver Miller and Cobalt Lode, but is about N70E on the University north of Giroux Lake and N80W on the Silco west of Giroux Lake.

The faults striking S78E may be of considerable importance. The one of these crossing the four northern claims passes a short distance north of the Cobalt Lode shaft. Displacement on these faults appears to be south side up. The other faults generally are east side up with the exception of the series of northeast striking faults along the west boundary which are almost certainly west side up. All of these faults are thought to be post diabase. It seems pretty certain that the first level workings from #3 shaft would be in diabase if there were not a fault between them and the diabase outcropping to the northeast of this shaft.

The two veins on 27897 merit investigation, the more southerly one is not in place where the work has been done on it, it appears to be a large angular piece of loose which has probably been forced up by frost action. It occurs in a strong depression. It shows considerable sphalerite.

The veins in the south part of A99 and the north parts of 976 and 1383 all apparently belong to a system of fractures which includes the vein on which #2 Shaft was sunk, they are rather far above the contact, but since there are a number of them close together they deserve some consideration. The contact at #2 Shaft is too deep for surface drilling at this stage of development.

Recommendations

In view of some fair looking veins and interesting values in the vicinity of #3 Shaft and in view of other strong veins on the property which have not been investigated at a favourable horizon, further exploration of this property is a good venture. A minimum of 5000 ft. of further diamond drilling is recommended.

A direction of S 30 E is thought to be the best, although this is rather close to the direction of the Keewatin it is most nearly down the dip of the diabase which will keep low angle holes in the favourable horizon for the greatest distance.

Two holes should be drilled from near the northeast corner of A99 to look for the westward extension of the values in #4 and #7 holes. One hole should be drilled about midway between #1 Hole and the shaft. One should be drilled from 480 ft. west of #1 Hole at S 20 E. One hole from the northwest corner of 27897 and one from 300 ft. east and 100 ft. south of that corner and one from 600 ft. south of that corner. One should be drilled from 400 ft. north of the southwest corner of A99. Needless to say any interesting intersections obtained in the course of this program should be followed up with holes designed to cut the same vein within fifty feet.

Conclusions

This is an excellent piece of prospecting ground on the upper contact of the diabase with some silver values which are well worth following up. It lacks any outstanding horizon in the Keewatin such as chert or tuff bands, but there is plenty of faulting to provide the structure. The faulting is post diabase and none of it is in the direction of the very young faults in the country so there is a very good chance that it is the right age and type to bring about the type of fracturing which carries ore in this camp.

The fact that ore has not been found in the top of the outcropping diabase in the ground to the north and west may be mainly due to the fact that there is very little of the top of the diabase exposed. The rock in this country which is most resistant to weathering is the indurated Keewatin immediately above the diabase contact.

In drilling on this property it should be borne in mind that holes drilled to the southeast may cross faults which bring the diabase contact up and this should be thought of in calculating the depth of a hole below the contact. On the other hand the contact is dipping more steeply in the vicinity of #2 shaft, the dip between the intersection in #3 Hole and that at #2 Shaft is over 20 deg.

Respectfully submitted

C. F. Cockshutt

C. F. Cockshutt

Haileybury
July 2nd, 1950

South Giroux Mines Limited
Haileybury Ontario.

Property located in Gillies Limit-Cobalt area, consisting of patented mining claims A 99, A 100, C 1383, C 1384, C 1000, C 976, T. 949½, T. 19473, T. 19473½, and unpatented mining claims T. 25837, 25838, T. 27896, 27897, 28097.

Statement of Work performed to date-

Surveying claim lines in preparation for Geological and other surveys.

September 18th. to 26th. 1949		Total
H.E. Cawley Haileybury, Ontario	9 days	
E. Fleury Cobalt Ont. helper	9 days	
		18 days

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Cutting lines, chaining and establishing points at 100' intervals on claims A99, A100 and at 200' intervals on other claims for Geological and other surveys.

N. Oslund Haileybury, Ont.	Sept. 21st. - 26th. 1949	5 days	
P. Hermiston Cobalt, Ont.	Sept. 21st. - 26th. 1949	5 "	
H.E. Cawley Haileybury, Ont.	Oct. 15th. - 27th.	10 E	
N. Oslund "	Oct. 15th. - Nov. 20th.	32 "	
P. Hermiston Cobalt, Ont.	Oct. 15th. - Nov. 20th.	32 "	
			84 days

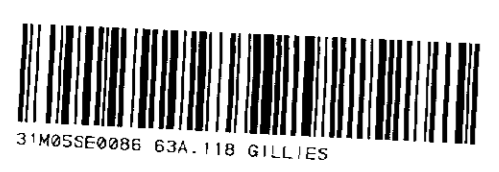
Geological Survey and preparing plans.

M.A. Pickard, Geologist, 25 King Street West, Toronto		
	Nov. 16th. - Nov. 30th. 1949	14 "

C.F. Cookshutt, Geologist, Haileybury, Ont.		
	May 15th. - July 5th. 1949	44 " " "

Total	160 days.
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H.E. Cawley
July 30, 1951



200

SOUTH GIROUX MINES LIMITED

— GEOLOGICAL PLAN —

Scale - 1 inch = 200 feet




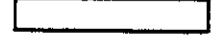
Work done by
Mr. Richard

COLEMAN
GILLIES

MAYFAIR MINES LTD.

NEW LAKE

— LEGEND —

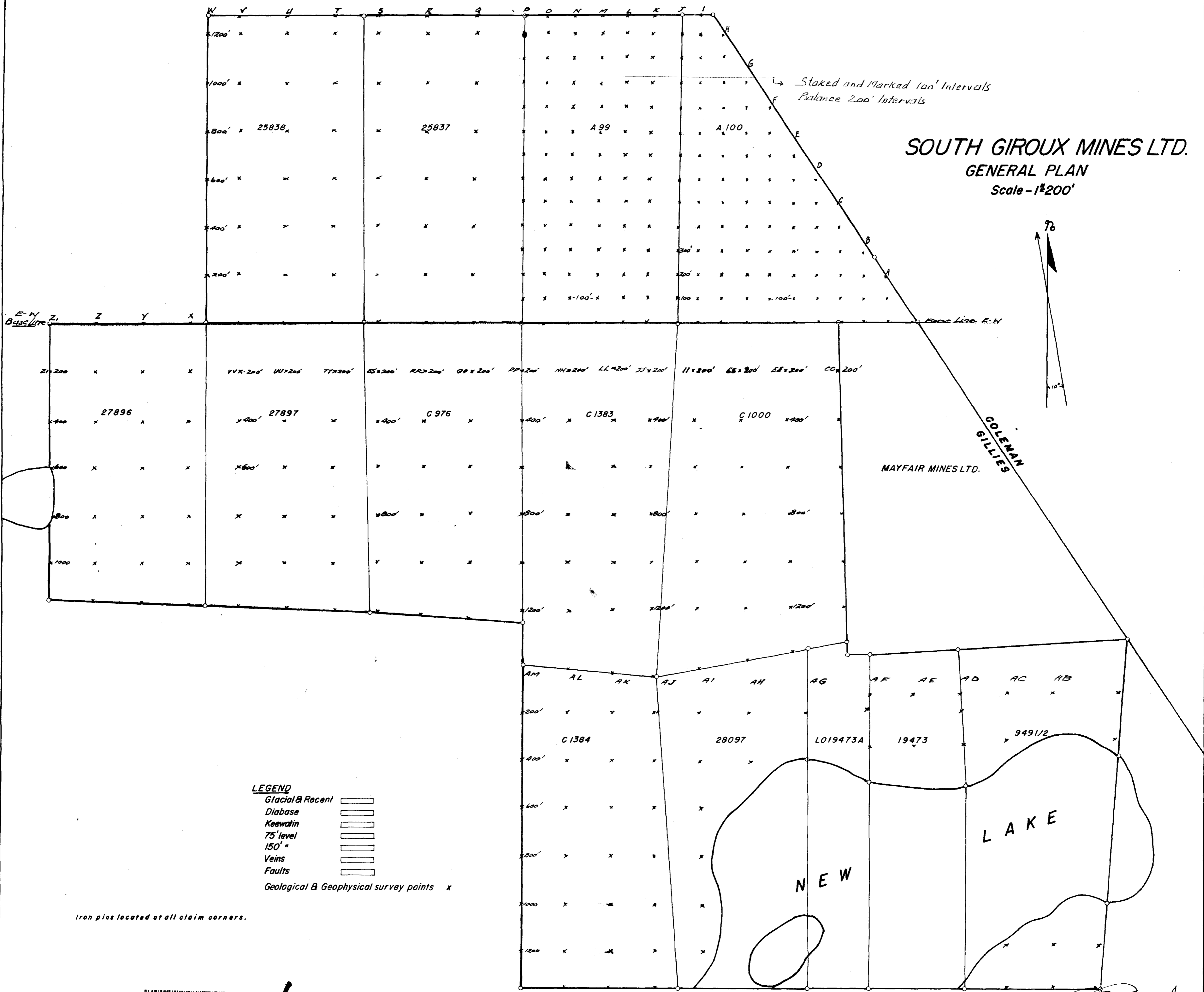
- Diabase  Db
- Keewatin  K.
- Veins 
- Faults 



31W552205 03A.110 GILLIES

A. N. Richard
Geological Ventures Ltd
Nov. 30. 1949

SOUTH GIROUX MINES LTD.
GENERAL PLAN
 Scale - 1"=200'



- LEGEND**
- Glacial & Recent
 - Diabase
 - Keewatin
 - 75' level
 - 150' "
 - Veins
 - Faults
 - Geological & Geophysical survey points x

Iron pins located at all claim corners.



3140556006 63A, 118 GILLIES

H. B. Lawry
 Nov. 1949. NOV. 1949.

SOUTH GIROUX MINES LTD.

GEOLOGICAL PLAN

Scale - 1" = 100'

Work done by G.F. Beckwith



LEGEND

- Joints - - - - - V
- Faults - - - - - W
- Dip-slip - - - - - A
- Discontinuity - - - - - S
- Andesite - - - - - 2
- Pillow Lava - - - - - 1

MAYFAIR

