



K 115I06/099
VOL 1 UNC
Yukon Revenue Mines Ltd.

1965/06/01 1965/06/01

27160

REPORT ON REVENUE CREEK PROPERTY
by
MACDONALD CONSULTANTS LTD.
December 4, 1969
00029 115-I-6

MACDONALD CONSULTANTS LTD

2 4 2 5 H O W E S T R E E T V A N C O U V E R I B C .

012154

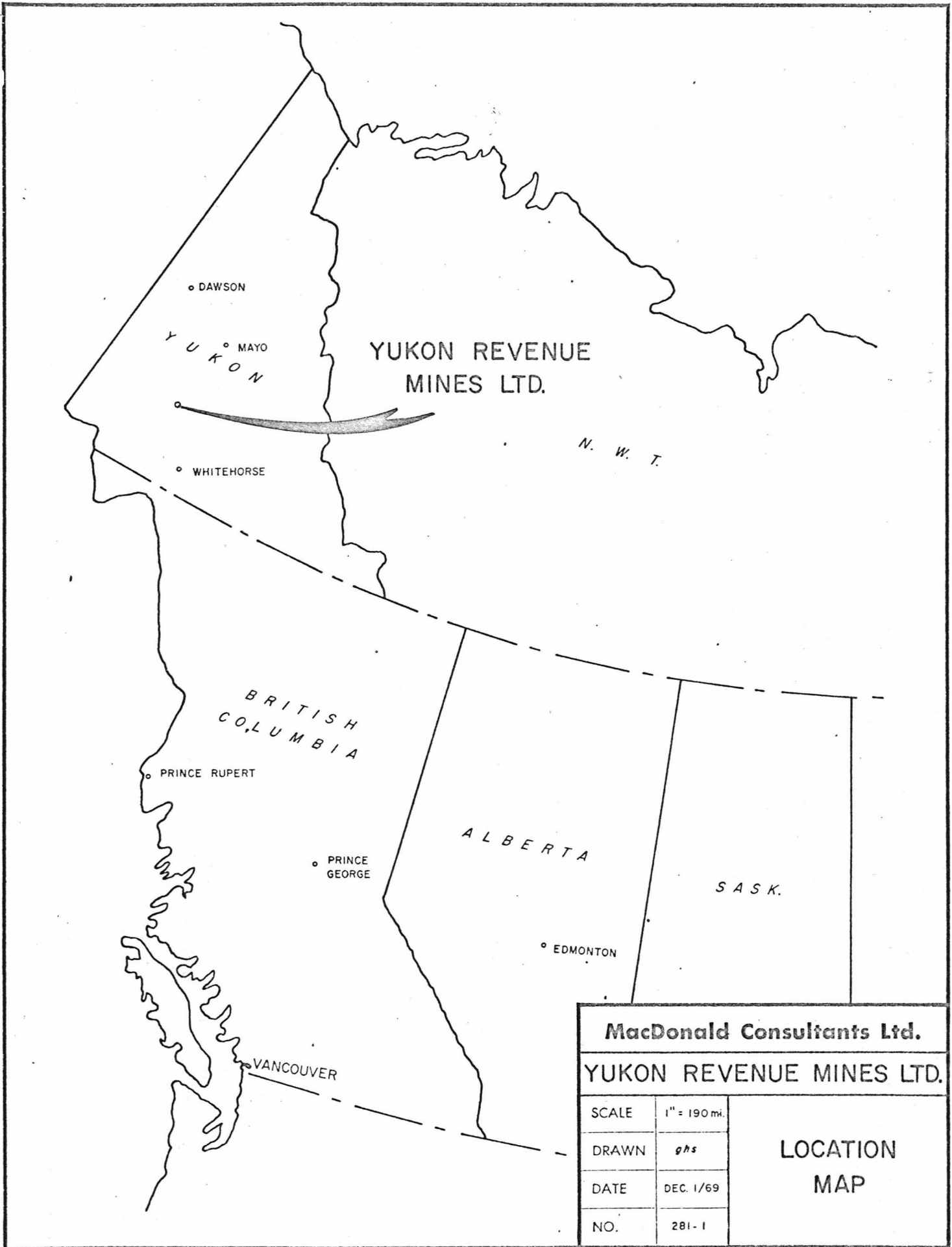
Report
on the
Revenue Creek Property
Carmacks, Y. T.
of
Yukon Revenue Mines Ltd.
by
MacDonald Consultants Ltd.
E. D. Dodson, P. Eng.
December 4, 1969

TABLE OF CONTENTS

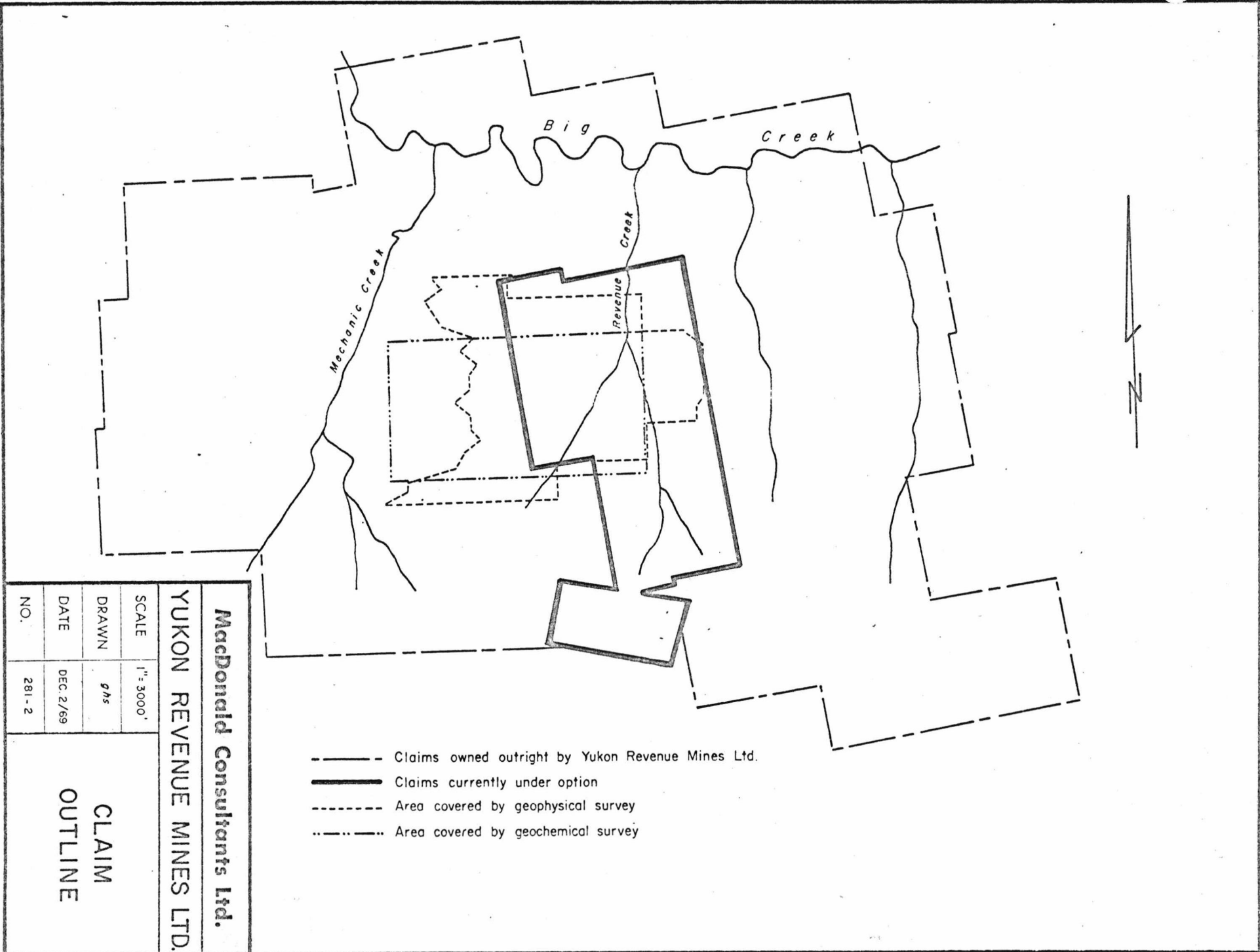
	<u>Page</u>
Introduction	1
Property	3
History	4
Location and Access	5
Summary and Recommendations	5
Summary of Costs	6
Geochemistry	6
Geophysics	7
Geology	7
a.) Regional	7
b.) Local	7
Economic Geology	8
Conclusions	11
Recommendations	12

MAPS

- 281-1 Location Map
- 281-2 Claim Outline
- 281-3 Geology



MacDonald Consultants Ltd.		LOCATION MAP
YUKON REVENUE MINES LTD.		
SCALE	1" = 190 mi.	
DRAWN	<i>ghs</i>	
DATE	DEC. 1/69	
NO.	281-1	



- Claims owned outright by Yukon Revenue Mines Ltd.
- Claims currently under option
- Area covered by geophysical survey
- Area covered by geochemical survey

MacDonald Consultants Ltd.	
YUKON REVENUE MINES LTD.	
SCALE	1" = 3000'
DRAWN	ghs
DATE	DEC. 2/69
NO.	281-2
CLAIM OUTLINE	

INTRODUCTION

The writer has not visited the property described herein. He is, however, familiar with the district. For the purposes of this report he was supplied with the following sources of information:

1. Geological Report on the Yukon Revenue Property
Carmacks, Y. T.
January 10, 1969
by D. D. Campbell, P. Eng. of
Dolmage-Campbell & Associates Ltd.
(Figure 3 missing) ✓
2. Report on Induced Polarization Survey ✓
Carmacks Area, Yukon
on behalf of Yukon Revenue Mines Ltd.
October 31, 1968
by Jon G. Baird, P. Eng.
of
Scigel Associates Ltd.
3. Geological Map - Revenue Creek Area ✓
1" = 400'
R. A. Granger, 1969 (undated)
(the above map is reproduced herewith
as Figure 281-3)

4. Geological, Geochemical and Geophysical Results and

Proposed Drilling Program

1" = 400'

December 18, 1968

Dolmage-Campbell & Associates Ltd.

LLN

5. Generalized Zoning Sketch

(Geological Map)

1" = 3000' (undated)

by R. A. Granger

6. Geochemical Map - Revenue Creek Area

1" = 400' (undated)

by R. A. Granger

1

7. Various property and claim group location maps.

by R. A. Granger

(Note: R. A. Granger is a graduate of Haileybury School of Mines,
currently employed by General Enterprises Ltd., Whitehorse, Y. T.)

The writer has studied the above data. He has also studied or had cause
to refer to the following Geological Survey of Canada Reports:

Memoir 189, Carmacks District, Yukon, 1936, by H. S. Bostock

Memoir 214, Geology and Mineral Deposits of Freegold Mountain, Carmacks
District, Yukon, 1937, by J. R. Johnston

Paper 66-31, The Mineral Industry of Yukon Territory and Southwestern
District of Mackenzie, 1965, by L. H. Green.

Paper 68-34, Glacial Limits and Flow Patterns, Yukon Territory, South of 65 Degrees North Latitude, by O. L. Hughes, R. B. Campbell, J. E. Muller and J. O. Wheeler

Paper 68-68, The Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1967, by D. C. Findlay

PROPERTY

The Yukon Revenue Property consists of 122 contiguous mineral claims. One hundred and seven claims are held outright by Yukon Revenue Mines Ltd., the remaining fifteen are held under option agreement from Mr. P. F. Guder.

The outline of the claim block is shown in figure 281-2. The claims are listed below.

CLAIMS HELD OUTRIGHT BY YUKON REVENUE MINES:

		<u>No. of Claims</u>
INCA 1 - 8 incl.	Y21008 to Y21015	8
Revenue 9 - 12 incl.	Y21270 to Y21273	4
Revenue 13 - 28 incl.	Y24017 to Y24032	16
Rev 2 - 8 incl.	Y25912 to Y25918	7
Rev 1 and 25	Y25955 and Y25956	2
Rev 9 - 16 incl.	Y25957 to Y25964	8
Rev 17 - 24 incl.	Y25965 to Y25972	8
Revenue 3 and 4	Y26361 and Y26362	2
Revenue 1 and 2	Y26363 and Y26364	2
Revenue 5 and 6	Y26365 and Y26366	2
Add 1 - 4 incl.	Y26367 to Y26370	4
Add 5 - 18 incl.	Y26371 to Y26384	14
Revenue 7 and 8	Y26404 and Y26405	2
Add 19 - 46 incl.	Y26406 to Y26433	<u>28</u>
	Sub-Total:	<u>107</u> claims

CLAIMS UNDER OPTION FROM MR. P. F. GUDER:

		<u>No. of Claims</u>
Revenue Copper 1 - 8 incl.	67180 to 67187	8
Addition 1 and 2	68060 and 68061	2
Addition 3 and 4	74488 and 74489	2
Homestake 1 and 2	75321 and 75322	2
Addition 5	75323	<u>1</u>
	Sub-Total:	<u>15</u> claims
	Total Claims	<u>122</u> claims

HISTORY

"Copper was originally discovered in the early 1950s by prospector P. F. Guder on the east bank of Revenue Creek about a mile from its junction with Big Creek and about 5 miles northwest of Freegold Mountain. A short prospect adit was driven beneath the original showing by Guder at this time. In 1954 and 1955 Teck Exploration Company Limited carried out ground electromagnetic surveys over the property and did a total of 1,401 feet of diamond drilling (5 holes) on and near the original showing as well as 341 feet (2 holes) on a second showing 6,500 feet to the southwest. Following this work the property reverted to Guder until 1964 when it was optioned to Canex Aerial Exploration Limited which did limited diamond drilling (3 holes totalling 542 feet) in 1965, based on the results of a geochemical survey. Mineralization intersected was not encouraging and the option was terminated.

During the winter of 1966 - 67 G. Heitman and F. Whitehead obtained a working option on the property from Guder and carried out a limited amount of open-cutting near the old prospect adit. Results were disappointing

and the operation was terminated in February 1967. Later in 1967 General Enterprises Limited, Whitehorse, optioned 15 claims from Guder and constructed a new access road from Seymour Creek to the property, a distance of about 8 miles. Some bulldozer trenching was carried out late in the 1967 season and further work is planned for 1968."¹

During 1968 some bulldozer trenching was done. In October of that year an Induced Polarization Survey was completed over portions of the ground and limited diamond drilling was performed.

LOCATION AND ACCESS

The property of Yukon Revenue Mines Ltd. is located on Revenue Creek a north flowing tributary of Big Creek. The claim group lies approximately 120 miles north of Whitehorse, Y. T. and approximately 35 miles northwesterly from Carmacks, Y. T. on the east flank of the Dawson Range. The property occupies a portion of the south side of the Big Creek Valley.

Access is via approximately forty miles of all-weather road to the Discovery Mines Ltd. property on Seymour Creek and thence by five miles of four-wheel drive road. An air-strip has been cleared on the north side of the property in the Big Creek Valley bottom.

SUMMARY & RECOMMENDATIONS

The Yukon Revenue Property consists of 122 located mineral claims. The property is situated in the Carmacks district, has good road access to within five miles and can be reached by four-wheel drive vehicle.

-
1. Paper 68-68, The Mineral Industry of Yukon Territory and Southwestern District of Mackenzie, 1967, by D. C. Findlay.

The rocks underlying the property are primarily intrusive. The key features are a breccia pipe (?) and a variety of rock types mapped as granodiorite, quartz-diorite, quartz monzonite, aplite and porphyry. Superimposed on these rocks is an, as yet, poorly understood alteration pattern.

Mineralization is of two types:

The first, high grade chalcopyrite veins within the breccia,

The second, disseminated chalcopyrite in the adjoining intrusives.

The purpose of the current recommendations is to attempt to define any potential porphyry-copper zone within the above assemblage.

SUMMARY OF COSTS

Trenching	\$ 13,500.00
Geochemical Survey	8,500.00
Geological Survey	5,700.00
Diamond Drilling 9,200 feet (BQ) @ \$18/foot	165,600.00
Engineering & Assays	7,500.00
Supervision, Transportation & Camp Costs	12,000.00
Management and Consulting Charges	5,500.00
Contingencies	<u>20,000.00</u>
	<u>\$238,300.00</u>

GEOCHEMISTRY

A soil and silt sampling program was carried out on a portion of the ground by Asbestos Corporation in 1959. The writer is in possession of an unsigned, unidentified map which may be derived from this survey. The map

shows values ranging from 20 ppm to 1,800 ppm copper. Four distinct copper anomalies emerge but it also becomes apparent that almost the entire area is copper rich and that the anomalies extend beyond the area tested.

GEOPHYSICS

An Induced Polarization Survey was undertaken by Seigel Associates in 1968 (for area covered see Figure 281-2). A three electrode array with 400 foot electrode spacing was employed for reconnaissance work. The spacing was varied in areas of interest. The 400 foot spacing would be expected to give a depth penetration of 200 to 300 feet dependant upon conditions.

In view of the likelihood of deep leaching and pervasive pyritization I. P. results are of questionable value and extremely difficult to interpret.

The work done to date should be correlated with the geological features. It may eventually be possible to establish the most favourable range of I.P. values and to utilize the I. P. to determine the position of drill holes once the correct environment is located.

GEOLOGY

a.) Regional

The property lies within the Carmacks map sheet (Geological Survey of Canada Memoir 189, Carmacks District, Yukon by H. S. Bostock, includes map 340A). The Dawson Range and the east flank thereof is characterized by a northwesterly trending belt of abundant Tertiary intrusives. These young intrusives cut both older intrusives and sedimentary and volcanic rocks of Precambrian (?) to Cenozoic age.

b.) Local

The property, like other unglaciated and lightly glaciated areas of the Yukon, is mantled by an extensive layer of residual overburden. Outcrop is rare and is generally confined to ridges and local stream canyons. Depth to bedrock is generally from five to twenty feet.

The property is underlain by a complex of intrusive rocks. The most prevalent rock type is a medium grained granodiorite which varies from massive to highly foliated. Drill core from the granodiorite in the vicinity of Revenue Creek is reported to be "pervasively altered to a rusty pale greenish grey rock by chloritization and limonitization of the hornblende and plagioclase as well as kaolinization of the feldspars to form a softer, paler rock than the typical granodiorite."²

The granodiorite is cut by intrusive (?) breccia, aplite and porphyry believed to be of Tertiary Age. On the north side of the breccia Granger (Figure 281-3) has mapped the rocks as quartz monzonite.

Because of the relative lack of outcrop, determination of geological relationships is extremely difficult. To complicate the process many of the rocks have been both hydrothermally altered and leached by the weathering process. Due to the extensive weathering it is also difficult to determine the former intensity and extent of sulphide mineralization at the surface.

ECONOMIC GEOLOGY

The Dawson Range with its abundance of late porphyritic intrusives has come to public attention primarily through recent announcements by Casino

-
2. Geological Report on the Yukon Revenue Property, Carmacks, Y. T.,
January 10, 1969, by D. D. Campbell, P. Eng. of Dolmage-Campbell & Associates
Ltd.

Silver Mines Ltd. Latest estimates of grade and tonnage of the copper deposit being explored there give a potential tonnage of 300,000,000 tons plus at a grade in excess of 0.4% copper equivalent.

The Casino deposit is one of several deposits undergoing exploration for copper and molybdenum within this area. Several major companies have acquired ground in a belt approximately 75 miles long extending from somewhat southeast of Yukon Revenue to northwest of Casino Silver Mines. The prime purpose of this activity is to explore for porphyry copper deposits and stockwork-type molybdenum deposits.

Since the writing of Campbell's report it has become apparent that mineralized porphyry bodies of the unglaciated or lightly glaciated portions of the Yukon Plateau and the Dawson Range may be expected to show leached outcrops. Where conditions are favourable these may be underlain at some depth by secondarily enriched chalcocite 'blankets' and successively by primary sulphides. This has been successfully demonstrated to be the case at the Casino property. Diamond drilling at Casino has shown as much as 450 feet of leaching with 200 feet an approximate average figure. Good secondary and primary sulphides occur below this level.

Both the Yukon Revenue and the Casino property exhibit characteristics of the classic 'porphyry' deposit. These include diversity of intrusive rock-types, breccias, zonal alteration and extensive pyritization.

Campbell describes elements of the geology of the Yukon Revenue in some detail in his report. However, his work is confined to the immediate vicinity of the breccia zone and he mentions only two distinct rock units; the breccia

itself and the adjoining granodiorite. Granger in his map (Figure 281-3)

shows the presence of at least five rock units:

- 1.) granodiorite
- 2.) breccia
- 3.) quartz-diorite (a phase of the granodiorite?)
- 4.) quartz monzonite
- 5.) a unit variously labelled porphyry, felsite and aplite

In addition the map differentiates between a bleached and a leached zone.

At Casino a similar situation exists. The rock types recognized are:

- 1.) granodiorite (a feldspar porphyry phase)
- 2.) breccia
- 3.) quartz monzonite (quartz porphyry phase)
- 4.) aplite phase

Superimposed on the above rocks at Casino are various forms of alteration and weathering referred to as:

- 1.) bleaching
- 2.) biotite alteration
- 3.) tourmaline zone
- 4.) quartz-sericite-jarosite alteration

Direct comparisons between the individual zones is not yet possible but both showings may be described as composite intrusive centers associated with explosive breccias of presumed Tertiary age and mineralized with pyrite and chalcopyrite. Both show evidence of hydrothermal alteration and surface weathering and neither appears to have suffered severe glaciation.

Both properties have been known for many years but only in the past three years has Casino been recognized as a potential porphyry copper deposit.

The known deposits of the Yukon Revenue property are of two types as described by Campbell (1) within the breccia pipe as high-grade chalcoppyrite-rich veins of apparently limited extent, and (2) as sulphide disseminations in the granodiorite surrounding the breccia pipe where possibilities exist for the occurrence of large tonnages of relatively low-grade copper ore of the porphyry copper type."

The most significant of the above two types of mineralization in today's context is the 'porphyry copper' type. Campbell saw disseminated mineralization occurring in the granodiorite and in the explosive breccia. Both of these rock types extend beyond the mapped areas. A unit mapped by Granger as quartz monzonite appears to continue in an altered and leached form to the north for at least 1,200 feet from the breccia.

To the west of the breccia there is a rock unit labelled variously porphyry, felsite and aplite. This is a porous, altered (bleached) fine grained siliceous rock which shows some evidence of mineralization.

Drilling by Teck Corporation in 1952 in the area of the breccia gave very poor core recovery but four of the five holes are recorded as showing "disseminated chalcoppyrite and coarse brecciation."³

Recent drilling by Yukon Revenue in the same area showed some massive sulphide mineralization and very low core recovery.

CONCLUSIONS

The Yukon Revenue property is underlain by an intrusive complex. This

3. Geological Report on the Yukon Revenue Property, Carmacks, Y. T., January 10, 1969, by D. D. Campbell, P. Eng. of Dolmage-Campbell & Associates Ltd., p. 8.

complex contains a core (?) of explosive breccia, has undergone hydrothermal alteration and mineralization and is at least partially leached at the surface. It bears a pronounced geological resemblance to porphyry coppers in general and to the Casino property in particular.

In view of the extensive alteration and surface leaching any one of the rock units might serve as host to important disseminated mineralization.

Portions of the property have been tested to date but a complete geological picture must be developed to guide future exploration.

RECOMMENDATIONS

The writer recommends the following work on the Yukon Revenue property:

Trenching

Caterpillar trenching is required to establish the depth to bedrock, type of bedrock and geochemical profile.

Geochemical Survey

The writer recommends extension of the geochemical soil sampling to cover an area approximately 7,500 feet square. Line spacing, to conform with the existing lines, should be 300 feet. At 300 foot spacing and 200 foot sample interval this survey requires 37 miles of line and about 960 samples. All samples will be analysed for copper and molybdenum.

It may be possible to avoid cutting or to remark existing lines and to correlate with the existing soil sample grid but this will have to be determined by resampling portions of the grid.

To aid in interpretation of the geochemistry, geochemical profiles will be taken in various trenches to relate surface values to bedrock. For this purpose a further allowance of 240 samples is suggested.

Geological Mapping

Geological Mapping is hindered in the area by lack of outcrop. The entire property should be mapped at a scale of 400 feet to the inch. Where no outcrop is available record should be kept of the prevalent type of float. All geochemical grid lines should be traversed. Elsewhere mapping should be related to air photographs or physical features. Within the grid area trenching by bulldozer should be used to delineate contacts and to give information in otherwise unmappable areas.

In conjunction with mapping the rock types careful attention should be paid to alteration patterns and to limonite types.

Diamond Drilling

Campbell recommended a diamond drill program of 9,200 feet of BQ drilling. The writer concurs in the drilling requirement but recommends that it be preceded by the geochemical and geological programs in order to fully establish the best drill targets. ✓

The specific location and depth of the drill holes will be determined on the basis of the data forthcoming from the other phases of the program and in the later drilling by the results of early holes.

1. Trenching

(Caterpillar D7E or equivalent)

1½ months @ \$9,000.00/month \$ 13,500.00

2. Geochemical Survey

37 line miles of cut and ribboned line \$3,700.00

Sample collection 1,200 samples @ \$1.50 1,800.00

Sample Analysis @ \$2.50/sample 3,000.00 8,500.00

3. Geological Survey

Geologist and assistant - 3 months
includes logging drill core \$ 5,700.00

4. Diamond Drilling

9,200 feet BX @ \$18.00/foot 165,600.00

5. Engineering and Assays 7,500.00

6. Supervision, Transport & Camp Costs 12,000.00

7. Management & Consulting Charges 5,500.00

8. Contingencies 20,000.00

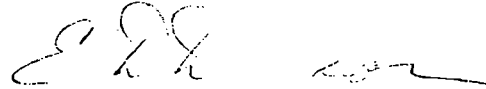
\$238,300.00

Property Payment 30,000.00

\$268,300.00

Respectfully submitted,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

EDD/st

December 4, 1969

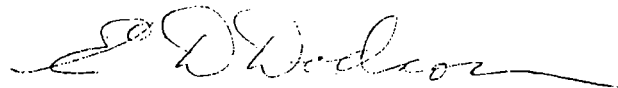
CERTIFICATE

I, Earl D. Dodson, do hereby declare that:

- 1.) I reside at 2990 St. Kilda Avenue, North Vancouver, B. C. and have business address at 12 - 425 Howe Street, Vancouver 1, B. C.
- 2.) I am a graduate in geology of the University of British Columbia 1954.
- 3.) Since 1954 I have been employed in various phases of mineral exploration; in the latter years in posts of considerable responsibility.
- 4.) I am a professional engineer registered in the Associations of Professional Engineers of the Province of British Columbia and the Yukon Territory.
- 5.) I have not visited the property but I have studied all the data available to me. In addition I have discussed the property and the proposals herein with A. J. MacDonald, P. Eng., who has twice visited the property, the last time in the summer of 1969.
- 6.) I have no interest, direct or indirect, nor do I expect to receive either directly or indirectly any interest in the properties or securities of Yukon Revenue Mines Ltd.

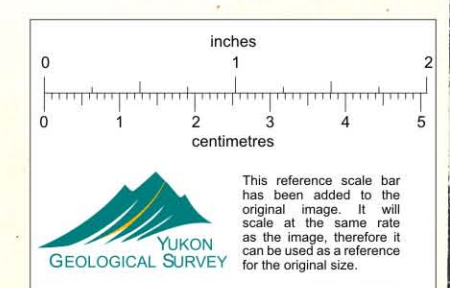
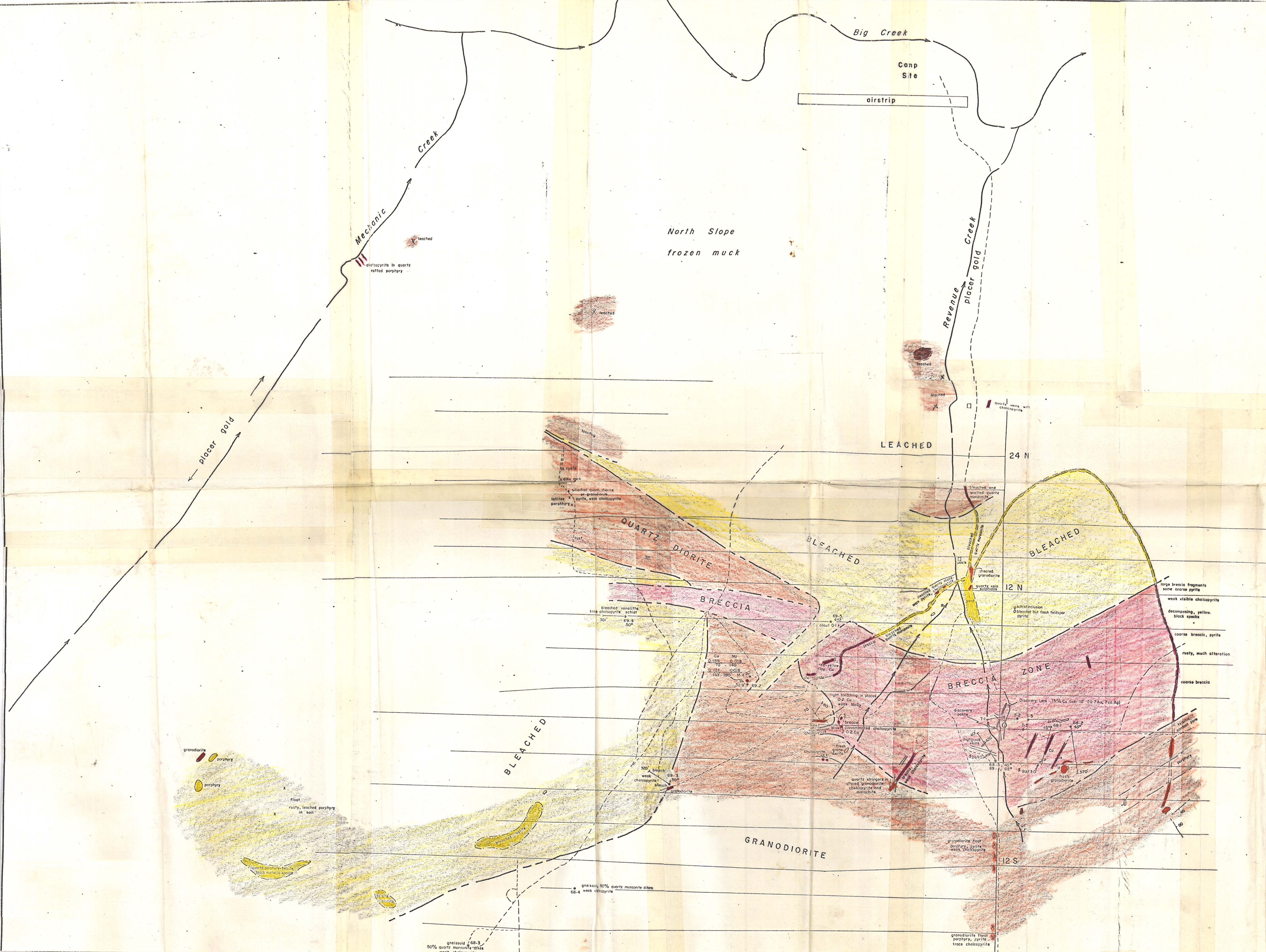
Respectfully submitted,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

EDD/st



YUKON REVENUE MINES LTD.
MacDONALD CONSULTANTS LIMITED
 11 — 425 HOWE ST. VANCOUVER 1, B.C.

GEOLOGY
Revenue Creek Area

SCALE	1" = 400 feet
DRAWN	g/s
DATE	NOV. 28, 1969
NUMBER	291-3

After geological map by R. A. Granger (1969)