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CONSULTING GEOLGGISTS  
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Pacific Rim Syndicate No. 1

115 P/13

CLEAR CREEK URANIUM SHOWING

Dawson Mining District  
Yukon Territory

June 20, 1967

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INTRODUCTION

On June 12, 1967, the writer examined the Clear Creek uranium showing, Yukon Territory, in company with Messrs. J.C. Snell, R.F. Newsom, and E. Mueller. This report summarizes the results of that examination.

LOCATION: (63°32' N, 137° 47' E)

The Clear Creek uranium showing is located near the Whitehorse-Dawson highway, 270 miles by road from Whitehorse or 475 miles from the Keno turnoff at Stewart Crossing. A little-used side road, (a former placer operations service road), leaves the Dawson highway near the abandoned community of Barlow. This road is presently passable to 4-wheel drive vehicles. Three miles from the highway, it passes within 1 1/2 miles of the showing.

Access from the side road to the showing on foot is presently difficult because the area is an old burn in small-diameter, mixed coniferous and deciduous trees. However, outcrops are few and slopes into the valley of Clear Creek gentle, so that a "Cat" road to the property could be constructed very inexpensively.

HISTORY:

The presence of above-average radioactivity in certain rocks in the Clear Creek area has been known for a number of years. In 1966, Mr. George Karens carried out detailed prospecting up Clear Creek and staked a large outcropping of radioactive granite.

Lang (G.S.C. Paper 51-10, p. 41), reported the presence of allanite in Clear Creek placer deposits.

## GEOLOGICAL SETTING

The uranium showing is in pegmatitic granite near the western edge of a small granitic stock, about 12 miles in longest dimension, immediately north of the Tintina Trench. The stock, believed to be part of the Mesozoic age Coast Intrusions, is intruded into and completely surrounded by metamorphic rocks of the Yukon group.

### LOCAL GEOLOGY:

The western contact between the granitic stock and the Yukon group metamorphic rocks lies between the placer operations service road previously discussed and the bed of Clear Creek. The central part of the showing, on the northwest bank of Clear Creek, is about 1/2 mile east of the contact.

At the central part of the showing, the outcrops are pegmatitic (porphyritic) granite with phenocrysts of light creamish feldspar two inches or more in length. The matrix to the phenocrysts is composed of finer grained feldspar, 20% dull quartz, and less than 5% mafics, principally mica. The granite is strongly fractured with three more or less mutually perpendicular fracture sets. Occasional steeply dipping shears up to four inches wide are exposed.

The granite is rusty to orangy to faintly yellowish on the weathered surface. It is moderately decomposed and disintegrates readily under hammer blows.

About 2000 feet downstream from the central part of the showing is an outcrop of a similar granite. However, it is light grey rather than rusty in color, is not as strongly weathered, and does not have anomalous radioactivity where examined.

## DISTRIBUTION OF RADIOACTIVITY

In the vicinity of the showing, the granite in place has a fairly consistent level of radioactivity of three to four times background. Individual hand specimens removed from the area for testing have a barely detectable increase in radioactivity above background.

To the northeast, the anomalous radioactive granite disappears under overburden adjacent to a branch of Clear Creek. To the southwest, the radioactivity extends 500 to 600 feet along Clear Creek (downstream) before decreasing to about twice background a short distance from where the granite, there less strongly weathered, becomes completely covered with overburden. Up the hill to the northwest from Clear Creek, outcrops can be traced for an estimated distance of 600 to 700 feet horizontally from the creek. The level of radioactivity appears to decrease in the final northwestern outcrops seen, but the decrease is not marked.

Immediately across Clear Creek on the southeast no outcrops are present. However, it is reported that further back from the creek to the east a second area of anomalous granite but not as radioactive as that in the discovery area is present.

From examinations made, it was not possible to determine the micro distribution of the radioactivity in either its original form or in the presently weathered outcrops. No positive identification of even secondary uranium minerals could be made; however, assays show anomalous quantities of uranium to be present. In addition, the higher level of radioactivity than that detected in the less weathered granite downstream indicates that the radioactivity is not due principally to potassium in feldspar. The virtual lack of thorium as shown by assays makes it improbable that the uranium is present mainly in accessory monazite.

To a minor extent, radioactivity may be concentrated on fractures. This is attributed to secondary deposition, probably of radium, from ground water rather than to primary deposition of uranium on fractures from hydrothermal fluids following complete consolidation of the granite.

It is concluded that the uranium was deposited in localized areas in the granite from late stage magmatic fluids and that it is disseminated in the matrix minerals in unknown mineralogical form.

ASSAYS:

Grab samples taken for assay by others in 1966 returned values in uranium ( $U_3O_8$ ) up to 0.1% and minor values in molybdenum. The one sample which assayed 0.1%  $U_3O_8$  was reported to have been collected from the freshest exposure - the bottom of a 10 foot deep slot blasted in a rock cliff immediately above the creek.

Samples collected by the writer have been sent for assay. When received, the results will be forwarded as a supplement to this report.

CONCLUSIONS & RECOMMENDATIONS:

The area of anomalously radioactive, pegmatitic granite on the west bank of Clear Creek measures at least 500 feet in one direction, 600 feet in the other and is exposed over a vertical height of more than 200 feet above creek level. It is open to the northeast and southeast. These dimensions indicate a tonnage potential of 25,000 tons/vert. foot, or 5 million tons for 200 vert. ft.

Easy access to the Dawson highway, large tonnage open pit mining, and relatively low crushing and acid leaching costs make this deposit, if it exists, amenable to exploitation of low grade material. At \$8. per pound for uranium, rock possibly as low in grade as 0.06%  $U_3O_8$  could be economically exploited, excluding revenue from by-products such as molybdenum.

Final recommendations will await the receipt of assay results. However, because of the tendency for uranium to be leached from outcrops, very little weight can be placed on the assay of surface samples. It is apparent that an adequate assessment of the deposit can only be made by diamond drilling, tunnelling or extensive trenching. Drilling would be the most practical and economical at this stage.

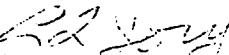
RECOMMENDATIONS:

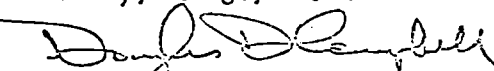
Because of the possibility of the Clear Creek property being a large tonnage, low grade uranium deposit that would be profitable at the anticipated prices for uranium we would recommend that this possibility be investigated by a limited drill program to test grades of unweathered material. For such a test we recommend a minimum program as follows:-

3 EX holes @ 200 ft. each =	600 feet
600 feet @ \$15/ft. =	<u>\$9,000.00</u>

(Note: The cost per foot estimate for drilling is all inclusive for access road construction, assay costs, and field supervision.)

Respectfully submitted,

  
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