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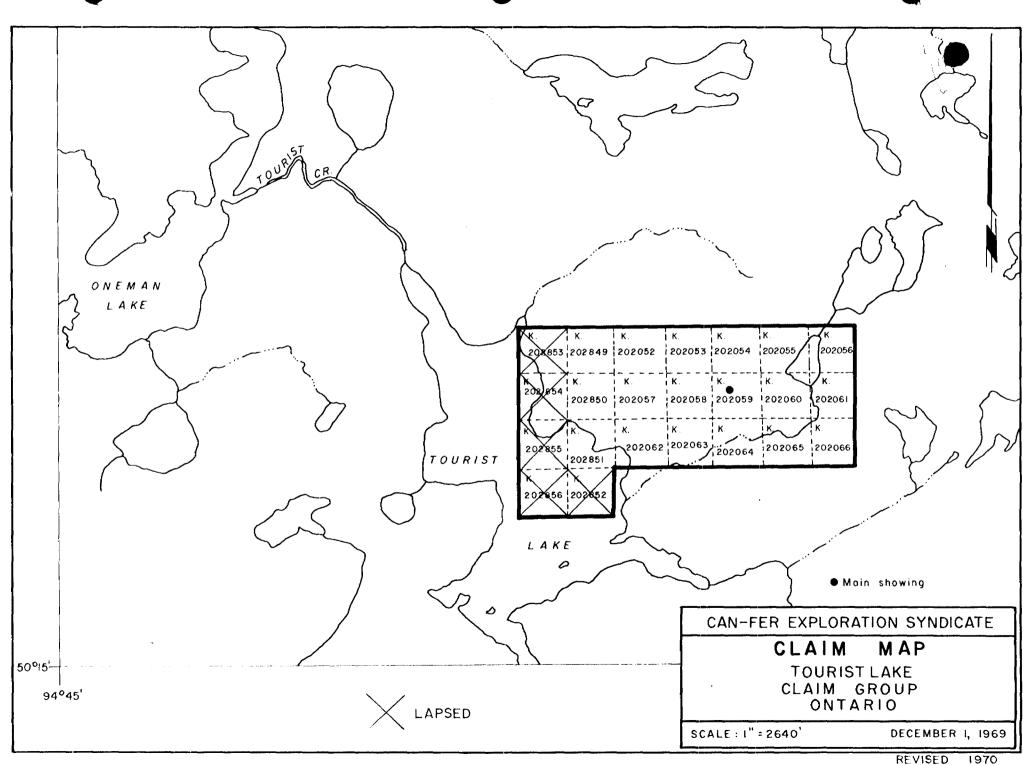
INDEX

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	Page
MAGNETOMETER SURVEY	
Property	1
Location and Access	1,
Ownership	2
Survey Period and Personnel	2
Previous Exploration and Development Work	3
Jurvey Methods	
Instruments Used	• 3
Survey Grid	1+
Topography	1 ₊
Magnetic Interpretation	
Biotite Schist and Gneiss	5
White Granite and White Granite-Gneissic	5
Pink Granite and Pink Granite-Gneissic	ર્ઝ
Exploration Summary	5
Conclusions	?
Cortificate	8
ALOLOGICAL BURVEY	
Survey Period and Personnel	า
W. sotution	()

INDEX - Continued	Page
Geology - Table of Formations	10
- Quartz Biotite Schist and Quartz Biotite Gniess	10
- Pink Granite	13
- Pink Granite - Gneissic	14
- White Granite	15
- White Granite - Gneissic	16
- Pegmatite	17
Métamorphism	3.7
Structure	18
Mineralization	19
Survey Personnel	20
Contificate	2].
SCINTILLOMETER SURVEY	
Curvey Period	53
Curvey Procedure	22
Conclusions	23
Survey Fersonnel	5,4
Certificate	25
Appendix - Maps in pockets A. Magnetometer map #70-18, scale 1"= 200' 3. Magnetic Interpretation map #70-19, scale 1"= 20 C. Geological map #70-16, scale 1"= 200' D. Scintillomoter map #70-20, scale 1"=200'	0'

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MAGNETOMETER SURVEY AND INTERPRETATION Tourist Lake Property, Ontario

Property

The area covered by this magnetometer survey consists of the following 18 unpatented mining claims in the Tourist Lake area of the Kenora Mining Division: Claim Nos. K 202,052 to K 202,066 inclusive and K 202,849 to K 202,851 inclusive.

They were recorded on May 22 and August 7, 1969, and are shown on Claim May # M-2531, Paterson Lake area of the Ontario Department of Mines.

Location and Access

The claims are centered on latitude 50° 16' North and longitude 94° 40' West, and shown on the Paterson Lake Claim Map, N. T. S. 52 L 7 and Magnetometer Map #1189G.

from winter and summer bases at Kenora, Ontario. The property lies 37 air miles in a direction North 15° West from Kenora. Alternate access is possible by highway from Kenora to Keewatin and thence north via Minaki to Caribou Falls on the south end of Umfreville Lake. This distance is approximately 45 miles from Kenora. From Caribou Falls the property is reached by

cance or boat through Umfreville and Oneman Lakes and hence to Tourist Lake via Tourist Creek. The water route is approximately 17 miles in an east to north-easterly direction.

<u>Ownership</u>

The property was staked for Can-Fer Mines Limited, and transferred to its successor, Bralorme Can-Fer Resources Limited of Suite 320, 355 Burrard St., Vancouver, British Columbia.

Bralor Can-Fer (Licence T-306) is submitting this report on the magnetometer survey for a credit of 40 days assessment work on the property of 18 claims under the Special Provisions regarding submission of Geophysical Surveys.

Survey Period and Personnel

and April 10, 1970. This included the line cutting and the ragnetometer survey. Compilation of field data, drafting, interpretation and typing was done at intervals from April 10 to January 8, 1971.

The line cutting contractor was Jack Howard, c/o Ontario Central Airlines, Kenora, Ontario. The magnetometer survey was performed by Ewan Yeates, Kelvington, Saskatchewan.

Previous Exploration and Development Work

Prospectors, in ground checking airborne spectrometer anomalies, ran across one anomaly of interest and which became the nucleus of the 18 claim group.

Nineteen tranches were put down and sampled in the summer of 1960 and three Winkie drill holes totalling 113 feet drilled.

This work indicated a radioactive and mineralized zone in the biotite schist and gneiss.

Detailed geological mapping, a ground scintillometer survey and further trenching were done during the spring and summer of 1970. Maps and reports on these surveys are being submitted to the department as assessment data in subsections of this report.

Survey Methods

Instrument Used

A McPhar type "-"00 fluxgate magnetometer was used on this survey. Readings vary from 20 to 3350 gammas with most readings in the 1000 - 2000 gamma range. The instrument is readuated at 20 gamma intervals and readings were taken on the half-scale division or to the closest 10 gammas. All readings shown on the accompanying maps are direct field readings corrected for daily diurnal variation.

This survey was not tied into a government magnetic base station. The property base station is at line 00 on the Base Line.

Survey Grid

The survey grid was constructed by cutting an East-West base line, 7,600 feet in length, through the north central part of the claim group. Offset lines were turned off at approximately 400 feet intervals, and then cut, chained and picketed. All lines were tied in by chaining on the outside property boundaries. Tie lines were put in where necessary. These were cut, chained and are indicated on the maps.

Magnetometer readings were taken at 50 feet intervals and closer where anomalous conditions were indicated.

A total of 1460 readings (20 lines each average 73 readings) were taken on the 200 scale map for an average of 81 readings per claim. A total of 18.7 miles of base line, cross line and tie lines were cut and established.

Topography

The general topography is valley and ridge with a broad valley 500-600 feet across extending from the south-west corner of the claim group through to the north-east corner.

The rock ridges to the north-west and south-east of this valley attain elevations of 50-75 feet over the valley bottom.

The valley itself is mainly swamp and muskeg, the latter

aggrevated by beaver dams. Rock outcrop in the valley bottom is negligible but abundant on the adjacent ridges.

Geology and Magnetic Interpretation

Biotite Schist and Gneiss

The high pyrrhotite content in the meta-sediments imparts to it a strong magnetic field which is readily picked up by a sensitive magnetometer. Magnetometer readings in this unit vary from 700-3500 gammas and are the highest in the map area. By means of the magnetometer and geological mapping, the biotite schist and gneiss can be readily traced as two narrow bands extending from the south-west corner to the north-east corner of the map area. One band is on each side of the valley. These bands vary from about 2 feet to 75 feet in width, the narrower portions being schistose and the wider portions being quite massive. Where narrow and highly sheared, as in the trenched area on the western part of claim # K 202,059, the biotite schist and associated sulphide is uraniferous. uranium bearing mineral is not known. The north band of biotite schist and gneiss dip about "Oo to the south and the attitude of the south band is believed to be the same.

White Granite and White Granite - Gneissic

These are indicated on the map as three bands, each ranging from about 75 to 350 feet in width. They lie north of

the northeasterly trending biotite schist and gneiss band, in between the two quartz-biotite bands. Most of this unit is white granite though there is the odd gneissic phase and one grades into the other.

With the magnetometer, the white granite indicates a magnetic range of 1400-1500 gammas and in places is about 100 gammas higher than the adjacent pink granite and gneissic pink granite.

The age relationship of the white granite to the pink granite is not known. It is assumed to be more or less contemporaneous.

Pink Granite and Pink Granite - Gneissic

Magnetically the pink granite varies from 1300-1500 germas with an average of about 1400 gammas. The pink granite is about 100 gammas lower than the adjacent white and gneissic white granite.

exploration humary

earried out almost continuously since staking in the spring of 1960. Prior to staking, an airborne radiometric survey was conducted. Initial work after staking in 1969 was trenching, sampling, Winkin drilling and in 1970, magnetometer, scintillometer, geological surveys on a scale of 1" = 200! and further

trenching and sampling. Thirty-one trenches having an aggregate length of 721 feet and three Winkie drill holes totalling

Conclusions

Compass deflections were noted in the early mapping of trenches - particularly with the biotite schist and gneiss. Trench continuity eventually became lost in overburden and a magnetometer survey was performed to assist in tracing the meta-sediments. This turned out to be successful and with detailed work the magnetic phase of the meta-sediment was pinned down to the nearest foot. This was then further explored by trenching for as long as the overburden was less than 8-10 feet in depth and the water table not too high.

. o . B. Caller

January 11, 1971

C. C. Allen

Certificate

I, C. C. Allen, do hereby declare

- that 1 am a geologist with education as follows:

 B. Sc., University of Manitoba, 1936

 M. S., University of Minnesota, 1938

 Ph. D., University of Minnesota, 1940
- 2. that I have practiced by profession continuously since 1935.
- 3. that I reside at 46 Aldershot Crescent, Willowdale, Ontario.
- that the accompanying report was written by me and that the field work was performed as indicated in the report under my supervision.

January 11, 1971

C. C. Allen

Achterista.

GEOLOGICAL SURVEY

Survey Period

The work of this report was carried out during the period May 30 to June 30, 1970. Bralorne Can-Fer Resources Ltd. is submitting the geological survey for a credit of 20 days per claim as assessment works on the property of 18 claims under the Special Provisions of the Mining Act.

Vegetation

Most of the area is covered by a mixed forest. The rocky ridges are generally covered by a sparse growth of jack pines and juniper bushes. The soil cover here is very thin and consists mostly of a completely immature stoney grey-brown podzol. Sloping down from the ridges the hill sides are covered by a mixture of spruce, balsam, fir and poplar with a few birch trees in the drier areas. The clay content of the soil and the thickness of the overburden increases towards the lowland swarps. At the edges of the swamps the overburden consists of a thick cover of forest litter and decayed vegetation to a depth of h-ô inches. Below this is a dense blue-grey impervious glacial clay up to 8 feet of thickness. This clay rest directly on the bedrock and contains very few rock fraggents. The vegetation supported by this soil consists

predominently of poplar trees, interspersed with spruce and in the swamps themselves there is a thick cover of alder bushes. A large portion of the claim block is covered by swamp and beaver readow. The impervious clay has resulted in a large number of underground streams which break through to the surface intermittently only to disappear again within a few hundred feet.

Geology Table of Formations

Acid Igneous Rocks

- 3. Pegmatite
- 2. 2a Fink Granite2b Pink Granite-Gneissic2c White Granite2d White Granite GneissicIntrusive Contact

Metasedimentary Rocks

la Quartz-Biotite Gneisslb Biotite Schist

The oldest rock units present are the metasediments. These show a large degree of variation between the two end replaces, the quartz-biotite gneiss and the biotite schist.

The weathered surface of the biotite schist is rusty brown to golden-yellow in colour, weathering readily to an average depty of 8-12 inches. In sore instances the weathered rock tackes on a sugary texture. On a fresh surface, the rock

varies from black to grey in colour depending on the amount of courts and feldspar present. The most noticeable feature of this unit is the schlotose texture imparted to it by the alignment of the biotite flakes. This rock is a holocrystalline phanemitic rock with a variable grain size ranging from less than 1 mm. to 10 mm, the average being 2-3 mm. The primary minemals are highlite and quartz with minor amounts of accessory garnet, alkali feldspar and sulphides. The biotite accounts for 35-755 of the rock. It is shiny black to dull rusty red in colour and occurs as subhedral to anhedral plates. The grain size is variable ranging from almost aphanitic to crystals as large as 10 mm. The average size of the mica flakes is 3-4 mm.

The quartz appears in thin veinlets and is also intimately associated with biotite in the finer grained varieties of schist. It is generally online granular and ranges in size from less than the fine form. To 5 m., the average being about 2 mm. Minor amounts of smoky quarts as phenocrysts are also present in this rock.

(orthoclose), garnet and sulphides. The feldspar occurs in timute bands and as isolated crystals. The average grain size is about 3 cm. It is generally pale white to orange in colour and is present as subhedral to anhedral crystals. The garnets present are variable in size and pinkish purple to red in colour almandine. They occur in the same fashion as the feldspar, as

form and show severe fracturing. On the average, less than 1% of the rock is composed of sulphides. These occur in small veinlets, cigar-shaped pods and as disseminations throughout the rock. Pyrrhotite is the most common sulphide and occurs with smaller amounts of pyrite.

The second end member of the metasediments is the quartz-biotite gneiss. The mineralogy of this unit is basically the same as that of the schist; however the amounts of each mineral present differ. The development of the foliation has only reached the gneissic stage in this unit, not having developed to the schistose stage present in the biotite schist.

Biotite accounts for 55-30% of the total rock. It is present as subhedral flakes averaging 4 - 5 mm. in size. The biotite occurs in parallel bands, however the individual flakes within a single band are not oriented in a single direction. Bands of quartiz and feldspar are also present, parallel to the biotite bands. About 25-30% of the rock is composed of anhedral quartz. The quartz colour varies from clear colourless through milky to smoky quartz. In places the quartz content becomes as high as 85-90% and the rock grades into an impure biotite quartzite. The alkali feldspar is salmon pink to pale orange in colour and occurs as subhedral crystals from 1 to 3 mm. in size.

About 10% of the rock is composed of feldspar. Garnet is not as common in the gneiss as it is in the schist. However, where it is present it appears to be the same type (almandine).

Pink Granite

The rink granite possess a mottled appearance due to the presence of large feldspar phenocrysts set in a groundmass of smaller feldspar and quartz grains. On a fresh surface the rock arrears a paler shade of pink than on the weathered surface. The weathering does not persist to any great depth, 1-1 inch generally except where a series of fractures is present. It is a holocrystalline phaneritic rock, the average grain size being 3-3 mm. The predominance of pale feldspars and quartz over radic constituents results in a colour index of about 19 for this rock. The crystal habit of the minerals is variwhile and gives a hypidiomorphic granular texture to the rock with a positivitic effect due to the presence of large alkali foldsroom. Not all samples show the porphyritic texture of the foldstar phenocrysts. The fine grained varieties of pink granity show a much more equipranual rtexture and are lighter in colour.

The prinary minerals are quartz and alkali feldspar, the accessory ineral being biotite and the rock containing little or nothing else. The feldmar accounts for about 65-70% of the rock. It is almost totally alkali feldspar, plagioclase

being present in only a few instances and in an amount less than 5% of the total feldspar content. The alkali feldspar is whitish pink to orange in colour. It is present as large blocky phenocrysts and also as smaller grains in the groundmass. The phenocrysts vary from 5-10 mm. in size and most of these subhedral crystals are twinned (albite or pericline twin laws). The crystals of the groundmass are anhedral and less than 1 mm. in size generally.

Quartz is present comprising up to 20% of the rock. The grains are anhedral and generally less than 2 mm. in size. The colour varies from a clear colourless to a cloudy grey. Only some of the grains appear fractured and these not intensely.

The biotite content is quite variable. In the fine grained varieties it accounts for only 5-8% of the rock while in the coarse grained varieties it comprises up to 15% of the rock. It is clean black biotite, subhedral to anhedral in crystal development and the grain size averages 1-2 mm.

Oneissic Pink Granite

The pink granite passes gradationally into a gneissic pink granite. The gneissic banding in the rock is provided by the segregation of individual zones of biotite, quartz and alkali feldspar in a fine grained matrix containing a mixture of the same three minerals. The mineralogy and proportions of this rock are approximately equal to those of the pink granite. However, the grain size is smaller and there is a

definite although variable (055°-062° average) and discontinuous guelssosity.

White Granite

The white granite usually has a mottled appearance coused by large white feldspar crystals. Viewed at arms length the fresh surface is light grey to white in colour. Closer inspection shows a greater percentage of mafic minerals than first impressions would indicate. The colour index for this rock is about 15. It is a holocrystalline phaneritic rock with a porphyritic hypidiomorphic granular texture. The average grain size is 2-3 mm. with phenocrysts up to 10 mm. in size present in most specimens.

and paracts are the accessory minerals. The feldspar comprises 65-701 of the rock and of this 75-90% is alkali feldspar (sanidine). The alkali feldspars are white (sanidine) to crange (orthoclose) in colour and possess a variable grain size. They occur as subhedral phenocrysts and as anhedral grains in the groundness. The phenocrysts vary between 5 and 15 cm. in size while the feldspars of the non-prophyritic medium grained variety of white granite vary from 1 to 3 mm. The feldspar of the groundness is most generally less than 1 cm. and unhedral in crystal development. The plagicalse present is a pale shiny blue colour and is present both as

phenocrysts and as groundmass.

Most of the quartz is clear and colourless, accounting for 25-30% of the total rock. The greatest percentage of this is found as anhedral grains less than 1 mm. in size occupying the interstices between the feldspars. A few rather well rounded grains are found as phenocrysts and these have been well fractured.

The flakes are unoriented and occur as minute single flakes as well as small "books" of biotite 1-3 mm. in size. The crystal development of both is subhedral to anhedral. Minor amounts of anhedral almandine garnet are also present. These are well fractured and are 1-3 mm. in size.

White Ameissic Granite

The white granite has a gneissic white granite member bearing the same relationship to it as the gneissic pink granite does to the pink granite. However, it is present in only minor amounts on the south-west part of the claim block. It is mineralogically the same as the white granite but shows a definite decrease in grain size. As well as this, there are subordinate pods throughout the white granite that grade into adamellite and even to granodiorite through an increase in the plagicalose content up to 35-40% of the total feldspar.

Pegmatite

The youngest unit present is the various end member legratites. There are composed mostly of feldspar and quartz.
They may contain up to 75% subhedral feldspar as large as
15-20 mm. in size. About 60% of this feldspar appears to be
alkali feldspar (orthoclose), the remaining 40% is plagioclose
(oligoclose). In some units there is an intimate intergrowth
of these two feldspars. Rounded anhedral quartz is responsible
for 24% of the rock and 1% or less is unoriented biotite flakes.
The average size of these pegmatites is generally less than
12 inches in width. These pegmatites are predominantly found
in the link granite.

Metamorphism

Metamorphism of pre-existing argillaceous sediments has resulted in the production of the biotite schist and quartz-biotite gneiss. The change from schist to gneiss is not marked by definite contact, but passes gradationally from one to the other and back again within the limits of a small zone of metaschiments passing approximately through the centre of the property. This zone is contained within the white granite unit which near the contact with these metasediments shows a distinctly porphyritic texture. The contact between the pink and white granites is in general gradational, the intermediate zone containing a mixture of which and pink feldspars inter-

growths. Only in a few instances is a sharp contact observeable and here the white granite again shows a porphyritic texture while the pink granite shows a medium to fine grained ecuigranular texture. The intrusion of these granite units and the subsequen regional metamorphism appears to be responsible for the development of the metasediments and the gneissosity and achiotosity associated with them as well as the development of a gneissic foliation within the granites themselves. Recrystallization upon metamorphism may be responsible for the development also of porphyritic textures within the granites. The origin of the pegmatites may not be stated with a certainty; its only obvious relationship to the surrounding rock is the fact that they are the youngest rocks present. They may have developed as a result of hydrothermal solutions and recrystalliantion or they may be end-member differentiates from the granitic magna.

Structure

trend. This is seen in the banding of the granites with queiscic textures and also in the metamorphosed sediments.

There appears to be a parallel orientation of porphyritic felds; and metasediments and metasediments.

The regional dip is to the south-southeast and is steep, ranging from 30 to vertical. Emplacement of the granites has resulted in lecticular bodies of metasediments being enclosed in them.

Exploration

The exploration and development of this property has been carried out over the 1969 and 1970 field seasons. A total of 721 feet of trenching has been done on the showing area in the white granite and metasediment zone. Associated with this are three Winkie drill holes totalling 113 feet in length. A mean-cometer survey was carried out on the entire property on and lines 400 feet apart with 50 feet stations using a Mc Fhar model M-700 magnetometer. A scintilloweter survey using the same grid and a detailed survey covering the showing area was completed using a Precision Radiation Instrument model 1113 Scintillometer. A geological map of the entire claim block on a scale of 1 inch to 200 feet and a geological map of the showing area on a scale of 1 inch to 100 feet were completed also in May-June 1970.

Mineralization

Sulphide mineralization is restricted almost entirely to the retasedimentary units. It consists mainly of pyrrhotite with pyrite and minor amounts of chalcopyrite. This sulphide some has been traced with a magnetometer over a length of 1000 feet. The sulphides constitute small veinlets up to inches in width striking roughly parallel to the schistosity of the biotite schist and the strike of the granite metasediment contact. Small cigar shaped pods of sulphides are also present

in a small area of impure biotite quartzite, but most of the sulphide in disseminated form is associated with finer grained sugary textured biotite schist. It generally accounts for less than 1% of the rock.

The metasediments and porphyritic white granite are uraninferous. They run to an average of 2-3 times background in a mone about 800 feet long. The radioactivity appears associated with the biotite and sulphides and the biotite in some instances has been stained yellow by its presence.

This report has been prepared by Mr. J. C. Coyne and is submitted on behalf of Bralorne Can-Fer Resources Ltd.

Survey Personnel

The line cutting contractor was Jack Howard, c/o Ontario Central Lirlines, Kenora, Ontario. This contract was performed during the region March 12 to April 10, 1970 inclusive.

The geological survey was carried out by:

Farty-Chief: John Coyne, Dept. of Geology, Carleton University, Ottawa, Ontario

Assistants: William Luff, Dept. of Geology, University of New Brunswick, Fredericton, New Brunswick.

William Morton, Dept. of Geology, Carleton University, Ottawa.

The period of this survey for the above personnel was May 30 to June 30 inclusive, 1970

Jamuary 11, 1971

J. C. Coyne Ju Appa

Certificate

1, John C. Coyne, do hereby declare

- that I am a geologist, currently registered at Carleton University, Ottawa, completing two courses in geology towards a B. Sc. degree and taking other courses for graduate credit,
- 2. that I have practiced my profession since 1968,
- 3. that I reside at apartment #404, 370 Metcalfe Street, Ottawa,
- that the accompanying report was written by me and that the field work was performed by myself and assistants during the interval May 30th to June 30th inclusive, 1970.

Signed

) (Cayou

January 11, 1971

J. C. Coyne

SCINTILLOMETER SURVEY

Dates of Survey

Field work on this survey was conducted between May 13 and June 14, 1970. This included the tieing in of all lines and the scintillometer survey. Completion of field data, drafting, interpretation and typing was done at intervals from June 14 to January 11, 1971.

Bralorne Can-Fer Resources Ltd. (Licensce T-306) is submitting this report on the radiometric survey for a credit of 20 days per claim assessment work on the property of 18 claims under the Special Provisions regarding submission of Radiometric Surveys.

Survey Procedure

The scintillometer survey was performed using a Precision Radiometric Scintillometer, Model IIIB, having a sodium iodide crystal 1.5 inches X l inch which measured total gamma radiation, ie. basically gamma radiation in combination from uranium, thorium and potassium.

The winter magnetometer survey had a line aggregate of 18.7 miles of cut, chained and picketed lines comprising base line, 400 fect offsets and tie lines. The magnetometer survey shows 1400 stations and the scintillometer survey about 1350

where readings could not be taken in summer weather. Readings on the scintillometer survey were taken at 50 feet intervals and range from a low of .015 MR/HR (milliroentgens per hour) to a high of about .120 MR/HR or about 8 times background. In the area of the uraniferous showings, readings are as high as 5-10 X B.G. when using an immediately adjacent background.

Personnel on the scintillometer survey initially had to take the base line and offsets, locate the claim posts, chain and tie all into the grid system for the base map. This was followed by the scintillometer survey with readings at 50 feet intervals and further detail in the area of the showings. Final work was plotting up and making a finished map in the field.

Conclusions

The scintillometer survey was performed to systematically prove and disprove areas in the 18 claim group. The group had been prospected but there was some room for doubt as to radiometric values in the area remote from the main showing.

Radiometric readings from the scintillometer survey ranged from 0.015 to 0.120 milliroentgens per hour. Most of the new higher radings were adjacent to the known showing and were opened up by further trenching.

Personnel

Line Cutting Contractor - Jack Howard,
c/o Ontario Central Airlines,
Kenora, Ontario.
March 12 - April 10, 1970 inclusive.

W. A. Bliedrecht: 190 Catherine St. S., Hamilton, Ontario.

May 13 - June 14 inclusive

David Proudfoot: Dept. of Geology, Carleton University,

Ottawa, Ontario.

May 24 - June 14 inclusive

C. A. Burns Consulting Ltd. 100 Adelaide St., W. Toronto, Ontario

Des O'Shannessy Mapping Service (drafting) 160 Bay St., Toronto, Ontario

C. C. Allen: (supervision and report)
100 Adelaide St. W.,
Toronto, Ontario

6 Callen

Cartificate

I, C. C. Allen, do hereby declare

- B. Sc., University of Manitoba, 1936
 M. S., University of Minnesota, 1938
 - Ph. D., University of Minnesota, 1940
- 2. that I have practiced by profession continuously since 1935.
- 3. that I reside at 46 Aldershot Crescent, Willowdale, Ontario.
- that the accompanying report was written by me and that the field work was performed as indicated in the report under my supervision.

Signed

J. J. allen

Jamany 11, 1971

C. C. Allen

