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FROM THE
DEPARTMENT OF MINES
PROPERTY FILE
Nelson ~~Victoria~~, B.C., May 21, 1956

WHEN REPLYING PLEASE REFER
TO FILE No.

re Esovoloff's Uranium Prospect

The Lucky Boy claims cover most of the rocky ridge that runs east toward Crescent Valley from Gander Creek. The two showings are close to the axis of the ridge, at about 3,500 and 4,000 feet elevation respectively. Exposure is excellent; about 40 per cent of the crestal part of the ridge is bare rock, and between outcrops overburden is thin.

The greater part of a day was spent studying the rock and testing a considerable area with a Geiger counter. The day was clear and dry and the background count was therefore high, perhaps 60 c.p.m. Areas of low radioactivity may have been missed because they did not noticeably increase the count. With such a large area to test it was not feasible to make actual counts.

Most of the rock in this ridge has pegmatite affinities, but favourable areas appear to be severely restricted. The dominant rock type consists very largely of feldspar, more or less reddened where most exposed to the weather. A large part of this feldspar rock has been more or less sheared, and the shear laminae have been warped, so that grain size is difficult to estimate. Most of the feldspar crystals appear to exceed 1/4 inch. Evidence was seen in several places that the feldspar rock has formed by injection, soaking, and wholesale replacement of metasedimentary rocks. Remnants can be seen in a number of places, containing scattered large (1/4 to 1/2 inch) crystals of feldspar. Near the east end of rock exposures on the ridge the feldspar rock both intrudes and grades into a medium-grained dark rock with large feldspar crystals. The texture of this rock is identical with that seen by the writer many times in the Canadian Shield, where greywacke has been soaked and more or less recrystallized adjacent to granitic intrusives. A remnant of this dark rock occurs along the east side of the lower showing.

Detectable samarskite mineralization appears to be restricted to certain relatively small patches within the feldspar rock. Two such patches have so far been discovered. They are characterized by large chunks of quartz, by local reddening and granulation of the feldspar, and less uniquely by coarse muscovite. Minor quartz is scattered through most of the feldspar rock, but the grains are of pinhead size and are inconspicuous. The quartz chunks are of fist size and larger, they weather in relief, and they are skim-milk white in contrast to the cream, buff, or reddish feldspar. Isolated chunks occur

here and there, but radioactivity was noted only where they are clustered. With a little practice it is possible to distinguish at a glance between reddening of feldspar ~~xxxxxx~~ accompanying samarskite mineralization and the reddening due to surface weathering noted above. The muscovite in the patches is mostly coarse, but coarse muscovite was also noted in a number of places where there is neither mineralization nor chunk quartz.

The two patches referred to are about 1,000 feet apart horizontally. The higher one has had no work done on it, and the shape and dimensions could not be estimated with any accuracy. It would seem to be rather irregular and probably doesnot exceed 50 feet in diameter. The lower patch straddles the lip of a 100-foot step in the ridge, and part of the riser has been blasted into, using hand-steel, to supply all the samples submitted to Victoria and Ottawa. This patch is roughly an obtuse-angled scalene triangle in outline, the long west side striking about 340 degrees and the more acute angle being at the south tip. The maximum length and width are 100 feet and 45 feet respectively. Some of the quartz forms one or two irregular lenses that appear to dip gently west. It is not clear whether the samarskite mineralization also dips into the hillside.

The samarskite is sparingly and irregularly distributed through both patches and a visual estimate of grade is not possible. As noted by Peck, sampling in the ordinary way, as by channeling, would be meaningless and a bulk sample is needed. However, the samarskite probably does not exceed one per cent, therefore the uranium content of the patch is probably less than 0.1 per cent. In part the samarskite occurs as grains and nearly solid chunks as much as 2 inches across, but a larger fraction is disseminated through small patches of the feldspar. The disseminated grains are so small that they are scarcely visible with a pocket lens, but their presence is readily detected by reddening of the feldspar, by radioactivity, and by a marked increase in specific gravity. Minor amounts of samarskite occur also in the quartz and muscovite.

Some testing for fluorescence was done with a Mineralight and tarpaulin, but this method of prospecting does not appear promising. Patches known to contain considerable samarskite failed to fluoresce, whereas isolated grains distant from any such patches fluoresced orange. These grains appear to be part of the rock rather than fracture coatings, and are indistinguishable in ordinary light from the surrounding feldspar. Ragged spots and patches of yellow-green fluorescence appeared on fracture surfaces in quartz, but these also could not be distinguished in ordinary light. They doubtless represent a discontinuous surface film, possibly of a secondary uranium mineral. The total amount of this material is probably a few ounces.

Esovoloff and his partner showed the writer the route they have picked out for a possible road. It is recommended that any application for road assistance could not be considered unless or until assay results on a bulk sample of 1 or 2 tons are available. For bringing out such a sample a pack-horse trail could be cut out fairly readily.

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