

# RP 203(A)

PRELIMINARY REPORT ON BELLETERRE MAP-AREA (SHEET NO 2), GUILLET TOWNSHIP, TEMISCAMINGUE COUNTY

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DEPARTMENT OF MINES  
MINERAL DEPOSITS BRANCH

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PRELIMINARY REPORT  
ON  
BELLETERRE MAP-AREA (SHEET No. 2)  
GUILLET TOWNSHIP  
TÉMISCAMINGUE COUNTY

BY

P. E. AUGER



QUEBEC  
1947

BELLETERRE MAP-AREA

(Sheet No. 2)

Guillet Township, Témiscamingue County

by

P. E. Auger

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INTRODUCTION

The area studied during the summer season of 1946 is in the northwestern quarter of Guillet township. It is the easterly extension of Sheet No. 1, published by the Quebec Department of Mines under the title: Belleterre Map-Area (Sheet No. 1), Preliminary Report No. 194.

The area comprises the properties of Belleterre Quebec Mines, Flobec Gold Mines, Brenmore Gold Mines, Manterre Gold Mines, and parts of Ortona Gold Mines and Lake Expanse Gold Mines.

The Belleterre Quebec mine is the only one producing gold in the district. Aubelle Mines, located on Sheet No. 1, is in the development stage. All the other properties are still in various stages of exploration.

The present survey was greatly facilitated by well-cut claim lines and numerous picket

lines cut in a north-south direction at 200-foot intervals. Furthermore, the whole surface of the clearing around the mill-site of Belleterre Quebec Mines had been recently given a plane-table survey, and the very accurate maps of the outcrops outlined in that investigation were supplied to the writer.

Most of the mapping was done by chain-and-compass traverses along the picket lines, and scouts searched the intervening ground for outcrops that might have been hidden from these lines.

#### GENERAL GEOLOGY

The whole map-area is underlain by Precambrian formations which are covered at nearly every point by glacial débris consisting mainly of sand and gravel. Glacial clay is virtually non-existent within the map-area which lies south of the clay belt favourable to agriculture.

The area is of very low relief, and as a rule its overburden is shallow, except in low ground and swamps. The underlying rock is therefore easily uncovered, and exposures due to trenching and stripping are numerous but, however, of small extent.

The Precambrian rocks are, for the most part, volcanics of Keewatin-type, in which the structure is well marked by numerous bands of silicified tuff.

Intrusive bodies vary from very basic diabase to granitic porphyry dykes and their age relationship is not very clear in some parts of the area. Vein material which forms the various orebodies seems to be intimately related to the

structure and in some ways also to a number of the intrusives.

Table of Formations

Quaternary		Stream and swamp deposits Sand, gravel, and boulders
Precambrian	Intrusives	Diabase Lamprophyre Veins Rhyolite porphyry Syenite Syenite porphyry Granite Diorite
	Keewatin-type volcanics	Diorite Basalt Andesite Rhyolite Tuff, breccia, fragmental and pyroclastic sediments

Keewatin-Type Volcanic Rocks

Most of the map-area is underlain by volcanic rocks of Keewatin-type. These rocks exhibit the characteristics usually found in similar formations in other parts of the district, namely: a general alteration, pillow and flow structure, amygdules, lava flows interstratified with tuff beds, pyroclastic sediments, and volcanic breccia.

The most abundant volcanic rocks are intermediate to basic in composition. In places, especially just north of the Belleterre townsite, these volcanics seem to be slightly serpentinized. During the summer of 1945, a large body of serpentine was observed just west of this part of the map-area, as is shown on Sheet No. 1.

Pillow structure is most common in the eastern half of the map-area, principally on the Flobec and Belleterre grounds. In most places, the pillows are so well preserved that the tops and bottoms of the volcanic flows can be distinguished.

In the whole map-area, only very few outcrops of basalt were found, but everywhere they seemed to represent local facies of basic flows rather than continuous individual flows.

Dioritic volcanic flows are visible in numerous places, interbedded with the other volcanic formations. As they occur in other parts of the district, it is very difficult to determine whether the diorite bodies are intrusive or extrusive in origin. The diorite is medium grained, massive, and yellowish-green, but it seems to lack good volcanic structures. The only reason for classifying this diorite with the volcanic rocks is its close association with these formations. However, it appears that the so-called dioritic volcanic is an altered zone of volcanic rock in the vicinity of larger masses of coarse intrusive dioritic bodies. In most places, it is impossible to determine the exact contact between the two rocks because of great similarity in composition and also on account of shearing in the transition zone.

Acidic lavas are still fewer than the basic flows and present no particularly noteworthy characteristics.

### Tuff, Breccia, and Fragmental Volcanics

Tuff is quite abundant throughout the map-area, especially in the vicinity of Guillet (Mud) lake, on the Brenmore property. These tuff bands are everywhere light-coloured, highly silicified formations which are used as horizon markers along the structure.

Breccia and fragmental volcanics are present in various places, and it is not uncommon to find them accompanying tuff bands, especially on the Brenmore and Lake Expanse properties. Agglomerates are visible on the surface about 850 feet east of shaft No. 2 of the Belleterre Quebec mine and on the 500-foot level, near the same shaft.

### Intrusives

Intrusive dykes and masses are numerous everywhere within the map-area. The most abundant intrusive rock is the diorite, which is found in the form of dykes and irregular bodies more or less conformable to the structure of the region. These dioritic intrusives are medium to coarse grained, and they are characterized by a yellowish-green colour and the presence of numerous 'eyes' of blue quartz. In places, however, it seems that these massive diorite bodies pass gradually to a dioritic volcanic and into a typically andesitic pillow lava, without any definite contact. This seems to indicate that, in places, the diorite is definitely of volcanic origin.

### Granite porphyry

Granite porphyry is found in dykes and masses from one to 120 feet in width, especially in the western half of the map-area. The dykes have a trend somewhat parallel to the general

structure of the region, but in numerous places they are seen to cut across flows and tuff bands. The rock has a grey to pinkish colour and is usually coarse-grained. It is composed of white feldspar and abundant quartz in the form of phenocrysts in a matrix of quartz, feldspar, and fine chlorite and sericite.

The age relationship between this porphyry and the syenite porphyry described below is not very clear. At the Aubelle mine a large dyke of granite porphyry is definitely cut by quartz veins which seem to be different from the gold-bearing veins of the property. On the other hand, a dyke of syenite porphyry is seen to cut across vein No. 11 at the surface, just north of shaft No. 2 at the Belleterre Quebec mine. This suggests that the syenite porphyry is younger than the granite porphyry, but further evidence must be obtained before definite conclusions are warranted.

#### Syenite porphyry

Most of the porphyry dykes found on the Belleterre property belong to the syenite porphyry group. They occur in dykes and in lenticular bodies, the width of which may vary from a few inches to 100 feet.

This porphyry is composed of phenocrysts of white to pinkish feldspar in a very fine matrix of quartz, feldspar, biotite, and apatite. Biotite and hornblende phenocrysts are commonly visible in the rock. In some places, this porphyry cuts the veins, as mentioned above; in others, it is cut by the quartz veins, as may be seen on the Brenmore property just north of Guillet (Mud) lake. Within the map-area, this type of porphyry is more abundant in the vicinity of the veins.



### Rhyolite or aplite

A small dyke of very fine acidic rock was seen along the north side of the road leading to Guillet (Mud) lake, about due south of the hospital of the Belleterre Quebec mine. The dyke occupies a tension crack which belongs to a system of fractures of the same type filled with small quartz veins that are cut by a lamprophyre dyke.

### Lamprophyre dykes

Lamprophyre dykes are numerous and vary in width from a few inches to 15 or 20 feet. The composition of the lamprophyre dykes is quite different in the various dykes.

These are:

- 1) the biotite lamprophyre dykes in which large flakes of biotite form over 50 per cent of the rock;
- 2) the hornblende lamprophyre dykes in which needles of hornblende are distributed throughout the matrix (This type also contains altered feldspar and a few flakes of mica.); and
- 3) a third type of lamprophyre dyke designated in the field as 'diorite' lamprophyre. The colour of this third type is lighter than that of the other two, and in places the lamprophyre dyke looks very much like the diorite in which a strong schistosity of parallelism of the elements is developed.

Well rounded and angular granite porphyry and quartz pebbles have been seen in the three types of lamprophyre dykes. Volcanic fragments are also present, usually in the form of

slivers. It is quite noticeable that the lamprophyres are more numerous in the vicinity of known orebodies or near most mineralized showings of some importance in the area.

#### Diabase dykes

One dyke of quartz diabase was observed to cross the western part of the properties of Belleterre Quebec Mines and Manterre Gold Mines, in a N.25°E. direction for a distance of about 10,000 feet. The dyke is ten to twenty feet wide. It is a dark, massive, fresh-looking rock with a thin, light brown weathering at the surface. It is found cutting the lavas, and it contains inclusions of lava and of lamprophyre.

### STRUCTURAL GEOLOGY

The most important structural feature of the region is a large anticlinal fold plunging eastward and enveloping the eastern end of a large mass of granite a few miles north of the map-area.

The structure of the formations studied in the present report belongs to the southern limb of this major east-plunging anticlinal fold. In the investigation carried out in 1945, the strike of the formation was shown on Sheet No. 1 to orientate mostly toward the northwest. In the present map-area, most of the structure is northeast, except in the western part of Sheet No. 2, near the boundary between the two sheets where the strike is east-west. All the formations dip steeply south to southeast. This southern limb of the major anticline is therefore a secondary anticline plunging southward with its top facing south. The best markers for the study of the structure are certainly the tuff bands, the pillow lavas, and the fault zones.

There are a large number of shear zones and faults in the map-area. The two main zones are Mill Creek fault and Mud Lake fault. These two are wide shear zones which traverse the area in a northeasterly direction. Numerous minor shear zones, which may be considered as subsidiary shears, occur on either side of the main fault zones. Many other shear zones and faults may be found at various places, at the surface and underground, in the northern part of the map-area and away from the two main fault zones. Very recent drilling from the surface, east of the Belleterre shaft No. 1, seems to indicate intensive drag-folds in the volcanic formations. In the Belleterre mine, the tuff beds which limit some of the veins, especially vein No. 12, appear to have been the locus of important movements which may be genetically related to the formation of the veins.

### ECONOMIC GEOLOGY

Belleterre Quebec Mines, Ltd., is the only producing mine in the district. Aubelle Mines, in which underground development work is rapidly progressing, is in the map-area studied in 1945, but it will be mentioned here because development was just beginning when the writer left the field in the fall of 1945. Numerous other prospects are still in the exploration or surface development stage. The veins are of the free-gold type with very little sulphides. They may be divided into three definite groups as follows:

a) conformable veins which are in or alongside tuff beds;

b) transverse veins which cut across the structure in strike and dip, but which are generally confined to a single lava flow; and

c) shear veins which follow definite shear zones, generally more or less parallel to the structure.

Up to the time of writing this report no extensive orebody has been found which belongs to this last group of veins.

### Belleterre Quebec Mines, Limited

The Belleterre property occupies the greater part of the northern half of the map-area. Most of the producing veins are in the northeastern corner of the region, in a series of intermediate to basic lava flows separated by silicified tuff bands. The strike of the formation is about N.40-60°E., with a steep dip toward the south.

The three types of veins described above are present on the property:

a) transverse veins, including veins Nos. 2, 11, 12, and 20.

b) conformable veins or tuff veins, including veins Nos. 14, 16, and 18; and

c) shear veins including vein No. 5 and the Andresen veins.

There are a few other veins of less importance which have been explored from the surface but, to date, have not been shown to be of economic value.

### Transverse Veins

#### Vein No. 12

Vein No. 12 is the most important orebody so far explored and developed at the Belleterre Quebec mine.

It has been opened up by shafts Nos. 1 and 3 and has been the main source of ore since the beginning of milling operations in 1936.

Vein No. 12 is composed of bluish to smoky quartz, which is massive in most places, and contains numerous inclusions of wall rock. It is believed to be of the fracture-filling replacement type. Pyrite, pyrrhotite, sphalerite, galena, and some chalcopryite are present in small amounts at numerous places. Free gold is not uncommon. The gold content is persistent throughout the vein, with an average grade of about 0.39 ounces per ton.

It has a general N.67°E. strike and an average dip of 57° toward the northwest. The vein has been followed horizontally for a distance of more than 3,000 feet and to 1,300 feet below the surface. Vein No. 12, which has a width varying from a few inches to 10 feet, has a very complicated structure. In the upper levels at the western end, it is composed of two parallel branches. Below the 125-foot level, the southern branch only continues and flattens to form a series of rolls resembling a succession of anticlinal and synclinal folds. These rolls plunge downward toward the east at a low angle, and they die out at depth. As the vein is followed eastward, it steepens gradually, becoming almost vertical at its eastern end.

The vein is almost entirely included in an intermediate to basic lava flow, called flow No. 12, which is limited on the north side by tuff No. 14 and on the south by tuff No. 16. These tuff bands belong to the regional structure, strike N.60°E., and have a southerly dip. In the upper levels, vein No. 12 is parallel to the tuff bands in strike but dips northward at 35° to 70°. The vein is limited down-dip and up-dip by the

tuff bands on either side of flow No. 12. For this reason, vein No. 12 does not extend to a great depth at its western end, where there are flats and rolls. Farther east, the vein is steeper and reaches greater depth before being cut off by No. 14 tuff band. A similar change occurs in the vein along the strike. Near the surface, it is almost parallel and close to tuff No. 16. For this reason, it can be traced for over 3,000 feet. At depth, the strike of the vein becomes almost east-west. It cuts across flow No. 12 and is itself cut off by the two tuff bands which maintain their northeast strike. Because of this, the vein becomes rapidly shorter at depth and its top rakes down underneath No. 16 tuff beds. On the 1,300-foot level, at the eastern end, vein No. 12 is almost vertical and has been developed over a very short distance only.

#### Vein No. 20

This vein was discovered recently, and consequently, little development has been done on this new find. It is topped by No. 16 tuff horizon at the eastern end of vein No. 12 and is immediately below this vein. In section, it looks as if it were a repetition of vein No. 12 under which it is located at a distance of 50 to 100 feet.

Vein No. 20 belongs to the same type of fracture system as vein No. 12. It has been opened up on the 1,300-, 1,425-, and 1,550-foot levels for short distances. It resembles vein No. 12 in its characteristics and seems to extend in strike and dip from the 1,550-foot level. Good tenors of gold over mining width have been obtained by the Company.

## Vein No. 2

At the eastern end of vein No. 12 and above it, that is, above No. 16 tuff horizon, there is another transverse vein which behaves in a similar manner. Vein No. 2 extends from the surface, near shaft No. 1, to a depth of 600 feet. It has a general S.70°E. direction and a steep north-easterly dip. Near the surface, the western end of vein No. 2 is quite far from the eastern end of vein No. 12, but, as it approaches the 500-foot level, the two veins become closer and are approximately opposite each other on both sides of tuff No. 16. In section, at this point, the two veins look like a single vein divided into two sections by the tuff horizon.

Vein No. 2 was exposed on five levels for lengths ranging from 290 to 500 feet and widths from a few inches to 6 feet.

## Vein No. 11

Vein No. 11 is in the vicinity of shaft No. 2 and also belongs to the transverse type. It is shaped like a reverse 'S' at the surface and on the upper levels, and, as it is followed down the dip, the drag-fold appearance becomes less pronounced. It seems that vein No. 11, which is in an andesite flow, has the same relationship to tuff beds as the other transverse veins. It has been driven out on the 125-, 250-, 375-, and 500-foot levels over lengths of approximately 500 feet. In some places, it is composed only of stringers, but, in others, it has a maximum width of ten feet. Further development is planned for this vein.

The three transverse veins described above are gold-quartz veins of the free-milling type, containing some sulphide and, in places,

abundant free gold. The quartz is grey to blue, smoky in some sections, and very fine grained. The sulphides are pyrite, pyrrhotite, sphalerite, and chalcopyrite. It is quite common to find sphalerite associated with the higher grades of ore.

### Tuff Veins

The tuff or conformable veins are intimately associated with the silicified tuff bands which are interstratified with the lavas in the region. The veins are composed of blue- to bluish-white quartz accompanied by some sulphide minerals. They are replacement veins which generally show good banding, whether they are located in or alongside the tuff horizons.

#### Vein No. 14

Vein No. 14 is 700 feet north of vein No. 12, on the 500-foot level. It is a quartz replacement type of vein along a shear zone in a brownish rock of sedimentary origin, accompanied by lenses of silicified tuff in what is known as the No. 14 tuff horizon.

It strikes N.50°E. and dips about 70° south. The vein has been opened up on several levels from the 500-foot level down to a depth of 1,500 feet. At its maximum depth, it joins fractures belonging to the No. 12 system, but it is not possible at this point to determine the exact relationship between the two veins.

Vein No. 14 was opened up by 865 feet of drifting on the 500-foot level, and it is now being developed on several other levels to a depth of 1,500 feet. It shows ore shoots varying in width from a few inches to 5 feet on the upper level and to 8 or 12 feet on the lower levels.



On the 1,500-foot level, a 350-foot length of vein is ore-grade in gold and carries in places considerable sphalerite.

#### Vein No. 16

This vein is associated with the No. 16 tuff horizon which limits veins Nos. 12 and 20 at their upper extension. It has been explored chiefly in places where vein No. 12 touches tuff No. 16. It seems that there are several veins which accompany the No. 16 tuff horizon. These veins have been opened up mostly for a length of 430 feet on the 750-foot level, over widths ranging from a few inches to 3 feet. The same vein has been opened up over short lengths on the 1,100- and 1,300-foot levels. Some visible gold and good assays in gold were obtained in the quartz which replaces the tuff.

#### Vein No. 18

This vein is opened up on the 500-foot level, for a distance of 245 feet. It is composed of quartz in and along No. 18 tuff horizons, situated 1,000 feet south of No. 16 tuff band. The width of this vein varies from stringers to 5 feet. Drill-hole intersections above the 500-foot level show that the vein extends toward the surface, but very little is known about the size of this possible orebody.

#### Vein No. 1

This vein follows a tuff horizon which extends at the surface east of shaft No. 2, along the north side of Mill Creek fault. The vein is composed of smoky quartz a few inches to twenty feet wide, and it is exposed at the surface in trenches for a total distance of 1,500 feet.

The vein is mostly within the tuff band and contains some sulphides. Gold is reported throughout the vein, but the narrow widths have to date prevented extensive development.

### Shear Veins

#### Vein No. 5

This vein is about 1,000 feet south of shaft No. 2, along the motor road leading to Guillet (Mud) lake. It strikes east-west and dips 50° south to vertical. The vein is exposed at the surface and was explored by diamond drilling for a total distance of 950 feet and found to have widths varying from a few inches to 3 feet. Good assays in gold and some free gold were obtained from the surface, but diamond drilling did not give encouraging results.

#### Andresen veins

These veins are to the west of the Belleterre ground, on the property of Conway Gold Mines, Limited. The writer described these veins in his report for 1945. It may be stated here that there are three principal veins in this area, and that they are all of the shear type. They range in width from a few inches to four feet. One vein was followed at the surface for 1,000 feet. The strike is close to east-west and assays in gold to 0.39 ounces per ton are reported. The veins are well-defined quartz veins in shear zones which transect the structure at a low angle.

#### Aubelle Mines, Limited

This property is situated west of Belleterre ground, and it was described in the writer's report of 1945. Since that time, extensive underground development was carried out at

the Aubelle mine on vein No. 1. The vein was opened on three levels and explored by approximately 3,000 feet of drifting and cross-cuts. It was found that the vein follows the southern contact of a tuff horizon which is cut in numerous places by porphyry and lamprophyre dykes. The country rock is basic to intermediate lava containing diorite and gabbro. The vein which is almost everywhere within the tuff horizon strikes a little north of west and dips 70° to 75° southward. It is very lenticular in shape and its width varies from a few inches to six feet. The vein-forming minerals are white and dark quartz containing, in places, abundant amounts of disseminated sulphides, such as pyrite and pyrrhotite, a little chalcopyrite, and, locally, considerable sphalerite. Galena was also found in very small amounts. The gold tenor is somewhat erratic, and further exploration is being done by diamond drilling in order to obtain more information about the structure and to discover some additional ore shoots.

#### Ortona Gold Mines, Limited

This property is situated to the northwest of the Belleterre ground. Most of the showings are in the southeastern half of the property which is underlain mainly by basic volcanic, diorite, tuff, and probably other sediments. Granitic rock intrusions were observed in the northwestern part of the property.

Most of the veins are well-defined shear veins striking about east-west and dipping steeply south to vertical. The veins are lenticular in shape, and some of them may be followed at the surface for a maximum distance of about 800 feet. The widths vary from a few inches to three feet.

The veins are composed of white and smoky quartz which contains in places narrow streaks or pockets of pyrite, chalcopyrite, and galena accompanied by a few grains of sphalerite. In some veins, the sulphides are disseminated throughout the vein.

Gold was found in most of the veins. During 1945, an extensive program of diamond drilling was undertaken to explore the vein at depth. Exploration and development to date have not proved the presence of any extensive commercial orebody, and no work was in progress at the time of the writer's visit.

#### Lake Expanse Gold Mines, Limited

The property comprises a group of thirteen claims situated on the southeastern side of Guillet (Mud) lake.

The claims are underlain by alternating bands of tuff, greenstone, and diorite, and the structure generally trends northeastward.

The gold showings are at widely spaced intervals along a definite belt of tuff and basic lava in the north-central part of the property. There are no determinate veins, but rather mineralized zones composed of quartz stringers and sulphide replacement in country rock. These seem to be related structurally to bends or drag-folds in the structure.

The most important is No. 1 ore zone which is in the western part of the property. It has a general north-south trend and is composed of a series of drag-folds and shears in which small lenses of quartz and a fair amount of sulphide may be seen for a distance of about 400 feet throughout the zone which has a width from 20 to

30 feet. It contains pyrite, chalcopyrite, pyrrhotite, galena, and sphalerite. Free gold was found at several places in the quartz, and it seems that the higher-grade sections accompany the sphalerite-galena mineralization.

Extensive drilling was done on this zone. If failed, however, to reveal the presence of an extensive orebody but indicated, at the southern end, numerous small mineralized veins containing an encouraging tenor of gold.

The other zones are about the same type but not so extensive as No. 1 ore zone. Some of them carry gold in commercial amount at the surface, but a few holes put down to explore these zones at depth failed to yield interesting results.

#### Flobec Gold Mines, Limited

This group of five claims is along the southern boundary of the Belleterre property, just north of Guillet (Mud) lake. The whole property is underlain by volcanic pillow lava, containing some diorite, porphyries and lamprophyre dykes. Numerous east-west shear zones contain quartz stringers and some mineralization from which in places good assays of gold have been reported. Along the northern border of the property, a quartz vein of small dimensions, apparently associated with a porphyry dyke, has been opened up by several trenches. Diamond drilling explored the shear zones and the vein, but it failed to indicate an orebody.

#### Brenmore Quebec Mines, Limited

This property encloses the east-central part of Guillet (Mud) lake. It is underlain

by lavas and large quantities of tuff, diorite, and porphyry. It is intersected by several faults, the most important in size being the Mud lake fault which has a northeasterly direction and follows the whole length of Guillet (Mud) lake.

Numerous veins and mineralized tuff horizons have been uncovered by trenching and explored by diamond drilling to the north and south of Guillet (Mud) lake. Most of the veins are within a short distance from the shores of the lake and from the Mud Lake fault. The majority of the veins have a northeasterly direction and the maximum width observed is eight feet. Some veins are exposed for lengths of more than 100 feet. They are usually composed of white, glassy quartz containing some sulphides. Free gold is reported to have been found in some of these veins. Most of the mineralized tuff bands are dark, and, in places, they are accompanied by porphyry.

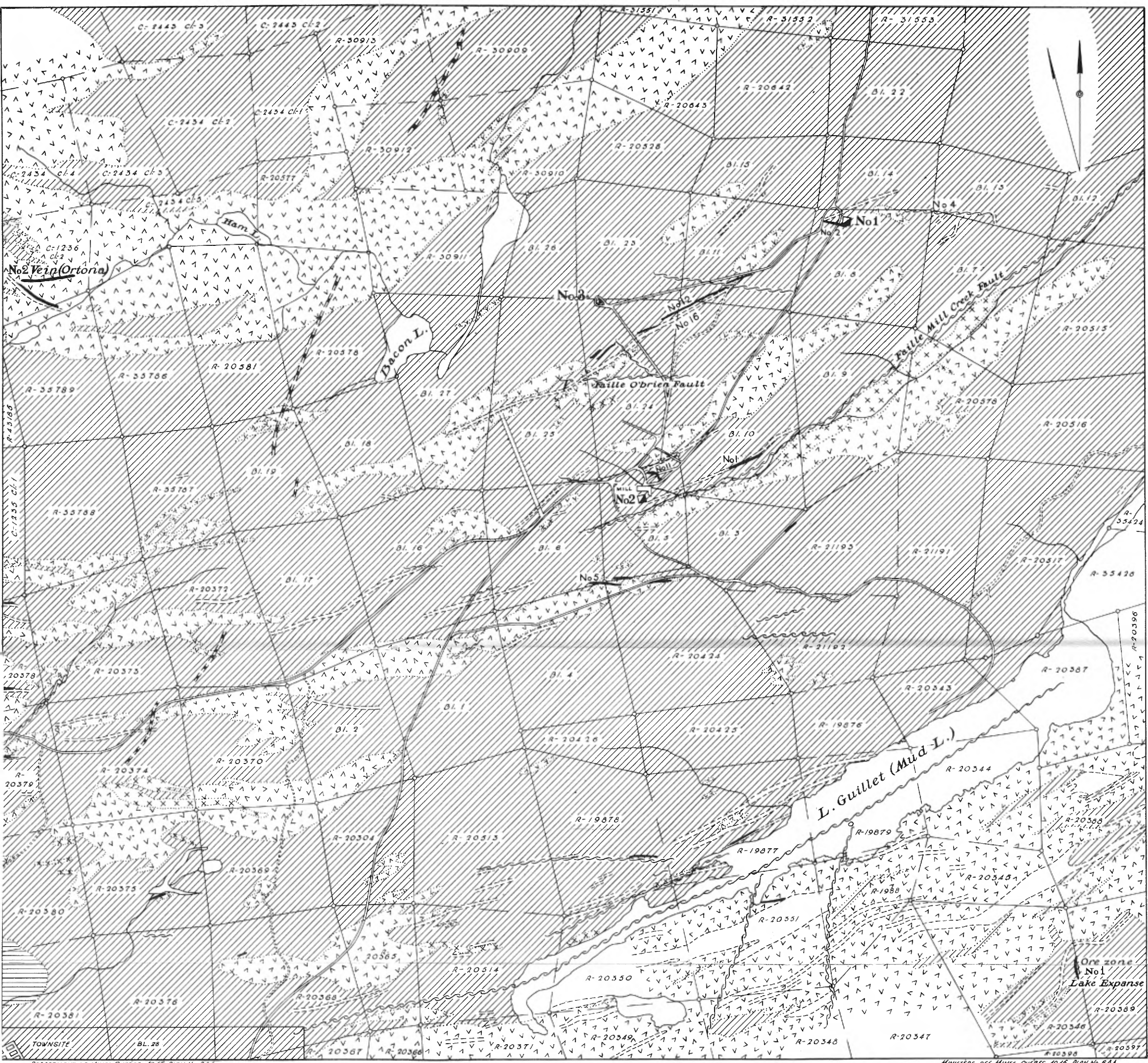
The gold content found was mostly within 500 feet of the north shore of Guillet (Mud) lake. Some of the assays were of fairly high grade, but surface working and extensive drilling failed to reveal an orebody of commercial size.

#### Manterre Gold Mines, Limited

This property comprises five claims situated a short distance northwest of the Belleterre shaft No. 3. It is underlain mostly by basic to intermediate volcanics and diorite, being cut by dykes of porphyry, lamprophyre, and diabase. One small quartz vein two feet wide is visible in the southeastern corner of claim 30910. Most of the drilling done on the property was aimed at intersecting the prolongation at depth of the Belleterre No. 12 vein or at intersecting veins belonging to the same structure-pattern as vein

No. 12. Some intersections containing quartz and sulphides were encountered at depth, but no gold was found.

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DEPARTMENT OF MINES, QUEBEC, 1946, PLAN No. 641

MINISTÈRE DES MINES, QUÉBEC 1946, PLAN No. 641

- Veins  
Veines
- Diabase dyke  
Dyke de diabase
- Granite and feldspar porphyry  
Granite et porphyre à feldspath
- Diorite  
Diorite
- Serpentine  
Serpentine

RÉGION DE  
**BELLETERRE**  
AREA

SHEET No.2    FEUILLET No.2

0    500    1000    1500  
feet    pieds

GÉOLOGIE BY P.E.AUGER 1946    GÉOLOGIE PAR RE AUGER

- Intermediate and basic volcanics  
Roches volcaniques basiques et neutres
- Pyroclastic sediments mostly silicified tuff  
Sédiments pyroclastiques surtout tuf silicifié
- fault and shear zone  
faillie et zone de laminage
- Approximate geological boundary  
Contacts géologiques approximatifs
- Shaft  
Puits de la Mine