REPORT ON EXAMINATION OF
CORYELL SYENITES FOR URANIUM

N.T.S. 82E

By

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Vancouver, B.C.
October 2, 1975

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ILLUSTRATIONS:

INTRODUCTION:

High radiometric anomalies in syenites near Dawson, Yukon prompted examination of some of the Coryell intrusions in southern B.C. along with a compilation of known uranium deposits in the area. Scintillometer surveys were done over three small exposures of syenite, one of them near a well known uranium showing in the Beaverdell area.

SUMMARY:

The Coryell syenites show a higher background radio-activity then the enclosing rocks. Scintillometer total counts were of the order 3 times Shuswap gneiss and 1.5-2 times Valhalla granite. The highest counts were obtained in mafic phases of the Shuttleworth Creek syenite stock. Even the highest count rates (25,000 cpm - TV5) were not indicative of economic concentrations of radio-active material. Individual hand specimens have virtually no effect on count rate. Geology of the region and references to known deposits are presented in the text of this report.

CONCLUSION:

The concept that intrusion of the syenites through very old Shuswap rocks might produce high uranium concentrations by chemical migrations during the intrusion has not been substantiated or refuted. No known uranium deposits occur in the syenites but it is interesting that four of the six known occurrences and all of the economically interesting ones are spatially related to syenite stocks. An additional model for formation of these deposits is that of leaching of uranium from the stocks and redeposition in permeable, porous rocks where reducing conditions existed.

RECOMMENDATIONS:

A carborne scintillometer survey in the Kettle River, Boundary Creek and Granby River drainage basins should be undertaken. This would be a regional program with emphasis on areas where syenites outcrop but not limited to those areas. A geochemical orientation could be

undertaken at the start of the program and depending on results stream geochemistry might be employed to augment the scintillometer work.

Cost of the 6-week program is roughly estimated at $15,000.00.

REGIONAL GEOLOGY: (See Map In Pocket)

The oldest rocks in the area are Shuswap gneissic rocks. These are some local names such as the Grank Forks and Monashee groups. All of these rocks are pre-Pennsylvanian, presumably Pre-Cambrian, highly metamorphosed and deformed.
A complex, poorly understood pile of Permian to Jurassic sediments and volcanics unconformably overlie the Shusway "basement". These rocks are given local names such as Mount Roberts, Anarchist, and Rossland groups. Lithologies include greenstone, greywacke, limestone and paragneiss. In many ways these are similar to Cache Creek rocks which outcrop over much of Central B.C. Small bodies of ultrabasic rocks are the oldest of a group of mid-Jurassic to Cretaceous intrusives. Incidentally, these ultrabasics contain appreciable amounts of nickel near Bridesville. The bulk of the map area is underlain by Nelson, Valhalla and Coryell intrusives.

The Nelson is thought to be the oldest of these three units and the Coryell is definitely the youngest cutting an upper Cretaceous conglomerate as well as the Nelson and Valhalla rocks. Nelson rocks vary in composition from granite to diorite but are largely granodiorite. They are distinguished from Valhalla rocks primarily by texture and the presence of smoky quartz and the rarity of hornblende in Valhalla. The Coryell varies widely in composition but generally it is syenitic. The enclosed 1" = 4 miles map shows these rocks colored orange.

Another complex sequence of Cenozoic volcanics and sediments overlies the intrusives which are in turn overlain by Miocene plateau basalts.

In general, the area is structurally complex with all units older than the Miocene folded and faulted. The main north-south valleys are underlain by strong post Nelson shear zones.

MINERAL PROPERTIES:

The enclosed 1" = 4 miles map shows the location of the seven properties described below:

(1) Fuki - Donen

Over 10,000' of diamond drilling has been done on this property by Nissho-Iwai Canada Ltd., the present owner of the claims. Uranium mineralization occurs in Miocene basalt just above the base of this formation and in Phoenix group volcanics. The area explored by drilling is approximately 1,200' x 2,500' with grade varying from 0.02% to 0.70% U_3O_8. No description of the mode of occurrence of the uranium minerals is available. A radiometric survey over the Coryell stock to the south of the Fuki claims gave readings about 2 x background. A sample for geochemical analysis was collected.

(2) Sand, Cup, Lassie

Nothing of interest was found on this property which was located in 1970. However, radiometric surveys were done and three holes totalling 1,206' were diamond drilled as a result.

(3) S.D.

Uranium mineralization (uraninite and uranophane) occurs in quartz-feldspar-mica pegmatite in "Grand Forks" paragneiss. Much promotional activity was generated as a result of the spectacular UV response but the overall grade was apparently low and too scattered to be of interest in 1970 when the deposit was discovered.

(4) Lux

Little is known other than a radiometric survey was done over the property indicating, if nothing else, that some radio-activity was discovered.

(5) P.B.

Anomalous radio-activity was found in sandstone and conglomerate at the base of Plateau basalt. Coryell intrusives underlie the basalt in this area. Eight holes totalling 1,962' were diamond drilled in 1973 by Nissho-Iwai Canada Ltd.

(6) Carmi

This is a Stockwork Molybdenum property with considerable potential. Uranium values up to 1 lb./ton have been reported from core samples over 10' intervals. Apparently, the uranium mineralization is very irregular and sparse.

(7) Lynx

This is a copper property that has been studied in some detail by Selco Exploration. A radio-metric traverse was run from the south end of the Coryell stock up to the showings and then down the centre of the stock as shown on Figure 2. Two samples were corrected for geochemical analysis. Sample A was from the main showing which gave readings up to 2.5 x background in Shuswap (7,000 cpm - TV5) Sample 3 was from a mafic rich phase of the stock which gave readings up to 3 x Shuswap background.

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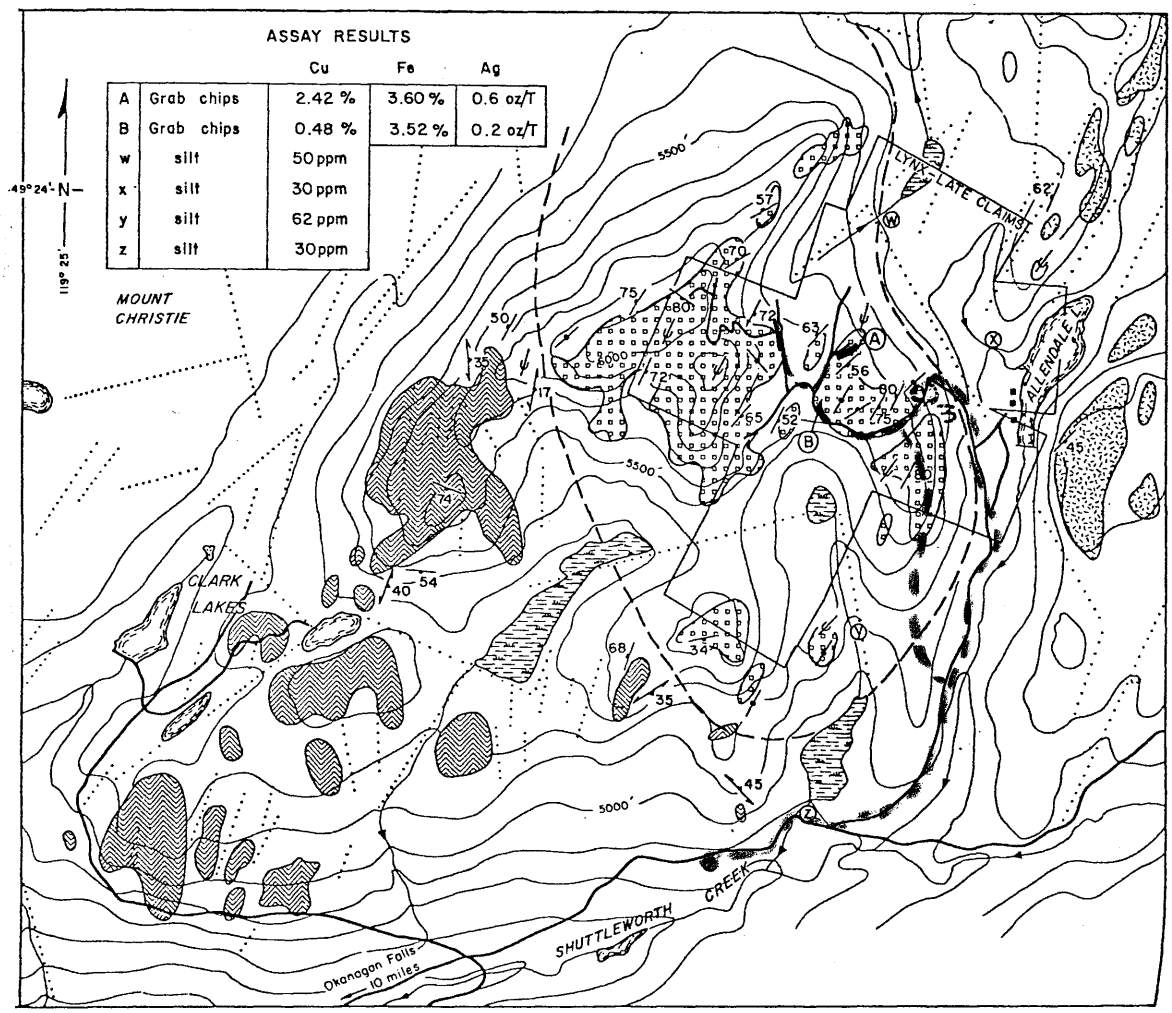

LEGEND

- Coryell syenitic stock (Eocene)
- Granitic batholith (Mesozoic)
- Shuswap Complex
- Gneissosity
- Joint or cleavage attitude
- Geological contact
- Glacial striae
- 5000' Topographic contour
- Topographic lineament
- Stream
- Lake
- Swamp
- Road
- Building

Scale 1/2 1/4 0 1/2 Miles

Scale 1 1/2 0 1 Kilometres

Geology by N. Church
1971

o geochemical sample. (rock).

---- radiometric traverse (TV 5)

FIGURE 1

LYNX-LATE CLAIMS

SHUTTLEWORTH CR.

JWS.

Chevron

Chevron S
Minerals Staf
901 - Marine B

TO

SEND RESULTS TO:
1 COPY TO CH
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SEND INVOICE TO:

To: Jim Simpson - Ken Bright (Bondar-Clegg) phoned in results-Oct. 17/75

From: Isabel

	Mo (ppm)	Uranium (ppm)
Lynx A	2	2
Lynx 3	2	3
Fuki-1	7	3

NATURE OF SAMPLES	NUMBER SAMPLES	SAMPLE TAG NUMBERS	ASSAY SPECIFICATION	REMARKS

direct to S D?
y JWS out of town

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