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# ASSESSMENT REPORT

## UKON JOINT VENTURE

## NEBULOUS PROPERTY

NTS 116B/7

LATITUDE 64°28' NORTH LONGITUDE 138°47' WEST

090708

A.R. Archer, P.Eng.
W.D. Eaton, B.Sc.

December, 1980


This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 5,300.00

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

R. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

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## LIST OF ILLUSTRATIONS

## INTRODUCTION

Exploration by Ukon Joint Venture (UJV) in 1980 included twelve mandays of trenching on the Nebulous property near Dawson. The UJV crew consisting of T. Stokes, C. Bishop, and party chief D. Eaton performed most of the work during the period August 9 to August 13 however incompletion of the work due to bad weather required that D. Eaton return to the property on August 25.

## PROPERTY, LOCATION, ACCESS AND LOGISTICS

The Nebulous property is an elongate block of 33 claims bisecting the Brenner Stock. The claims are recorded in the Dawson Mining District as follows:

| CLAIM NAME | GRANT NUMBER | EXPIRY DATE |
|---|---|---|
| Nebulous 1-15 | YA5089-YA5103 | 23 January, 1981 |
| Nebulous 16-29 | YA5142-YA5155 | 23 January, 1981 |
| Nebulous 30-33 | YA5170-YA5173 | 23 January, 1981 |

The property is located at latitude 64°28' north and longitude 138°37' west within NTS claim sheet 116B/7,56 km (35 miles) northeast of Dawson. The nearest road point is Km 51 on the Dempster Highway, 19 km to the southeast, where the UJV camp was located. Access in 1980 was provided by Bell 47 G3/B2 and Bell 206B helicopters, supplied by Trans North Turbo Air of Whitehorse. A total of 8.5 hours of Bell 47 and 1.3 hours of Bell 206B time were used. Logistical details are outlined below:

August 6: Crew, plus spare driver C. Chalmers, mobilize from Whitehorse to Wolf Creek (km 51 on Dempster Highway) using a 5 ton truck for powder and camp gear and a 3/4 ton van to transport personnel and blasting caps.

August 7: Tent camp set up at Wolf Creek.

August 8: Bell 47 helicopter arrives; helicopter fuel mobilized from Dawson in 5 ton truck.

August 9: C. Chalmers drives 5 ton truck to Whitehorse.
August 9-13: Trenching on Nebulous property.
August 14-15: Low clouds and heavy rain make access to the property impossible.

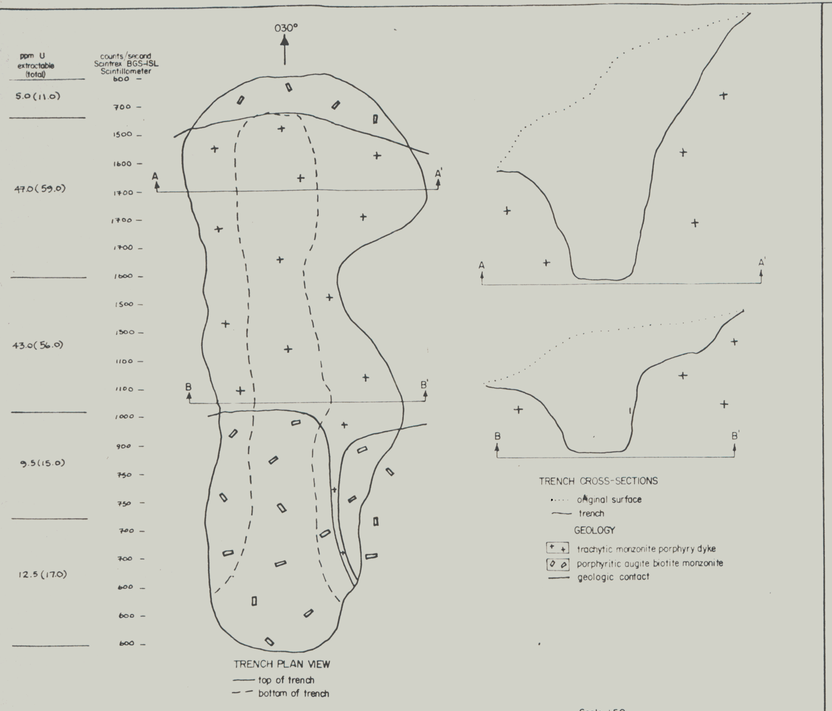
August 16: Crew demobilizes to Whitehorse in 3/4 ton van.

August 25: D. Eaton flies to Dawson on Northward Airlines scheduled flight then to the Nebulous property by helicopter to sample and map trench; returns to Whitehorse on Northward evening flight.

## GEOLOGICAL SETTING

The property is located within the Brenner Stock, a 5 km diameter Middle Cretaceous monzonite intrusion cutting Silurian to Cretaceous shales, quartzites and limestones. The stock has no significant associated faulting and is more erosion resistant than the surrounding sedimentary rocks, resulting in a maze of cirque valleys separated by steep ridges. Valleys are covered by debris from extinct alpine glaciation and their sides are often obsured by coarse talus. Outcrop, while abundant, is mostly on cliffs and is inaccessible.

The Brenner Stock exhibits a crude compositional zoning, grading from aplite at the centre through pink monzonite porphyry, porphyritic hornblende monzonite, monzonite porphyry and finally to augite biotite monzonite at its margins. Metasediment xenoliths ranging from centimetres to tens of metres in diameter are common within the intrusion. Gossanous hornfels have formed along contacts between monzonites and argillites while marbles and skarns have developed where upper Permian Tahkandit Formation limestones contact the stock. The surface geology in the area of interest and a brief description of the units are illustrated on Figure U-NE-5 on the following page. More detail geological descriptions are available in an unpublished UBC thesis, "Geology of the Mount Brenner Stock", by M. Lambert (1963).





GRID RADIOMETRICS AND U, Cu, W, Au GEOCHEMISTRY

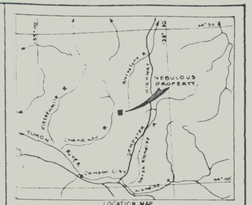
SCALE 1:2000

metres


GEOLOGY & U, Cu, W, Au GEOCHEMISTRY

SCALE 1:12,000

metres




Association of Professional Engineers of Ontario
A. R. ARCHER
GEOLOGICAL ENGINEER

FIGURE U-NE 5

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# GEOLOGY, RADIOMETRICS, U, Cu, W, Au GEOCHEMISTRY

NEBULOUS 1-33 CLAIMS

UKON JOINT VENTURE

## MINERALIZATION

Airborne and surface radiometric surveys have shown that the entire stock is radiometrically anomalous with the strongest response associated with a porphyritic hornblende monzonite phase near its contact with monzonite porphyry. Prospecting has failed to locate specific zones of high grade uranium mineralization although a few areas of weak secondary enrichment have been outlined in monzonite porphyry near the south end of the claims. The best showings, the Main and East Zones, were described in the 1976 and 1977 Final Reports and consist of monzonite porphyry containing uranium in disseminated accessory minerals and yellow oxides coating joints, a specimen of which assayed 1.1% $U_3O_8$ and only 30 ppm Th. In 1977 a trench blasted into bedrock averaged 0.0105% $U_3O_8$ over 10 m including three clusters of mineralized joints which returned 0.026% across 2 cm, 0.052% across 10 cm and 0.048% across 24 cm. Intervening trench samples containing no visible uranium mineralization ranged from 0.007% to 0.012% $U_3O_8$ and averaged 0.0082% $U_3O_8$. Other trenches on the same zone returned slightly lower but comparable results.

Sulphide mineralization is not abundant in the stock. Minor disseminated pyrite and pyrrhotite are the most common, and traces of chalcopyrite, galena, arsenopyrite and molybdenite have been noted both in the intrusion and adjacent metasediments. Skarns along the northwest margin of the stock on Mattagami's Marn claims are reported to contain chalcopyrite, arsenopyrite and scheelite.

## TRENCHING

A total of twelve mandays were required to drill and blast a 10m long hand trench in bedrock across a moderately radioactive monzonite porphyry dyke. Holes were drilled with an Atlas Copco Cobra drill owned by UJV and 40% Forcite was

used for blasting. A total of 1440 cubic feet of bedrock and 20 cubic feet of talus were moved. Figure U-NE-5 illustrates the location and dimensions of the trench along with geological and radiometric mapping and uranium geochemistry. This dyke was trenched because it was well exposed and is representative of other monzonite porphyry dykes which collectively are the source of most radioactive material in the talus. Assaying shows that while the dyke is approximately twice as radioactive as the surrounding augite-biotite-monzonite country rock, it contains five times as much uranium with an average of 57 ppm compared to 11 ppm. The monzonite porphyry consists of approximately 90%, coarse-grained, trachytic to subtrachytic feldspars, principally orthoclase, with medium-to coarse-grained, interstitial hornblende, whereas the augite biotite monzonites contain 85%, slightly coarser-grained, subtrachytic feldspars, predominantly plagioclase, with interstitial mafics. The rocks contain minor disseminated pyrite and exhibit one to three open fractures per metre. The dyke has sharp, but somewhat irregular, contacts.

## CONCLUSIONS AND RECOMMENDATIONS

Trenching indicates that the monzonite porphyry at the north end of the property exhibits background uranium values slightly lower but comparable to values previously obtained from the south end of the property. Further work should consist of at least one drill hole to explore uranium mineralization in the monzonite porphyry beneath the Main Zone.

Respectfully submitted,

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