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REPORT ON ALBERTA CONCESSIONS

FOR 1967

NEW SENATOR-ROUYN LIMITED

By

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Toronto, Ont.

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SUMMARY

Preliminary exploration during a four month period in the Andrew and Cherry Lake areas in north-eastern Alberta has resulted in the examination of nine general areas of radioactivity. Two of these areas have definite value and require further exploration and development. One area at Cherry Lake has ore grade material in two locations and a third area of low grade. Diamond drill targets are indicated in both areas.

The uranium values are related to fractures in the granites and gneisses and a definite fracture pattern has been discovered.

There is a possibility that an ore body may be present under the north end of Cherry Lake.

PROPERTY AND LOCATION

Property map No. 1 with this report shows the 80 square mile concession in northeastern Alberta held by New Senator-Rouyn Limited. The property is 35 miles north of Lake Athabasca and just west of the provincial boundary with Saskatchewan.

Access is by charter plane from Uranium City on the north shore of Lake Athabasca, some 400 miles

north of Edmonton, Alberta. Regular air service operates between these points. Freight barges ply from Fort McMurray down the Athabasca River to Uranium City and Fort Chipewyan in summer, where docking facilities are available.

HISTORY

The first geological investigations were made in the area by Tyrrell in 1892 and later in 1893 and 1896, when he examined the north shore of Lake Athabasca. This was followed in 1915 and 1917 by the work of Alcock. From 1929 to 1932, Cameron and Hicks conducted reconnaissance surveys north of the lake and included part of the concession area in their work.

During 1936 Alcock carried out detailed surveys in the north west part of Saskatchewan from the Alberta boarder east to Fond du Lac. The writer was a party leader during this survey and covered the area to the east of the New Senator-Rouyn holdings.

In 1938 Wilson mapped an area to the north and in 1954 Collins examined the mineral showings of the area. In 1957-58 Godfrey mapped the north east corner of Alberta, including the concession areas, and in 1959 the Geological Survey of Canada carried out a reconnaissance survey.

The only known development work in the area was that done by Dog River Mining Co. at Leggo Lake, 16 miles to the west, during the uranium rush. They trenched and sampled a vein and the results are not known. It was reported to have carried pitchblende and alteration products.

REGIONAL GEOLOGY

The concession lies near the south west margin of the Precambrian shield and is underlain by a complex of granites, gneisses, pegmatites and metasedimentary formations. There are at least six varieties of granite as mapped by Godfrey. The gneisses are biotite, hornblende and amphibolites. The sedimentary formations are quartzites, biotite schists, slates and argillites.

The rock types strike northerly and form a series of repeated bands that dip steeply to the west.

The major faults in the region trend northerly and transverse faults trend to the north west. A large regional fault, known as the Bonny fault, lies to the west of Andrew Lake. Three related faults that are almost on strike with it can be traced south to Cherry Lake. These faults and subsidary zones have been found to carry uranium, in association with feldspar porphyry.

The aeromagnetic maps of the area indicate

that the granite areas have lower magnetic values than the gneisses.

GEOLOGY OF THE SHOWINGS

During the summer nine general areas were examined on the concessions. These were the areas as indicated in the reports of Research Council of Alberta 1958 by J.D. Godfrey. The most important area is that to the north and north-west of Cherry Lake Area No. 1, and the others are of small occurrences. Samples taken from them returned low values in uranium. The locations are numbered on Map No. 2, and details of the showings are listed below.

CHERRY LAKE AREA - No. 1 LOCATION

The Cherry Lake showings are shown on Map No. 3. They are indicated by number for each of the locations investigated during the summer season of exploration.

ZONE No. 1 and 2

These are one or more areas of medium grained graphic granite that trend north-west, in the form of dykes that have considerable yellow staining. A series of trenches were put down about a foot deep along the zone and original sampling returned traces in U3 08. Later sampling at the bottom of the trenches returned the values as noted on the map. They range from 0.04% to 0.10% U3 08.

ZONE No. 3

This zone is an altered feldspar porphyry dyke, chloritic, that trends north-east and increases in geiger counts toward the lake. Readings average 350 C.P.M. over the showing. Similar material has been found on the lake shore on strike with it, but no work has been done on its extension. It has some weak fracturing, that strikes N 20° E, dips vertically and counter readings are higher along them.

ZONE No. 4

A small area with counts of 130 C.P.M. was blasted into but returned no values on assaying.

ZONE No. 5

A length of about 200 feet of high readings were discovered on the west side of a swamp. The readings average 800 C.P.M. The nearest rock, to the west, has a count of 200 C.P.M. The east edge of the values drops off sharply, and the trend of the zone is about N 10° E. The swamp was blasted into and a local perma-frost condition prevented reaching bed rock with the rock drill.

Samples of the black muck were taken over a length of 150 feet and the assays of six samples from these locations give the following results:

SAMPLE No.	% U_3O_8	% $TH O_2$
33	1.21	Nil
34	1.76	Nil
35	0.25	Nil
36	0.76	Nil
37	0.67	Nil
-	1.40	-

Counter readings drop off between the zone and the rock outcrop to the west.

The zone definitely suggests that a high grade occurrence lies below the swamp.

ZONE No. 6

This zone lies in a fracture on the lake shore at the camp location. It was only a fracture on the rock surface with a few moderate counts when first investigated. Blasting into it found that an altered feldspar porphyry was intruded into the fracture and the porphyry was quite radioactive. A grab sample from the zone assayed 0.20% U_3O_8. Further blasting showed that the zone widened, more porphyry was found and a channel sample returned 0.79% U_3O_8 across 4 ft in the material. Here again most radioactivity was associated with fractures in the porphyry.

To the east of this showing is a weak fracture that trends to the north and a similar fracture can be traced for 2600 feet to the north. The higher counter readings are at the lake shore and are twice background.

ZONE No. 7

About 1000 feet to the west of No. 6 is an area of general yellow staining, some dark red areas that trends to the north-west parallel to the picket line beside it. The rock is graphic granite similar to that at Zone No. 1. No development has been carried out on the zone to date. Counter readings are about twice back ground on the outcrops.

ZONE No. 8

At the south end of Twin Lakes is an area of fracturing in which feldspar porphyry and quartz stringers occur. These are related to a north-west trending fault, related regionally to the Bonny fault on the west side of Andrew Lake. Values in U_3O_8 range from 0.02% to 0.14%. The values have been found over a length of 2000 feet. Insufficient work has been done on the zone to determine the extent of the mineralization.

A similar area of fracturing and counts over four times background has been located 1500 feet to the south. A representative sample of surface material assayed 0.04% U_3O_8. This area also has yet to be investigated thoroughly.

LOCATION 2

At this location a group of radioactive granitic areas are located along the west side of a regional fault. They are similar to those at the north part of Zone No. 1 at Cherry Lake, and should be explored.

LOCATION 3

The showings at Spider Lake occur along or near the contact of sediments and granite. They are discontinuous, 1.0 to 4.0 feet in width and extend from the centre of the point at the northeast end of the lake, through the islands and along the southwest side of the lake. The best readings obtained in the zone was 150 C. P. M. This was a length of feldspar porphyry north west of the small lake south of Spider Lake.

LOCATION 4

A mixture of Tazin sediments and granitic gneiss occurs here with some red feldspathic alteration in places. No distinctive radioactivity has been located here, and the counts are not much above back ground.

LOCATION 5

A wide fault zone, more than 200 feet, is well exposed. It is a strong break, fractures filled with quartz and stained by hematite. No significant radioactive values were found.

LOCATION 6

The showing at the south end of Hutton Lake is in red gneiss, fractured, and one spot had a reading of 150 C.P.M.

LOCATION 7

At this location, red sedimentary gneiss strike

N 30° E, dip vertically, and have counter readings just above background. No definite areas of radioactivity were located.

LOCATION 8

Counter readings of 100-120 C.P.M. were found in red gneiss. It is crossed by numerous quartz stringers, due to proximity to Bonny fault.

LOCATION 9

The showing on the south end of Holmes Lake is in a banded gneiss, possibly Tazin sediments. They strike N 62° E and dip vertical. The radioactive zone is 250 feet long, 8.0 feet wide and is rusty. The average counter reading is 250 C.P.M.

There are also some radioactive pegmatite dykes south of the above zone that have patches up to 1000 C.P.M. A sample from this assayed 0.014% U_3O_8.

DEVELOPMENT

During the season, 7150 feet of picket lines were cut on Area No. 1 at Cherry Lake, 400 feet of trenching in rock, and 78 samples taken. This was done by a crew of four men, for most of the season.

CONCLUSIONS

1. The most important area on the concessions is No. 1 at Cherry Lake. Ore grade in uranium has been obtained in two areas and three others are potential

targets for further exploration.

2. The uranium values are associated with fractures and a feldspar porphyry.

3. Three of the zones are on structures that radiate from the north end of Cherry Lake and there is a possibility that important ore occurrences may be present under the lake.

4. The various zones of mineralization definitely require further explorations.

RECOMMENDATIONS

I recommend that further work be carried out on zones 1, 3, 5, 6 and 8. The showings should be mapped in detail, further rock trenching done, zones traced and sampled.

Diamond drilling should be used to investigate zones 3, 5 and 6, and others as they are outlined by trenching and sampling.

A minimum budget of $50,000. is recommended for the program.

Respectfully submitted,

[redacted]

Edward A. Hart, P. Eng.

Toronto, Ont.
November 3, 1967.

TWIN

LAKES

HOOK

LAKE

CHERRY

LAKE

NO. 1

NO. 2

NO. 3

NO. 4

NO. 5

NO. 6

NO. 7

NO. 8

P. L.

TR.

0.06 TR.

0.05 TR.

0.04

0.05

0.08 / 5.0

0.02 / 5.0

0.14 / 5.0

0.05

0.04

0.02 / 5.0

0.09 / 5.0

0.10 / 5.0

0.04 / 5.0

0.01 / 5.0

0.67

0.76

0.25 1.76

1.21 1.40

0.75 / 4.0

0.20

0.03 / 5.0

0.01 / 5.0

TR. / 5.0

0.04

24° E

FAULT ZONE ———

CHIP CHANNEL 0.09 / 5.0

REPRESENTATIVE SAMPLE . 0.05

ALL VALUES U_3O_8%

E. A. HART [redacted]

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ASSAY PLAN — CHERRY LAKE, ALTA.

NEW SENATOR — ROUYN LIMITED

SCALE 1" : 500'

MAP. NO. 3

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Camsell Lake

Holmes Lake

Giekie Lake

William Smith Lake

9

Split Lakes

8

Hutton Lake

7

6

5

ANDREW LAKE ARM

4

Hieroglyphic Lake

Spider Lake

3

Johnson Lake

1

2

Cherry Lake

N

MAP NO. 2

ALBERTA CONCESSION

New Senator-Rouyn Ltd.

ANDREW LAKE AREA

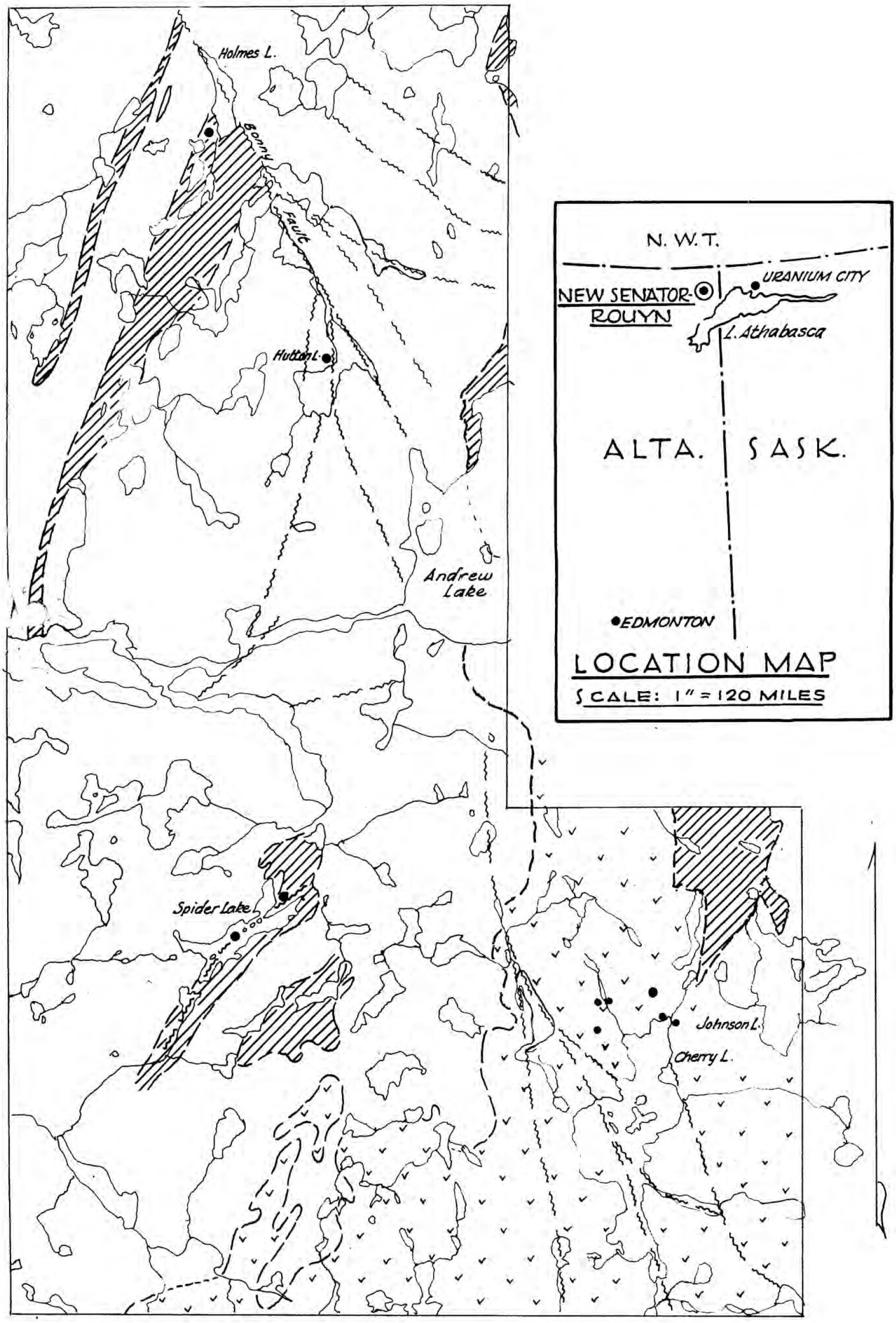
SCALE

2000 1000 500 0 2000 4000

FEET

19670002 Map No. 2

1967.



GENERALIZED GEOLOGICAL PLAN
NEW SENATOR-ROUYN
ALBERTA CONCESSION

SCALE: 1" = 1 MILE

- Granite
- Sediments
- Gneiss
- Radioactive zones
- Faults

Map No. 1.

Based on maps by J. D. Godfrey
Res. C. of Alta. - 58-61-62

E. A. Hart, Oct 31, 1967

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