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Advance report, Barry lake area, Abitibi county and Abitibi territory

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BARRY LAKE AREA

ABITIBI COUNTY AND ABITIBI TERRITORY

PROVINCE OF QUEBEC, CANADA

DEPARTMENT OF MINES

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BARRY LAKE AREA

ABITIBI COUNTY AND ABITIBI TERRITORY

by

R. L. Milner

QUEBEC

1939

P.R. No. 143

BARRY LAKE AREA

ABITIBI COUNTY AND ABITIBI TERRITORY

by

R.L. Milner

INTRODUCTION

The Barry Lake map-area is approximately sixty miles north of Rouleau Siding, which is on the Canadian National railway about sixty miles east of Senneterre. The map-area, which includes some 400 square miles surrounding Barry lake, was examined by the writer during the summer of 1939.

The area is accessible by plane from either Senneterre or Oskelaneo, or by canoe from Rouleau Siding. A winter road from Rouleau Siding to the Chibougamau district passes through its south-eastern corner.

The region is one of low relief. Glacial deposits, chiefly sand or sand and boulders, cover most of the bedrock and to a large extent control the topography. Swamp and muskeg are very common. Lakes are numerous, but most of the connecting streams are too small for canoe travel. Barry lake, lying in the centre of the area, drains both north and south by means of the two St-Cyr rivers.

GENERAL GEOLOGY

Exposures are so widely scattered that it is difficult to establish boundaries and relationships of the formations. The following classification must therefore be regarded as provisional.

Glacial and Recent	Sand, gravel, boulders
Intrusives	Granite and pegmatite dykes Quartz and feldspar porphyry Granite and quartz-diorite gneiss
Keewatin (?)	Amphibolite and metasomatic hornblende rocks Gabbro and diorite Tuff and greywacke Acidic to basic volcanics

Keewatin (?)

The rocks considered to be Keewatin and generally classed

as 'greenstone' form a belt, seven to twelve miles wide, extending across the area in a direction somewhat north of east. The belt continues beyond the limits of the map-area both to east and west and is a part of the Penaché-Eagle River belt of the Chibougamau map-sheet. The rocks of the belt include an apparently conformable series of lavas, tuffs, and breccias, from andesite to rhyolite, and some clastic sedimentary rocks, chiefly greywacke. All of these rocks have been metamorphosed to a varying extent, the more basic varieties forming chlorite schists, and, in some cases, hornblende-rich rocks.

Within the greenstone are numerous small dykes of diorite and gabbro which are difficult to distinguish from coarse-grained basic flows. Because of the metamorphism and development of schistosity in these, they are considered to be closely related to the volcanics in age, and probably in origin.

Intrusives

Both on the north and the south, the Keewatin belt is bounded by intrusive gneiss, of granitic to quartz-dioritic composition. A body of such rock extends along the northern edge of the map-area and another occupies much of the southern part. A third, much smaller, body splits the greenstone belt in two at the western boundary of the area.

Numerous small dykes of feldspar porphyry and quartz porphyry, granite, aplite, and pegmatite occur both in the granite and in the greenstone areas. They are considered to be of approximately the same age as the main intrusives.

The larger intrusive bodies are grey, medium to coarse gneisses, composed of biotite and (or) hornblende, plagioclase feldspar, and quartz in variable proportions. They are strongly foliated, in general parallel to their borders.

Associated with these intrusions are medium-grained amphibolites and hornblende-rich rocks. In many cases the original nature of these rocks is unknown, but in others their derivation from the Keewatin formations is apparent. They occur chiefly near the margins of the granitic bodies, and are best exposed in the northwest corner of the area, and around Lac aux Loutres and the west end of Barry lake.

STRUCTURE

The general trend of the formations is N.70°E. in the western half of the sheet, and N.80°E. to S.80°E. in the eastern half, but there is an abrupt swing to southward strikes at the eastern boundary of the area. The dips are in general steep, except in

the western section of the belt, where dips of 45 degrees, both north and south, are common.

In most places, the Keewatin formations are strongly schistose, the schistosity being parallel to the bedding planes wherever the latter were determined. The region has been complexly folded, but the scarcity of outcrops and the absence of reliable key horizons makes the location of fold axes impossible. Broadly stated, the structure is that of a tightly folded synclinorium, with a broad, open anticline in the western part of the belt.

The presence of a fault of considerable magnitude, striking in a north-south direction, is suggested by the apparent displacement of the granite-greenstone contact at the south end of Lac aux Loutres. In places along the north shores of Barry lake and Lac aux Loutres, strong shear-zones have been developed parallel to the regional schistosity, especially along the contacts between rock of contrasting physical characteristics.

ECONOMIC GEOLOGY

The widespread cover of overburden makes prospecting in the area difficult. Up to the present, gold is the only metal which has been found in deposits which give promise of commercial size and grade. The occurrences may be divided into two groups: (1) quartz veins, and (2) mineralized shear-zones.

Numerous quartz veins occur in the greenstones, but few are large enough to merit prospecting. They consist of white or bluish quartz, in some cases with calcite and brownish ankerite. Tourmaline was noted as a minor constituent of a few veins. The metallic mineralization consists of small amounts of pyrite and chalcopyrite, and low gold assays have been reported from two occurrences. In general, prospecting has shown that the veins are small and discontinuous.

Mineralized shear-zones occur chiefly along the southern edge of the greenstone belt, from Lac aux Loutres to the north end of Barry lake. In this region, adjustments between the intercalated acidic and basic rock types have caused the development of local shear-zones. Several such zones of considerable width have been found, and from some of them low gold values have been reported. The mineralization consists of quartz, carbonate, and a little tourmaline, either in veinlets or, more often, partially replacing the rock. Pyrite, with lesser amounts of pyrrhotite, chalcopyrite, and other sulphides, is disseminated throughout the rock, and small specks of gold may occasionally be seen.

The shear-zones are in general parallel to the regional schistosity, and are best developed along or adjacent to the contacts between formations.

Rouleau Mines, Limited

(Barry and No.118 Townships)

This property, numbered "1" on the accompanying map comprises sixty unsurveyed claims in Barry and No.118 townships, along the north shore of Barry lake, numbered as follows: A-58282-84, 82572-86, 82590-92, 82602-14, 82619-25, 82628-31, and 82883-97. The Company originally hald a block of eighty claims, staked in 1935 for S.M. Rouleau and associates, but in 1939 twenty of these were transferred to the newly formed Mégiscane Mining Corporation, whose property is described in a following section.

The claims have been explored by means of trenches, and during the winter and spring of 1939 a magnetometer survey was made of part of the property. When the writer visited the claims, in late September, 1939, work was under the direction of L. Pâge, of Rouleau Siding.

The first discovery of gold on the property was near the northwest corner of claim 82620, on the shore of Rouleau lake. Here, a mineralized zone occurs in the southern edge of a wide band of highly sheared siliceous tuff which crosses the property in a general direction N.70°E., dipping steeply north. The zone has been exposed in three cross-trenches (N.30°W.) over a length of 350 feet, and it has a maximum width of 50 feet. The rock of the zone itself is but weakly sheared. It weathers rusty-brown, but on a fresh surface is greyish and resembles rhyolite or a felsite dyke. It consists chiefly of quartz and ferruginous carbonate, with considerable disseminated sulphides. Contacts with the adjoining schist are gradational and the relationship between the two types of rock is uncertain.

The "zone" is cut by numerous, small quartz stringers, striking in a general north-south direction. These veinlets, most abundant in the central or No.2 trench, contain much fine-grained tourmaline, which is visible only under a microscope. The metallic minerals, which also are most prominent in No.2 trench, comprise mainly pyrite, with lesser amounts of pyrrhotite, chalcopyrite, arsenopyrite, and magnetite. Visible gold has been noted in some of the veinlets. The metallic mineralization appears to have been associated with the later quartz (the N.-S. stringers) and to have followed the initial alteration of the rock by the quartz- and carbonate-bearing solutions.

The following results of assays for gold are taken from a Company report:

Trench No.1	$2.85 per ton, over 34.0 feet
Trench No.2	$2.24 per ton, over 32.6 feet
Trench No.3	Not sampled

A number of higher assays have been reported from individual samples.

A two-pound grab-sample of fresh rock, taken by the writer from trench No.2 and assayed in the laboratories of the Bureau of Mines, gave $2.03 in gold per ton. Further exploration of the zone is planned by the Company.

A magnetometer survey of the property showed high magnetic anomalies in the vicinity of this zone, due probably to the content of magnetite in the rock. A second area of high anomalies was found some distance to the east, but trenching revealed only a carbonatized basic flow or dyke. Since such rocks are fairly common in the region, care must be taken in the interpretation of magnetic surveys.

The westward extension of the siliceous tuff band has been found on the east side of Lac Morissette, in claim 82614, about half a mile southwest of the locality just described. Shearing and carbonate alteration is pronounced on the southern border of the tuffs, and numerous irregular white to dark-blue quartz veins parallel the schistosity. Several trenches expose highly sheared tuffs with sparsely disseminated pyrite, but sampling indicated only traces of gold.

Near the centre of claim 82614, a heavily carbonatized zone has been exposed by stripping. The rock is dark-green to greyish-green andesite, partially replaced by a network of quartz and ankerite stringers, giving the rock the appearance of a breccia. Where exposed, the zone has a width of 15 feet, but it dies out rapidly along the strike. Low gold assays have been reported, but the discovery has not been fully explored.

Mégiscane Mining Corporation

(Barry, Bailly, and No.118 Townships)

This Company represented by the number "2" on the accompanying map, holds twenty claims, formerly part of the Rouleau Mines property, at the north end of Barry lake, in Barry, Bailly, and No.118 townships. The claims are numbered as follows: A-58280-81 82587-89, 82593-601, 82615-18, and 82626-27.

Little work has been done on the property. Trenching at the northeast corner of claim 82595, on the shore of Barry lake, has exposed a narrow quartz vein in an acidic schist. Low gold assays have been reported from here but the workings had fallen in at the time of the writer's visit, so that little could be seen.

Barry Lake Mining Company, Limited

(Barry Township)

As originally staked in 1935, this property (represented by the number "3" on the accompanying map) consisted of fifty claims

in Barry township, at the west end of Barry lake. At present, the Company holds fifteen of these claims, numbered as follows: A-60631-32, 60638-44, and 60647-52.

During the summers of 1936 and 1937, the property was intensively prospected by means of trenching and stripping. Three discoveries were made, none of which however, proved to be of commercial grade. Since 1937, the property has been idle.

The first discovery, known as Zone No.1, is at the northeast corner of claim 60642. Here, between fine grained andesite (on the north) and medium grained gabbro (on the south), a quartz body of irregular shape, from a few inches to 15 feet wide, has been exposed for a length of 50 feet, with general strike N.75°-80°E. The main part of this quartz body is rudely triangular in outcrop, being bounded on the west and east by prominent fractures that cut across the andesite-gabbro contact at, respectively, N.30°E. and N.30°W. The quartz is traversed by numerous fractures and through it are distributed pyrite and chalcopyrite, in general sparsely but locally in fair concentration. It is reported that free gold has been seen in the chalcopyrite, but, according to information furnished by the Company, sampling has indicated that the vein material is not of commercial grade.

Zone No.2 is in the same claim as No.1, being directly west of it, near the middle of the northern boundary of the claim. It is a highly sheared and silicified zone in rock that was originally dacite or andesite, and it has been uncovered for a length of 150 feet and a width of 50 feet. The schistosity strikes N.60°E. and dips 70 degrees south. The rock is finely banded in alternating light and dark streaks, the latter due to the segregation of small hornblende crystals, and it contains numerous poorly developed crystals of pink garnet. Although silicification is the chief alteration, some brownish ankerite may be seen. A few small, barren quartz veins cut the schist, through which, also, pyrite is disseminated, locally in considerable amount. It is reported that sampling of this zone showed it to contain only traces of gold.

Zone No.3 is in the northeast section of claim 60649. The northeast corner of this claim coincides with the southwest corner of claim 60642, in which Zones No.1 and No.2 occur. Four trenches here have exposed a mineralized zone for a length of 100 feet and an average width of 40 feet. The rock is a highly sheared quartz porphyry, bounded on either side by andesite and gabbro. Small quartz and carbonate stringers cut the schist, which contains also some disseminated pyrite. It is reported that sampling of the zone gave no results of interest.

Other Operations

A group of fifteen claims was staked in January, 1939, at the north end of Lac aux Loutres. Stripping has exposed a band, 50

to 100 feet wide, of bluish fine-grained schist, carrying scattered pyrite and chalcopyrite. The schistosity strikes N.60°E. and dips 50 degrees south. This schist, which is an altered tuff-breccia bordered on the north by siliceous tuffs and on the south by highly sheared andesite, may be traced westward to the boundary of the map-area. Locally, the rock is strongly sheared and carries much pyrite. A grab sample taken by the writer near the eastern end of the workings, at Lac aux Loutres, and assayed in the laboratories of the Bureau of Mines, gave only a trace of gold.

During the early summer, prospectors working along the north shore of Lac Chanceux found heavy disseminations of pyrite in andesitic and tuffaceous schists, but assays of samples gave negligible gold values. The results of this work are described in a preliminary report on the Buteux area, by B.C. Freeman (Que. Bur. Mines, P.R. No.142, 1939).

Much of the ground along the north shore of Barry lake has been staked, but, beyond superficial prospecting, no work has been done on any of the claims.

Although, up to the present, no deposits of commercial interest have been found in the map-area, the occurrence of gold at Rouleau lake justifies further exploration. The more favourable ground would be that section north of Lac aux Loutres and Barry lake, in the greenstone band near its southern contact with the granitic rocks.