PAUL S. WHITE & ASSOCIATES
P.O. BOX 4550
WHITEHORSE, YUKON Y1A 2R 8

WHITEHORSE OFFICE
Mile 922, Alaska Highway
(403) 633-2235

ROSS RIVER OFFICE
Lot 95, Ross River
(403) 969 0030

GEOPHYSICAL SURVEY REPORT OF SURVEY OF PORTIONS OF RIN 1-24, KID 1-18, RIOX 1-30 and MS1-12 M.C.

LOCATED IN MAYO MINING DISTRICT

QUARTET LAKES AREA

LAT. 64° 10' N. Long. 134° 28' W

YUKON TERRITORY

TABLE OF CONTENTS

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 $ 450.00.

D B Craig

Resident Geologist or
~~Resident Mining Engineer~~

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

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

PAUL S. WHITE & ASSOCIATES
P.O. BOX 4550
WHITEHORSE, YUKON Y1A 2R 8

June 12, 1977

WHITEHORSE OFFICE
Mile 922, Alaska Highway
(403) 633-2235

ROSS RIVER OFFICE
Lot 95, Ross River
(403) 969 0030

Geophyisical Survey Report on Rin 1-24 (YA 14799-YA 14822 incl.)
Kid 1-18 (YA 1881-1898 incl.)
Riox 1-30 (YA 1851-YA1880 incl.)
MS 1-12 (YA 1899-YA 1910 incl.)
Mineral Claims.

INTRODUCTION: At the request of R.W. Termuende, President of Rio Alto Exploration Ltd., Paul S. White P. Eng., has conducted a reconnaissance geophyisical survey over a portion of the subject claim groups for the purposes of conducting preliminary exploration on said claims and to perform such representation work as must be performed under the provisions of the Yukon Quartz Mining Act.

LOCATION AND ACCESS:

The property is located on N.T.S. map sheets Nos. 1o6-E-1 and 106-E-2 in the Quartet Lakes area of the Mayo Mining District in the Yukon Territory at Latitude 65° 10' N., Longitude 134° 28' W., approximately 120 miles NNE of Mayo Y.T. and is accessible only by fixed wing or rotary aircraft.

GEOLOGY: The geology of the district is mapped as Ho sequence lower Helikian age (or Aphebian) overlain unconformably by orange weathering algal carbonates of probable Helikan age by the Geological Survey of Canada. A preliminary geological evaluation of the subject property was made in April 1976 by R.K. Netolitzky, M.Sc., P. Geol. (Alta.) and the report is included as Appendix 2 to this report for information.

DATA AND EQUIPMENT:

The geophysical survey was performed over a portion of the subject group by Paul S. White P. Eng., and D. White, Helper, between the dates of August 27-31, and September 21-24, 1976, as shown on report map contained herein as Appendix 1. The survey control was the claim location lines which were partially cut

PAUL S. WHITE & ASSOCIATES
P.O. BOX 4550
WHITEHORSE, YUKON Y1A 2R 8

WHITEHORSE OFFICE
Mile 922, Alaska Highway
(403) 633-2235

ROSS RIVER OFFICE
Lot 95, Ross River
(403) 969 0030

Geophysical Survey (Cont.)

out to facilitate the survey. The equipment used in the survey was a hand-held SRAT SPP2 NF scintillometer and a 20 cup 7D Track Etch cup placement program analyzed after retreival for radon impingement by the Terradex Corporation of Walnut Creek California. The claim posts were located by search, the scintillometer readings taken as the posts were located in cycles per second on the 150f scale with a background avereage of 25-30 c.p.s., and the cups placed in an inverted position approximately 2½ feet below ground surface in permafrost silt by digging holes manually with posthole tool, pick and shovel.

The cups were retrieved 3 weeks plus after placement and forwarded to Terradex Corp. for assay.

The program was experimental in part and the engineer elected to try the 20 cup program over a specific low topography, silt and sandy gravel area to obtain sufficient data to warrant and justify more extensive exploration in 1977.

The results of the scintillometer readings and the cup assays (in lines-tracks per sq. mm.) were plotted on Map 1 (Appendix 1). The Scintillometer results were generally not encouraging but a significant radon (radioactive) anomaly was located in the area covered by RIOX 9 & 10 and RIN 5,6,7,8,9 and 10. The cups and readings were so widely spaced on this reconnaissance program that no attempt at contouring was made; the readings themselves being indication enough of the anomaly.

Interpretation:

The high track etch readings in the vicinity of the RIOX 9 and 10, and the RIN 5,6,7,8,9 and 10 mineral claims are considered to be indicative of a radioactive anomaly at some unknown depth which is worthy of further detailed survey and examination. The scintillometer readings were considered to be less than satisfactory due to possible depth of overburden in the low lying area surveyed.

RECOMMENDATIONS: It is herewith recommended that a detailed track etch cup placement program be taken in 1977 over the anomalous claims and that widely spaced cup placement and scintillometer surveying be done in 1977 over the balance of the claims in the subject 4 blocks.

Respectively submitted,

Paul S. White P. Eng., D.L.S.

APPENDIX I.

GEOPHYSICAL SURVEY OF RIN, KID, RIOX & MS M.C.s

SHEETS 106E1 & E2

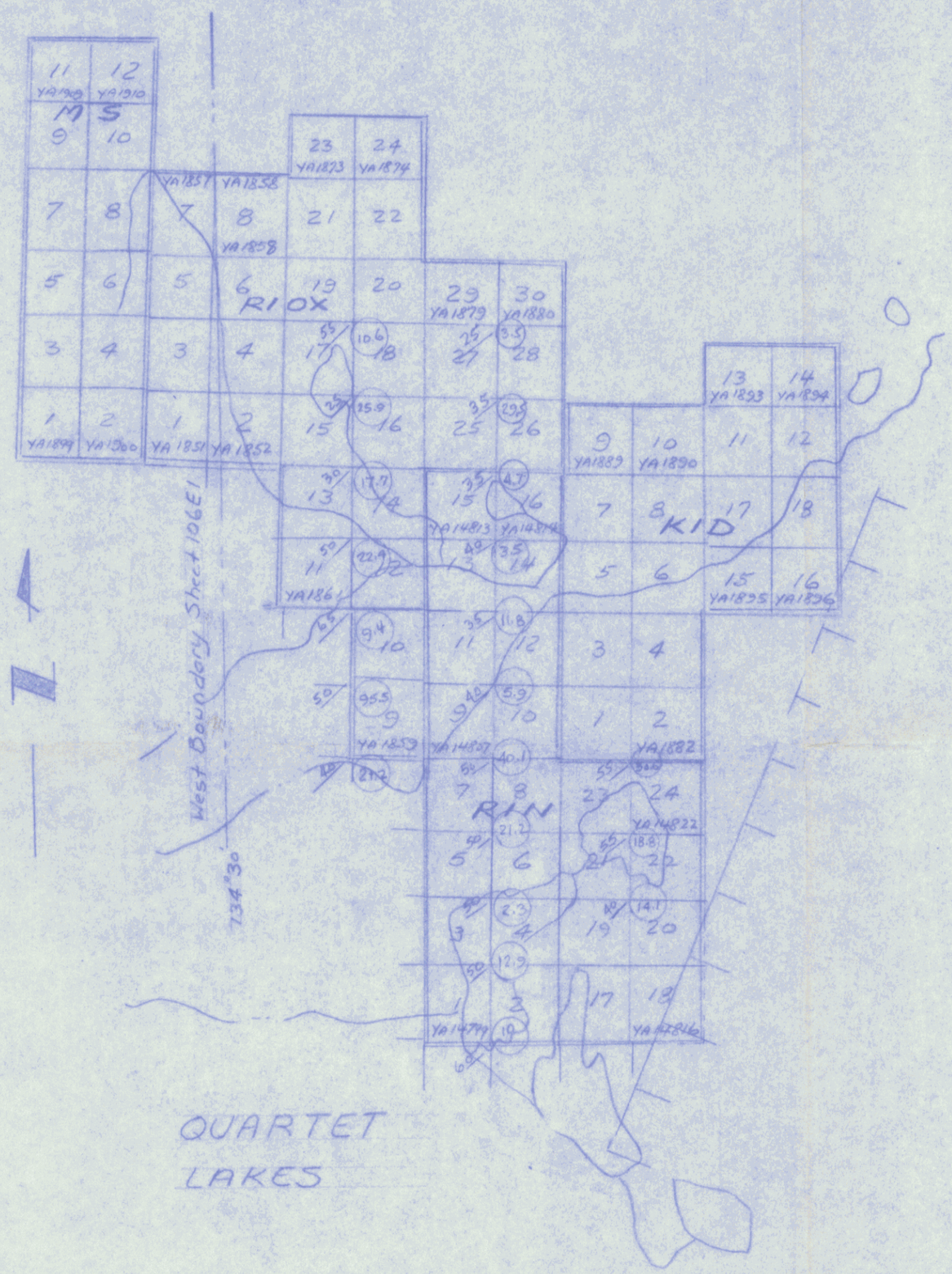
MAYO MINING DISTRICT
QUARTET LAKES AREA
AUGUST 27-31 1976 Inclusive &
SEPTEMBER 21-24 inclusive
by

PAUL S. WHITE P.ENG.

LEGEND: READINGS
SRAT SCINTILLOMETER
TRACK ETCH CUPS

40 (EPS)
(14.1) Tracks per sq. mm

SCALE: 1 inch = ½ mile



June 17, 1977
PSW.

APPENDIX 2.

EVALUATION OF QUARTET LAKE PROPERTY

OF RIO ALTO EXPLORATION LTD.

INTRODUCTION:

At the request of R.W. Termuende, President of Rio Alto Exploration Ltd., Taiga Consultants Ltd. has conducted a brief evaluation of the company's Quartet Lake properties. Published data on the region is limited to preliminary and open file reports of the Geological Survey of Canada.

Subsequent to the release of a preliminary report by S.L. Blussom in G.S.C. Paper 76 - 1A (pg 131 - 132) considerable staking activity has taken place in the region. An unpublished report by P.S. White (1976) indicates that a syndicate which includes Chevron Standard and Aquitaine have been exploring for uranium in the district since 1974. This activity has included staking of claims and conducting an airborne radiometric survey.

Uranium-copper mineralization associated with fracture zones within volcanoclastic rocks that are either early Helikian of Aphebian in age appears to be the prime target.

PROPERTY

The property consists of the KID, RIOX and MS claim groups which total of 60 claims. The claim groups are recorded as:

KID	18 claims	YA1881 to YA1898 inclusive
RIOX	30 claims	YA1851 to YA1880 inclusive
MS	12 claims	YA1899 to YA1910 inclusive

LOCATION AND ACCESS

The property is located within the N.T.S. designation of 106 - E - 1 and 2;within the Bonnet Plume River region of the Yukon. The center of the property is at approximately 65^{O} 10' north and 134^{O} 30' west.

Access to the property is either by aircraft to Quartet Lakes or by helicopter. The property is approximately 115 miles north of Mayo and 180 miles northeast of Dawson. The all weather road to Keno is approximately 90 miles south of the property.

REGIONAL GEOLOGY

The oldest rocks within the region consist of dark argillite, slate and phyllite with felsic volcanoclastic calc-silicate horizons present in the lower portion of the sequence. Mapping within the vicinity of the property has not subdivided the rocks and they are all included within one unit (Ho). To the southeast L.H. Green (1972) has recognized a probable lower sequence which contains calc-silicate rocks and biotite hornfels. To the northwest, S.L. Blussom (1974) has recognized the presence of lowermost member that contains a calc-silicate volcanoclastic assemblage.

Unconformably overlying these rocks, which are either lower Helikian or Aphebian in age, is an assemblage of orange weathering algal carbonates of probable Helikian age.

The only other deposits within the immediate area consist of glacial, glacio-fluvial and fluvial deposits of Pleistocene to recent age.

ECONOMIC GEOLOGY

Fracture and vein related copper occurrences are present within the Helikain phyllitic argillite unit. These have been located and explored over a considerable length of time. However, poor access and restricted tonnage potential has kept exploration to a minimum. The possibility of associated uranium mineralization was not public knowledge until the release of Paper 76-1A this year.

Two specimens of tuffaceous rocks associated with copper deposits were found to contain anomalous uranium. The location of these samples are 65° 04' 20" N, 134° 14' 40" W (8 miles southeast of the property) and 65° 02' 40" N, 134° 38' 20" W (8 miles southwest of the property). The uranium and copper occurs within fractures in calc-silicate units.

The age and type of mineralization suggests affinity with well known occurrences in the shield areas of Canada.

The property location and ~~geological setting~~ is given on map 1. The geology is comparable to that previously described occurrences glacial and fluvial deposits may mask the favourable geology to a certain degree. However, radon exploration methods are sufficiently advanced to effectively explore shallow drift covered areas.

Insufficient data are available to further evaluate the potential of the property. The presence of fault or fracture related zones within volcanoclastic calc-silicate horizons appears important in the location of uranium-copper mineralization.

Respectfully submitted

Ronald K. Netolitzky, M.Sc. P. Geol

April 26, 1976.

Ho

Qff

MS

RIOX

KID

Qmm

Ho

Ho

Ho

QUARTET LAKES

Qff

3000

2000

5000

4000

MAG. NORTH

Ho UNAMED PHYLLITIC ARGILLITES

Qmm HUMMOCKY OR RIDGED MORAINE

Qff FLUVITILE DEPOSITS

SCALE 1/2 MILE TO 1 INCH

RIO ALTO EXPLORATION LTD.

QUARTET LAKES PROPERTY

106 - E - 1 & 2, YUKON

SOURCE: NORRIS, D.K. (1975) G.S.C. OPEN FILE NO. 279

CLAIM MAPS