

REPORT
ON
EXPLORATION PROGRAM
ON PROPERTY OF
AMCA INDUSTRIES LTD.
LINCOLN COUNTY, NEVADA.

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INTRODUCTION

An initial exploration program consisting of a Gamma Ray Spectrometer survey, radon gas detection survey and geological mapping has been completed on the property held by Amca Industries Ltd. in Lincoln County, Nevada. This program follows Stage I of the writer's recommendations in a report dated Aug. 19, 1977. In addition to the recommendations in that report the radon gas detector survey was used as it has been found that this information is valuable in overburden areas.

The object of this program was to outline targets for Stage II which is to include trenching, sampling and drilling. The following report and accompanying maps describe the results of the program conducted with specific recommendations for Stage II.

PROPERTY

The property is referred to as the Judy claims and is situated in Lincoln County, State of Nevada. It consists of 24 contiguous lode mining claims of approximately 20 acres each, recorded as Judy Nos. 1 to 24 inclusive as shown on the accompanying maps.

GEOLOGY

The uranium deposits found in the southwestern United States are in sedimentary rocks that occupy a good portion of this area. Some uranium has been found in the granitic rocks but these tend to be erratic although the granite is believed to be the source of the uranium.

The property held by Amca Industries Ltd. is within a sedimentary basin surrounded by granite hills of Cretaceous age. The granite forms the basement rocks of the basin on which the younger sediments were deposited. The granite outcrops on the property in several places as shown on Map No. 5.

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In the present program, all outcrops on the property were mapped using the network of lines laid out for the radioactive surveys. This showed the property to be largely underlain by limestone with the exception of the granite intrusions mentioned above. Most of the outcrops consist of a flat-lying dirty grey limestone which overlies a bed of light grey limestone. It is this latter bed that contains the uranium occurrences on the property. Outcrops of this bed are very rare but it is found in some of the pits and visible yellow carnotite is found in streaks in the limestone.

The mapping showed two major areas where the basement granite outcrops which are shown on Map No. 5. The largest outcrop area of granite is in the south corner of the property and it is quite noticeable that the spectrometer survey has outlined anomalous areas of radioactivity around the granite-limestone contact. The contact zone between the sedimentary limestone and the granite basement rock is regarded as the most favorable area for uranium mineralization.

The other area of granite outcrop occurs at the east portion of the property with most of it off the property. The nose of the granite body and several small outcrops of granite are all in the vicinity of the known uranium occurrences on the property. This indicates that the favorable contact of the limestone and the basement granite is probably quite shallow in this area.

SURVEY AND INSTRUMENT DATA

A network of lines was laid out over the property at 200 foot intervals in a northwest direction. Readings were taken along these lines at 50 foot intervals using a model DISA-400 Gamma Ray Spectrometer. The spectrometer has a built-in discriminator which gives net counts per second due to uranium, thorium, potassium and total radiation on different channels. Readings for all elements and total radiation were recorded and the results are plotted on separate maps accompanying this report.

Readings were also taken along the same network of lines using a portable Radon Detector Model RD 200 manufactured by E.D.A. Instruments Inc. This instrument measures the radon gas and it is recorded in counts per minute. Readings were only taken in areas of overburden and at each location a hole was put down with a hand augur to a minimum depth of 20 inches.

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Readings were taken at each location for the background count followed by a measurement at the bottom of the hole. The results have been plotted on the uranium map in counts per minute.

DISCUSSION OF RESULTS

The results of the spectrometer and radon gas surveys combined with the geological mapping are plotted on the following maps.

- Map No. 1 - Spectrometer Survey - Total count
- Map No. 2 - Spectrometer Survey - Potassium count
- Map No. 3 - Spectrometer Survey - Uranium count
and Radon Gas Detector survey
- Map No. 4 - Spectrometer Survey - Thorium count
- Map No. 5 - Composite Map - Geology, Uranium and
Radon gas anomalies.

An examination of Maps 1, 2, 3 and 4 show more or less the same pattern of anomalies but a noticeable feature is the low thorium count. The thorium values are almost entirely confined to the granite with almost negligible counts in the vicinity of the known uranium occurrences. It is thus evident that there is practically no thorium associated with the uranium in the limestone. The potassium count is also quite anomalous in the granite rocks and shows about equivalent counts with the uranium in the limestone. This is normal and we can thus assume that radioactive anomalies in the sedimentary limestone will contain significant values in uranium.

Map No. 1 showing the total count indicates the general trend of the radioactivity on the property. The main zone of radioactivity within which the pits and two drill holes are located appears to trend in an east-west direction. This is referred to as "A" Zone for reference purposes. The anomalous values in radon gas (see Map No. 5) taken in the overburden areas follow this same pattern. This east-west trending area extends from close to the nose of the granite outcrop westwards and follows a wash (dry bed) which may represent a structural feature.

The second area of anomalous radioactivity is in the vicinity of the granite outcrop at the south portion of the property. We know that the radioactivity in the granite is largely due to potassium and thorium but there are significant uranium anomalies in the limestone close to the granite contact. These are shown on

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Map No. 5 and are referred to as zones B, C, D and E for reference purposes. The trend appears to be northeast-southwest and again there are numerous anomalous values in the radon gas count.

Map No. 5 is a composite map showing the geology combined with the uranium anomalies and the anomalous radon gas readings. Uranium counts over 8 c.p.s. are regarded as anomalous and these are all found in outcrop areas. Counts less than this in areas of overburden could also be significant. In the radon gas survey which is more penetrating than the gamma ray spectrometer, count rates greater than 80 c.p.m. are significant. This latter survey detects buried uranium mineralization and thus the combination of the two surveys can indicate the continuity of the uranium-bearing zones. A brief discussion of the main radioactive zones outlined and shown on Map No. 5 follows:

"A" ZONE is a known uranium-bearing zone which gave values of 0.155% U_3O_8 and 0.038% U_3O_8 in the pits shown on the map. Two drill holes put down in this area in earlier exploration (See Map 5) are reported to have intersected 10 feet with estimated values ranging from 1.0% to 2.0% U_3O_8 using radiometric logging. Radon gas counts were taken in these holes and gave values of 33,500 and 21,500 c.p.m. which would tend to corroborate the drill results. In addition a sample was taken in the present program at the collar of hole 2 and this assayed 0.122% U_3O_8 . Three grab samples were also taken from the trench just north of line 6N and these gave assays of 0.029%, 0.051% and 0.235% U_3O_8 . These were taken from the uranium-bearing limestone over a distance of 30 feet. This zone warrants immediate drilling to determine the grade and extent of the mineralization.

"B" ZONE is extremely well located geologically as it is within the limestone-granite contact zone and gave readings up to 26 c.p.s. in uranium count. Immediately northeast there are anomalous values in radon gas of over 100 c.p.m. There has not been any previous work on this zone and it definitely warrants further investigation.

"C" ZONE is also close to the granite and contains some old pits. Two samples taken on this anomaly near line 85 some 100 feet apart gave assays of 0.008 and 0.013% U_3O_8 . Some further investigation is required on this zone.

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"D" ZONE is at the extreme south end of the property where several trenches have been put down by previous operators. The uranium count ranges up to 40 c.p.s. but of particular significance are the anomalous values in the radon gas count. This suggests fairly widespread distribution of the uranium mineralization.

"E" ZONE is again located close to the granite and it is quite possible that B, E and D zones represent one continuous uranium-bearing zone as indicated by the radon gas readings. "E" zone has not had any previous trenching and warrants further investigation.

"F" ZONE represents a previously trenched area to the northwest of "D" zone. It likewise is near the boundary of the property and the uranium and radon gas counts suggest fairly widespread distribution of the uranium. Further investigation is warranted on this zone.

OTHER ZONES

There are several other lower priority zones indicated by both the uranium and radon gas counts and their significance will be determined by the investigation of the first priority targets.

CONCLUSIONS AND RECOMMENDATIONS

The initial exploration program consisting of geological mapping, spectrometer and radon gas surveys has been successful in outlining several uranium-bearing zones that warrant further investigation. The zones are all within the flat-lying limestone and the radon gas survey suggests fairly widespread distribution of the uranium at shallow depths. Initial sampling results suggest the possibility of economic concentrations of uranium which combined with the other results is ample justification to proceed with Stage II of the exploration program.

Prior to the start of Stage II we recommend a further acquisition of ground to the south to protect "D" and "F" zones and to obtain more of the favorable limestone-granite contact in this area. The following specific recommendations are made for Stage II with estimated costs.

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(a) Staking of additional ground	\$5,000.00
(b) Further sampling and possible trenching of "B" and "E" zones	5,000.00
(c) Percussion drilling - 2,000 feet	16,000.00
Contingencies	<u>4,000.00</u>
	<u><u>\$30,000.00</u></u>

Respectively submitted,
PROSPECTING GEOPHYSICS LTD.

H. J. Bergmann, P. Eng.

Montreal, Que.
April 19, 1978.