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52F05NE0051 63.736 ATIKWA LAKE (GRAPNEL

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**Report on the
Geological Survey and Diamond Drilling**

of

**Mineral Claims K-18372 to K-18380 inclusive
K-19920 to K-19928 inclusive, K-18367 and K-19933**

**Atikwa-Populus Lake Area - Kenora Mining Division
Province of Ontario**

for

SHAWKEY (1945) MINES LIMITED

by

Simard and Knight



Toronto, Ontario

September 18, 1956

**Report on the
Geological Survey and Diamond Drilling
of
SHAWKEY (1945) MINES LIMITED
Kenora Mining Division, Ontario**

PROPERTY

The property of Shawkey (1945) Mines Limited consists of twenty contiguous, unsurveyed and unpatented mining claims numbered K-18372 to K-18380 inclusive, K-19920 to K-19928 inclusive, K-18387 and K-19933.

LOCATION

The claim group is located about one-half mile north of Denmark Lake in the Atikway-Populus Lake area of the Kenora Mining Division, Ontario.

ACCESS

The property is best reached via Kenora, Ontario, by aircraft, a distance of forty-three miles southeast. It can also be reached by water from various points along the Fort Frances-Kenora Highway.

TOPOGRAPHY & PHYSIOGRAPHY

The property consists of gentle rolling hills with occasional abrupt scarps giving a local relief of as much as 100 feet. Outcrops are numerous and are usually devoid of vegetation.

The low areas are well wooded with poplar, spruce, alders, hazel and minor jackpine.

There are no large creeks or streams traversing the property.

A fair gravel road traverses the central part of the property in a north-south direction. This road connects the property of Maybrun Mines Limited to a timber camp situated at the west end of Denmark Lake. The road is used by the former in transporting heavy equipment from the barge discharge point on Denmark Lake to the mine.

PROPERTY GEOLOGY

The property is underlain by basic lava flows, largely andesitic in composition. The texture of these andesites varies from fine dense massive

rocks to those medium grained possessing numerous phenocrysts of feldspar, giving the rocks a spotted appearance. The size of the feldspar phenocrysts varies, as also the position of the concentration of the phenocrysts in the individual lava flows. Pillow structure is also quite common in these flows.

The andesites are interbanded with narrow beds of tuff. The general strike of these rocks is N40°W, magnetic, with dips to the southwest at 50 to 70 degrees.

Intruding this volcanic complex are numerous dikes of diorite feldspar porphyry and granodiorite. The main stock or boss of granodiorite appears in the southeast corner of the property. A high degree of granitization accompanies the rocks in the contact area.

The various formations may be classified according to the following geological legend.

Table of Formations

Precambrian

Algoman

Diorite (1), Feldspar Porphyry (1A)

Intrusive contact

Laurentian

Greenstone - Granodiorite Complex (2)
Granodiorite (2A)

Intrusive Contact

Keewatin

Massive-Porphyrific Andesite (3), Pillowed Andesite (3A)
Andesite Porphyrite (4)
Tuff (5)

Description of Formations

Keewatin

Tuff (5) - These are light to dark green in color, quite siliceous and invariably exhibit good bedding. The thickness of these tuff horizons vary

from a few inches to five feet. It was impossible to trace these horizons from outcrop to outcrop. The general strike of these tuff bands varied from N20°W to N40°W magnetic, with moderate dips to the southwest.

Andesite Porphyrite (4) - A flow of the andesite porphyrite was mapped in the western part of the property. Its strike is about N40°W magnetic. The rock is essentially andesitic in composition with numerous large phenocrysts of feldspar. The origin of the feldspars within the individual flows appears to be due to gravity settling.

Massive-Porphyrific Andesite (3); Pillowed Andesite (3a) - These lavas are andesites with facies approaching that of basalt. Pillow structure is characteristic of these lavas.

Macroscopically they are of several varieties:

- (a) very fine grained greenish black.
- (b) light greyish green, somewhat fine grained.
- (c) "spotted" lavas having a greenish groundmass with phenocrysts of feldspar.

Laurentian

Greenstone-Granodiorite Complex (2); Granodiorite (2A) - In the southeast part of the property an area was mapped as a greenstone-granodiorite complex. These rocks consist essentially of andesitic lava with numerous injections and apophyses of granodiorite; probably representing a certain degree of hybridization. In certain parts of this area small dikes and sills of granodiorite were noted.

Algoman

Diorite (1); Feldspar Porphyry (1A) - The diorites range from medium to coarse grained and in instances appear to be a very coarse amphibolite. They are found associated with the andesitic lavas in an intrusive relation. There were no large bodies of this rock.

The feldspar porphyry occurs as dikes and as sills in relation to the andesites. Their composition consists of white feldspar phenocrysts in a light grey siliceous matrix.

STRUCTURE

There were no prominent structural features observed or indicated from the geological mapping of the property.

A fault is indicated striking about N40°E on claim K-18373 and it appears to extend across the property. This is somewhat substantiated by what appears to be an offset of the andesite porphyrite horizon.

All evidence from surface and diamond drill core examinations indicate that the top of the flows are to the southeast.

Numerous other linears are possible expressions of further faulting.

MINERALIZATION

A band of pillowed andesites, trending northwest-southeast through claims K-18373 and K-18377, carries disseminated pyrrhotite-pyrite and minor chalcopyrite mineralization. The sulphides appear to be localized about the pillows and along flow contact material. The percentage of sulphides varies from 2 to 15 percent over an average width of a few feet.

RESULTS OF DIAMOND DRILLING

The object of the diamond drilling program was three-fold:

1. To meet assessment requirements.
2. To cross-section the pillowed andesite horizon carrying disseminated pyrrhotite-pyrite and minor chalcopyrite mineralization.
3. To cross-section two very weak electromagnetic anomalies.

Diamond Drill Holes No. 1 and No. 2

These holes cross-sectioned the weak electromagnetic anomalies.

The sulphide intersections are as follows:

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Length (Ft.)</u>	<u>Remarks</u>
1	48.2	48.7	0.5	10% pyrrhotite
	161.5	161.8	0.3	10% pyrrhotite & minor chalcopyrite
	229.0	229.3	0.3	
2	24.5	33.0	8.5	Less than 2% pyrite

Diamond Drill Hole No. 3

The hole was collared 100 feet northwest of hole No. 2 and probed a surface sulphide showing. The sulphide intersections are summarized as follows:

<u>From</u>	<u>To</u>	<u>Core Length (Ft.)</u>	<u>Remarks</u>
65.0	66.2	1.2	2% pyrrhotite
75.4	80.8	5.4	Less than 5% pyrrhotite with minor chalcopyrite
235.0	266.0	31.0	Narrow sections with less than 2% pyrrhotite.

The section from 75.4 to 80.8 assayed 0.18% copper, nil nickel and nil gold.

Diamond Drill Hole No. 4

The hole was collared in the plane of section 10+00 west and 13+00 north of the base line, bearing N55E astronomic and a dip of 40 degrees. The sulphide section was as follows:

20.0	21.5	1.5	Less than 2% pyrrhotite
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Diamond Drill Hole No. 5

The hole was collared in the plane of section 15+00 west and 15+50 north of the base line, bearing N55°E (Ast.) and a dip of 40 degrees. The sulphide intersections are as follows:

169.1	170.2	1.1	Less than 20% pyrrhotite
245.0	258.0	13.0	Less than 1% fine pyrite.

Diamond Drill Holes No. 6 and No. 7

These holes were drilled in the same plane of section 11+00 west and at 14+00 and 10+50 respectively, north of the base line, bearing N55°E (Ast.) and both at dips of 40 degrees. No important sulphide intersections were encountered in either of these holes.

CONCLUSIONS

The mineralization on the Shawkey property from surface exposures and diamond drill core examination shows that the pyrrhotite-pyrite

and minor chalcopyrite mineralization is confined to spaces about and between pillows and in lava flow-top material. The distribution of sulphides is very erratic and is definitely not of economic importance. From present information, no structure favorable for the economic concentration of sulphides is known.

The mode of occurrence of this sulphide mineralization is similar to the property of Maybrun Mines Limited. The similarity of the two being that the known mineralized horizons are confined solely to pillowed andesite flows. From all evidence, it appears that the Shawkey pillowed andesite flows are not the same flows as the Maybrun, but parallel flows, situated about one-half mile to the southwest. The structural control that seems to be a prerequisite for orebodies has not yet been worked out at the Maybrun Mines though they have reached quite an advanced stage of underground exploration. It is felt that the Shawkey property could be reassessed only in the light of knowledge gained from the Maybrun operations. The known disseminated mineral occurrence is not considered of sufficient economic promise to warrant a continued program of diamond drilling at this time.

The Falconbridge mineral occurrence is localized in a breccia zone situated along a gabbro-lava contact. There the recoverable metals will be copper and nickel. So far nickel is not prominent at the Maybrun or Shawkey properties.

Enough assessment work has been done on the property to bring it to patent.

RECOMMENDATIONS

In the light of the inconclusive results of the surface programs, it is recommended that the results of this work be reviewed during the year when the ground becomes due for patent. At this time the possibilities of the Shawkey property can be studied with respect to results at the Maybrun. If

the Maybrun prospect has not reached the status of a profitable producing mine, it would appear that the Shawkey property has little chance of developing an economic mineral deposit.

Respectfully submitted

SIMARD and KNIGHT

A handwritten signature in cursive script, appearing to read "Michael Zurowski".

Michael Zurowski
Geologist.

September 19, 1956.

SHAWKEY (1945) MINES LIMITED
Atikwa Lake Area
Kenora Mining Division - Ontario

SUMMARY OF ASSESSMENT WORK

<u>Claim No.</u>	<u>Credits Recorded Geological Survey</u>	<u>Credits Requested Geophysical Survey</u>	<u>Credits Requested Diamond Drilling</u>	<u>Total Credits Requested</u>
K-18372	22.85	17.15	146.2	163.35
K-18373	22.85	17.15	146.2	163.35
K-18374	22.85	17.15	146.2	163.35
K-18375	22.85	17.15	146.2	163.35
K-18376	22.85	17.15	133.3	150.45
K-18377	22.85	17.15	133.3	150.45
K-18378	22.85	17.15	133.3	150.45
K-18379	22.85	17.15	146.2	163.35
K-18380	22.85	17.15	146.2	163.35
K-18387	22.85	17.15	146.2	163.35
K-19920	22.85	17.15	133.3	150.45
K-19921	22.85	17.15	133.3	150.45
K-19922	22.85	17.15	133.3	150.45
K-19923	22.85	17.15	133.3	150.45
K-19924	22.85	17.15	133.3	150.45
K-19925	22.85	17.15	146.2	163.35
K-19926	22.85	17.15	146.2	163.35
K-19927	22.85	17.15	133.3	150.45
K-19928	22.85	17.15	146.2	163.35
K-19933	22.85	17.15	146.2	163.35
	457.0	343.0	2807.9	3180.9

Technical Details of the Work

The mileage cut and chained for the geological and geophysical surveys is as follows:

Base Line	1.8 miles
Picket Lines	18.7 miles
	<u>20.5 miles</u>

The base line was cut diagonally across the property at a bearing of N40°W magnetic. Picket lines were turned off at 90 degrees to the base line at 400 foot intervals and cut to the property boundary. Stations at 100 foot intervals were established along the picket lines.

Geological Survey

The property was mapped using the established picket lines as traverse controls and interline traversing was done by the pace and compass

method. Results of this work were plotted on a plan to the scale of one inch equals 200 feet.

Work Done by:

Line Cutting

	<u>Period</u>
R. Ricard, Sudbury, Ontario	May 27 to June 28, 1956 inclusive
I. Levesque, Sudbury, Ontario	May 27 to June 28, 1956 inclusive
G. Levesque, Sudbury, Ontario	May 27 to June 28, 1956 inclusive

Geological (Field Work) Survey

F. Hodgkinson, Geologist, 127 Bingham Ave., Toronto
Period - June 26 to September 17, 1956 inclusive

Mervin Dedels, Assistant, 428 1st Ave. S., Montgomery, Alberta
Period - July 20 to September 9, 1956 inclusive

Geological Survey - Office work, reports, Supervision

Simard and Knight, 403 - 25 Adelaide St. W., Toronto
Period - August 26 to September 16, 1956 inclusive

Breakdown

	<u>10 hr. man day</u>	<u>8 hr. man day</u>	<u>Factor</u>	<u>Total 8 hr. man day</u>
Linecutting	50	62.5	4	250.0
Field work	-	136.0	4	544.0
Office work	-	23.0	4	92.0
				<u>886.0</u>

On per claim basis $\frac{886.0}{20} = 44.3$ man days

Allowed man days per claim - 40.0

Note: Linecutting time has been prorated evenly between the geophysical and geological surveys.

Diamond Drilling

A total of seven diamond drill holes, comprising 2808 feet, were completed on the property. The drill contractor was Boyles Bros. Limited of Port Arthur, Ontario. The core was standard AXT.

Dk and Drilling (Continued)

Group I (11 claims)

Mining Claims K-18372 to 18375 inclusive, K-18387, K-18379,
K-19925, K-19926, K-19928, K-18380 and K-19933.

Drilling on Claim
K-18373

<u>Hole No.</u>	<u>Dip</u>	<u>Length (Ft.)</u>
4	40	401
5	40	400
6	40	403
7	40	<u>404</u>
Total -		1608

On per claim basis - $\frac{1608}{11} = 146.2$ man days

Group II (9 claims)

Mining Claims K-18376 to K-18378 inclusive, K-19920 to
K-19922 inclusive, K-19923, K-19924 and K-19927.

Drilling on Claims

<u>Hole No.</u>	<u>Dip</u>	<u>Length (Ft.)</u>
1	45	399
2	45	400
3	45	<u>401</u>
Total -		1200

On per claim basis - $\frac{1200}{9} = 133.3$ man days

Respectfully submitted

SIMARD and KNIGHT



Michael Zurowski
Geologist.

September 19, 1956,



52F05NE0051 63.736 ATIKWA LAKE (GRAPNEL

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Report on the Electromagnetic Survey

of

SHAWKEY (1945) MINES LIMITED

**Atikwa - Populus Lake Area
Kenora Mining Division, Ontario**

by

Simard and Knight

August 3, 1956

Toronto, Ontario

**Report on the Electromagnetic Survey
of
SHAWKEY (1945) MINES LIMITED
Atikwa - Populus Lake Area
Kenora Mining Division, Ontario**

PROPERTY

The property of Shawkey (1945) Mines Limited consists of twenty contiguous unsurveyed and unpatented mining claims numbered as follows:

K-18372 to K-18380 inclusive
K-19920 to K-19928 inclusive
K-18387 and K-19933

LOCATION

The claim group is located about one-half mile north of Denmark Lake in the Atikwa - Populus Lake area of the Kenora Mining Division, Ontario.

ACCESS

The property is best reached via Kenora, Ontario, by aircraft, a distance of forty-three miles southeast. It can also be reached by water from various points along the Fort Francis - Kenora highway.

TOPOGRAPHY AND PHYSIOGRAPHY

The property consists of gentle rolling hills with occasional abrupt scarps giving a local relief of as much as 100 feet. Outcrops are numerous and are usually devoid of vegetation.

The low areas are well wooded with poplar, spruce, alders, hazel and minor spruce.

There are no large creeks or streams traversing the property.

A fair gravel road traverses the central part of the property in a north-south direction. This road connects the property of Maybrun Mines Limited and a timber camp situated at the west end of Denmark Lake. The road is used by the former in transporting heavy equipment from the barge discharge point on Denmark Lake to the mine.

PROPERTY GEOLOGY

The property is underlain mostly by lavas, largely andesitic in composition. The texture of these andesites varies from fine dense massive rocks to those medium grained possessing numerous phenocrysts of feldspar, giving the rocks a spotted appearance. The size of the feldspar phenocrysts varies, as also the position of the concentration of the phenocrysts in the individual flows. Pillow structure is also quite characteristic of these flows.

The andesites are interbanded with narrow beds of tuffs and the general strike of these rocks is $N40^{\circ}W$ magnetic with dips to the southwest at 60 degrees.

Intruding this complex are numerous dikes of feldspar porphyry, diorite and gabbro with small apophyses of granite. The main stock of granite appears in the southeast corner of the property. A high degree of amphibolitization is apparent near the granite margins.

Linears trending in varied directions seem to be the only expressions of possible faults or major areas of disturbance.

MINERALIZATION

A band of pillowed andesites, trending northwest - southeast through claims K-18373 and K-18377, was observed carrying disseminated pyrrhotite mineralization. These outcrops possessed a slight rusty appearance.

ELECTROMAGNETIC SURVEY

Theory

The theory of electromagnetic induction states that if an alternating current is caused to flow in a coil (primary) small concentric magnetic fields are set up about this coil in a plane at right angles to it. If another coil (secondary) is placed in the magnetic field of this primary

field an alternating current is induced in the secondary coil, which sets up a secondary field tending to oppose the primary field.

This principle is used in the Sharpe Model SE-100 Electromagnetic Survey Unit. Instead of the secondary coil the hidden metallic orebody acts as the secondary coil.

By using a receiver coil and directing the primary field at the receiver coil, the resultant dip of the primary and the induced secondary fields are measured. These resultant dips plotted on a plan indicate the approximate electrical axis of the subsurface conductor.

Results of the Electromagnetic Survey

From the results of the survey which are plotted on an accompanying plan, it is evident that no strong electromagnetic conducting zones lie within the property area. The range of the readings is quite flat with indications of a weak conducting zone in the northwesterly corner of claim K-18377. These weak conductors each extend across only one picket line. Detailed survey work in the vicinity of these conductors did not add to their extent. It appears that these weak zones may be caused by sulphide mineralization rather than the reflection of underlying glacial deposits. This conclusion is more evident since the conductors overlie an area which appears to be a continuation of the pillowed andesites horizon carrying disseminated pyrrhotite. The null point of the cross-overs is quite sharp, additional evidence of an existing conductor.

CONCLUSIONS AND RECOMMENDATIONS

Based on the electromagnetic results alone, which were inconclusive, the property does not appear to possess any obvious mineralized structures. However, having studied the geology of the Maybrun Mines Limited ore occurrences and the results of their geophysical programs, it is conceivable that the mineralized structures may not be detected by

geophysical methods. The surveys over the Maybrun known surface zones indicated weak and non-continuous anomalous zones. In the absence of the surface mineralization, it is felt that the results of the geophysical surveys alone would not have received further investigations.

Comparing the Shawkey geophysical results to those of Maybrun and the similarity of the geology of the two properties, it is felt that the weak anomalous zones which appear to overlie the area of pillowed lavas carrying disseminated pyrrhotite are the most favorable areas to be investigated by a program of diamond drilling. In such an investigation the holes should be located so as to cross section the weak conducting zones as well as cross-sectioning the pillowed lava horizon at regular intervals.

The geological mapping program which has been commenced should be completed and will guide in locating the drill sites in the program of cross-sectional diamond drilling outlined above. Also, the mapping program may disclose mineralized structures not detected by the geophysical survey.

Respectfully submitted
SIMARD and KNIGHT



M. Zurowski
Geologist.

Toronto, Ontario
August 3, 1956.

SHAWKEY (1945) MINES LIMITED

Atikwa - Populus Lake Area
Kenora Mining Division, Ontario

SUMMARY OF ASSESSMENT WORK

<u>Claim No.</u>	<u>Credits Recorded</u> <u>Geophysical Survey</u>
K-18372	31.95
K-18373	31.95
K-18374	31.95
K-18375	31.95
K-18376	31.95
K-18377	31.95
K-18378	31.95
K-18379	31.95
K-18380	31.95
K-18387	31.95
K-19920	31.95
K-19921	31.95
K-19922	31.95
K-19923	31.95
K-19924	31.95
K-19925	31.95
K-19926	31.95
K-19927	31.95
K-19928	31.95
K-19933	31.95
	<u>639.0</u>

TECHNICAL DETAILS OF THE ASSESSMENT WORK

Linecutting

The mileage cut and chained for the geological and geophysical surveys is as follows:

Base line - 1.8 miles
Picket line - 18.7 miles
20.5 miles

The base line was cut diagonally across the property at a bearing of N40°W magnetic. Picket lines were turned off at 90 degrees to the base line at 400 foot intervals and cut to the property boundary. Stations at 100 foot intervals were established along the picket lines.

GEOPHYSICAL SURVEY

An electromagnetic survey was conducted over the property using a Sharpe SE-100 electromagnetic unit.

Results of the survey are being plotted on a plan of one inch equals 200 feet.

WORK DONE BY:

Linecutting

R. Ricard, Sudbury, Ontario	May 27 to June 28, 1956 incl.
I. Levesque, Hearst, Ontario	May 27 to June 28, 1956 incl.
G. Levesque, Hearst, Ontario	May 27 to June 28, 1956 incl.

GEOPHYSICAL (ELECTROMAGNETIC) SURVEY - FIELD WORK

C.S. Jessop, Box 422, Sudbury, Ontario	June 26 to July 18, 1956 incl.
J. Jessop, Box 422, Sudbury, Ontario	June 26 to July 18, 1956 incl.

GEOPHYSICAL (ELECTROMAGNETIC) SURVEY - SUPERVISION AND TECHNICAL ADVISOR

Simard and Knight - Rm. 403, 25 Adelaide St. W., Toronto,
Period - June 26 to July 18, 1956 incl.

L.F. Labow - Rm. 1108, 25 Adelaide St. W., Toronto,
Period - July 1 to July 18, 1956 incl.

Breakdown

Geophysical (E.M.) Survey

	<u>10 Hr. Man Day</u>	<u>8 Hr. Man Day</u>	<u>Factor</u>	<u>Total 8 Hr. Man Day</u>
Linecutting	49	61.25	4	245.0
Field Work	46	57.50	4	230.0
Supervision and Technical Advisor	-	41	4	<u>164.0</u>
				639.0

On per claim basis -- $\frac{639.0}{20}$ = 31.95 man days

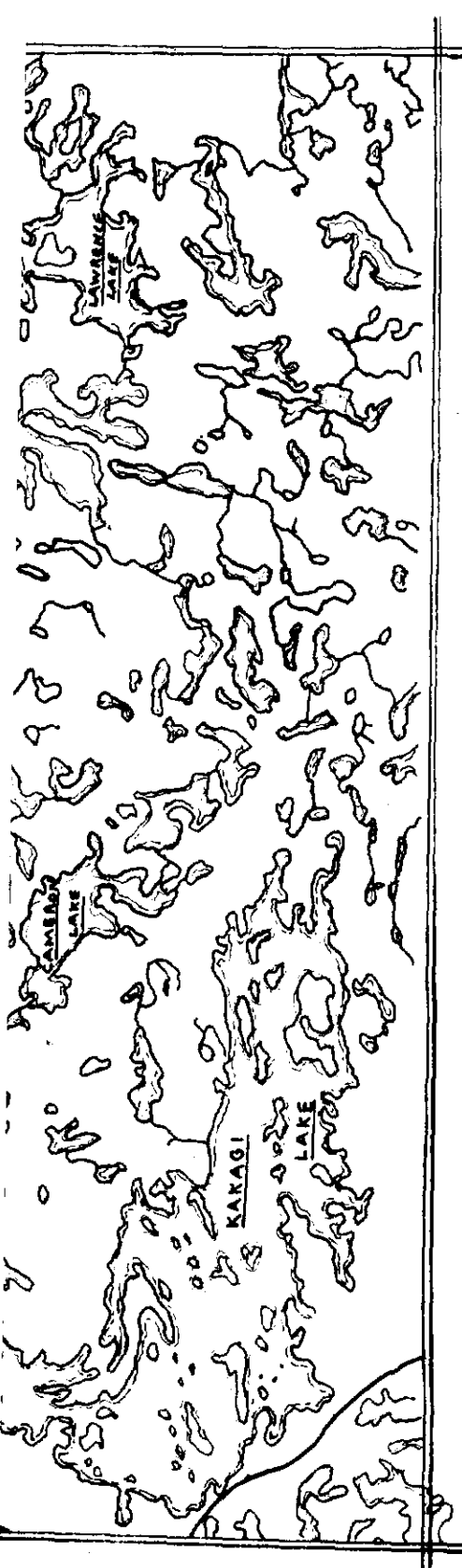
Note:

Only one-half time of linecutting allocated for geophysical survey.

SIMARD and KNIGHT


M. Zurowski

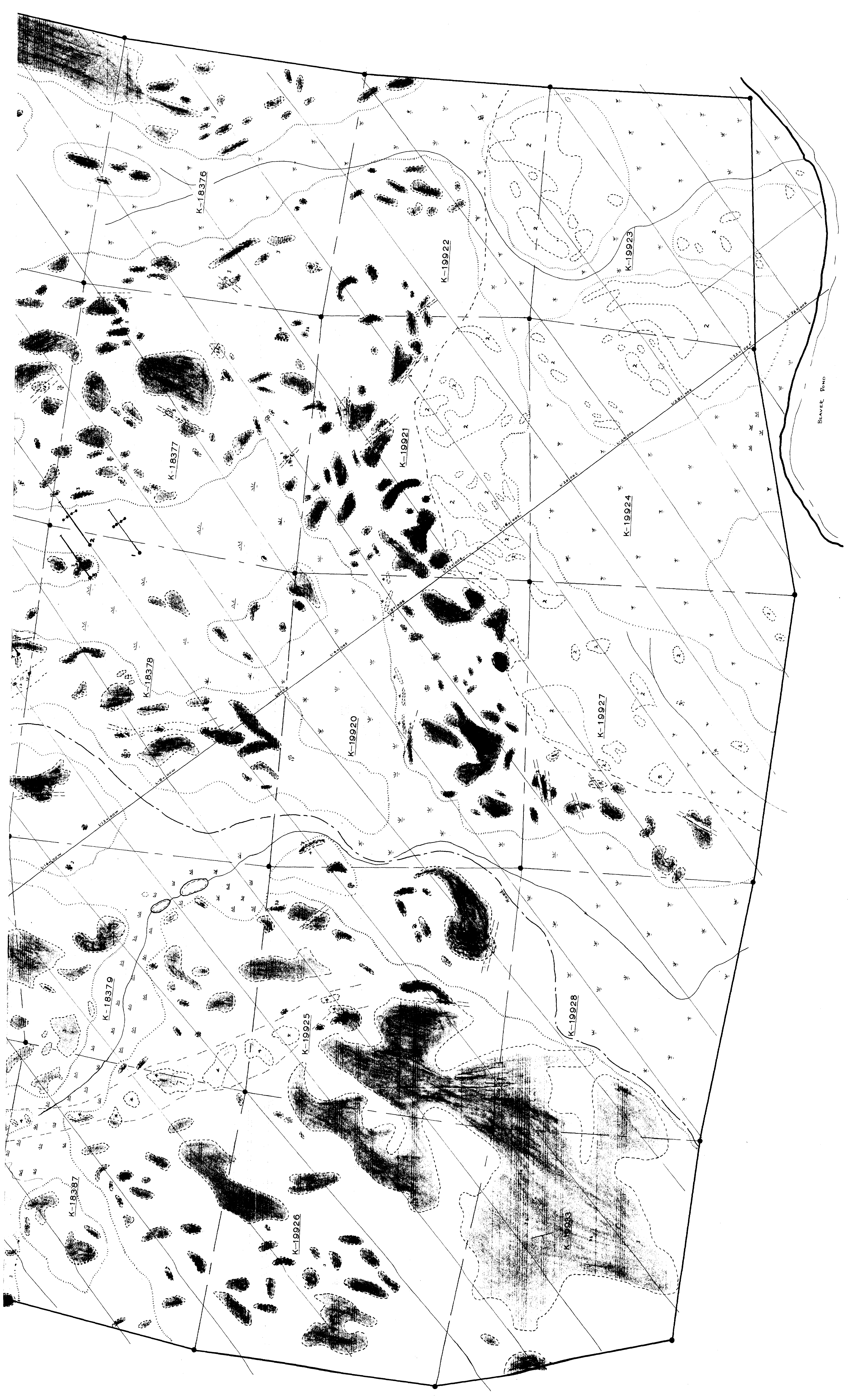
Toronto, Ontario
August 3, 1956



Key Map
Scale 1 inch = 4 Miles

SYMBOLS

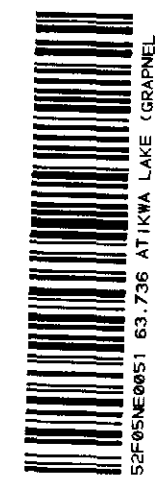
- Geological boundary - defined
- Geological boundary - assumed
- Strike & Dip
- Fault defined
- Fault assumed
- Shearing
- Diamond drill hole
- Picket line
- Swamp
- Claim posts
- Road
- Hill
- Sulphide Mineralization
- ELECTROMAGNETIC CONTOUR

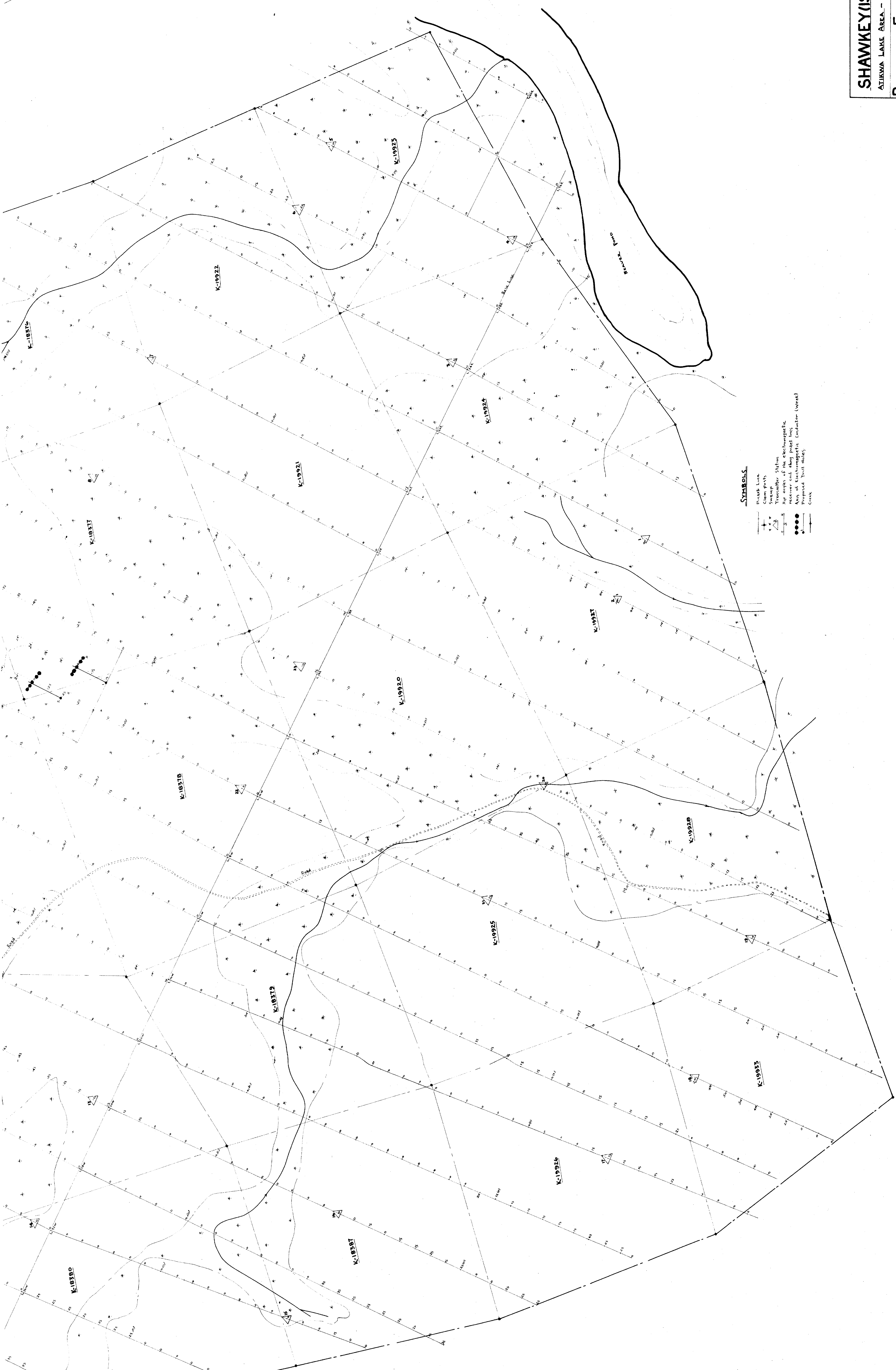


LEGEND

- PRECAMBRIAN**
- ALBERTA
 - DIABASE, GABBRO, PERidotite (D)
 - Granitic Gneiss
 - LAURENTIAN
 - Granitic Gneiss Complex (G), Gabbro (G), Peridotite (D)
 - Trondhjemite Gneiss
- KEENWATER**
- Mica-Deformed Amphibolite (M), Plagioclase Amphibolite (P)
 - Amphibolite (A)
 - Tuff

SHAWKEY (1945) MINES LIMITED
 DENMARK - ATIKWA LAKE AREA
 KENORA MINING DIVISION
 ONTARIO
SURFACE GEOLOGY
 Scale 1 inch = 200 feet





SYMBOLS

- Main Line
- Sweep
- Transmitter Station
- Receiver and Amp. Point (R.A.P.)
- Axis of Electromagnetic Contour (Work)
- Proposed Drill Sites
- Contour

