

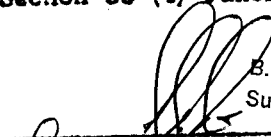
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 800.00



~~Resident Geologist or
Resident Mining Engineer~~

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



B. R. BAXTER
Supervising Mining Recorder
~~Commissioner of Yukon Territory~~



RED MTN. MOLYBDENUM PROSPECT
BUG CLAIM GROUP
SHEET 105-C-13, WHITEHORSE MINING DISTRICT
YUKON TERRITORY

BY

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WHITEHORSE, Y.T.
MARCH 22nd, 1976



070270

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INTRODUCTION

A large reddish-yellow to brown gossan zone occurs on Red Mountain near the head of Slate Creek and north of Red Mountain Creek, Sheet 105-C-13 in the Yukon Territory. The gossan zone was first reported in Memoir 203 - Geological Survey of Canada, in 1931-1935 by E.J. Lees. The gossan zone is caused by approximately 20% pyrite within a schist, gneiss, hornfels, amphibolite, diorite and granitic rock assemblage that is intersected by andesite and rhyolite dykes.

In 1968, Boswell River Mines Ltd., discovered molybdenite mineralization on Red Mountain, using a geochemical survey conducted by Barringer Research Ltd. - Toronto. A molybdenum soil anomaly was delineated that was 6000 feet long and 3000 feet wide on the Red Mountain gossan. The molybdenum determinations ranged from 20 PPM to 100 PPM and highs of 400 PPM. The Mo background ranged 2 - 4 PPM. Halo zones of lead, silver and iron occur outside the periphery of the molybdenum anomaly. Copper determinations indicate that some copper is associated with the molybdenum. In 1969, Boswell River Mines Ltd. conducted a 10,257 feet diamond drill programme in 16 drill holes. The diamond drill programme was conducted over the western portion of the geochemical molybdenum anomaly. Values of 0.053% to 0.133% MoS₂ over ten foot sections are reported in five different holes. The eastern and northwestern sections of the molybdenum geochemical anomaly has not been drilled. The geochemical molybdenum values range near 100 PPM in the northwestern side of Red Mountain and molybdenite in granitic rock occurs.

The Boswell River Mines Ltd. claim group was permitted to lapse in 1970. The Red Mountain gossan zone and molybdenum prospect was restaked by J.B. O'Neill - prospector of Whitehorse in 1970 with the Habitant claim group. The forementioned claims lapsed in May 1975. R.G. Hilker restaked the property in 1975 with the Bug 1-16 claim group.

LOCATION AND ACCESS

The Bug 1-16 claim group is located on NTS - Sheet 105-C-13 in the Whitehorse - Mining District of the Yukon Territory. The claim group is centered at approximately Latitude 60°59' and Longitude 133°46' on Red Mountain at an elevation of 4500 to 5500 feet. Red Mountain is 50 airmiles northeast of Whitehorse.

Access to the property is by helicopter from Whitehorse. A 32 mile tote trail was constructed from mile 26 on the Canol Road. Mile 26 is north of Johnson Crossing and west of Sydney Lake. The tote trail is located near Sydney Creek west of the Canol Road and swings northwest to Red Mountain Creek and Chalco Creek at Red Mountain. The tote trail was built as a winter road, but is of good construction that at little cost, can be built into an all weather truck road. The Canol Road Junction is at Mile 836 of the Alaska Highway and a distance of 82 miles south of Whitehorse.

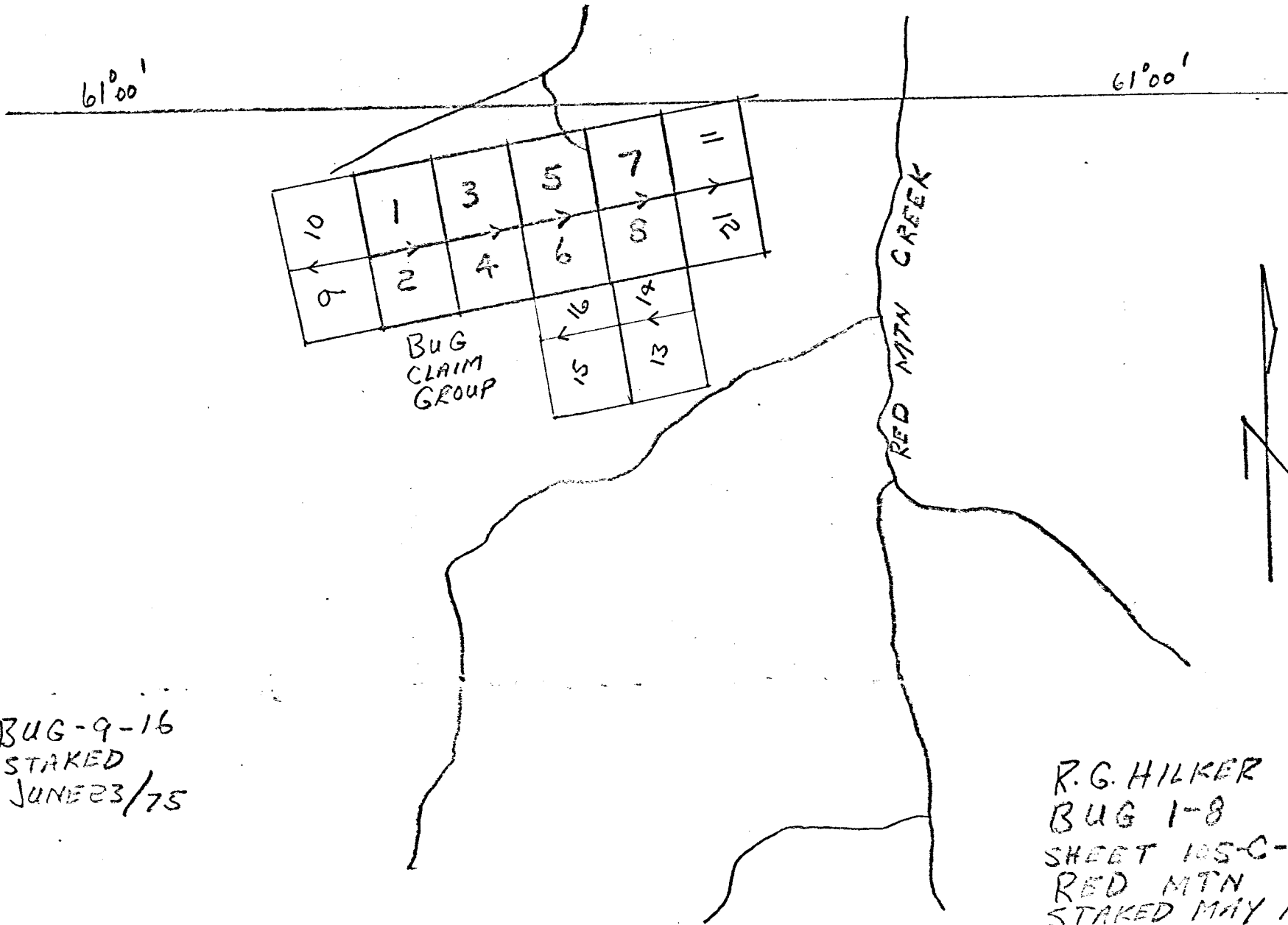
The Canol - Red Mountain tote trail was extended to the southwest end of Swift Lake. The 6 mile long lake permits fixed-wing access to the area. Swift Lake is 10 miles by tote road to the Red Mountain molybdenum prospect.

CLAIMS

The Bug 1 - 16 claim group is located in the Whitehorse Mining District - Yukon Territory, on Sheet 105-C-13. The claim group centers at about Latitude 60°59' and Longitude 133°46'. The claims are located at an elevation of 4500 to 5500 feet and are at or above the timberline. Bedrock is exposed in most parts of the property, but with abundant frost heaved scree cover.

<u>CLAIM NAME</u>	<u>GRANT NUMBER</u>	<u>ANNIVERSARY DATE</u>
Bug 1 - 8	Y98583 - Y98590	June 2, 1976
Bug 1 - 16	Y99304 - Y99311	July 11, 1976

The registered owner of the Yukon Quartz Mining Claims is Robert G. Hilker, Box 4008, Whitehorse, Yukon Territory.



BUG-9-16
 STAKED
 JUNE 23/75

R.G. HILKER
 BUG 1-8
 SHEET 105-C-13
 RED MTN
 STAKED MAY 16/75

GEOLOGY

The Bug claim group is located in the Big Salmon Range of the Pelly Mountains in the Southern Yukon Plateau. In the Big Salmon Range the elevation of the mountains vary between 4500 feet and two peaks 7000 feet in elevation. Igneous intrusives, that comprise mainly of granitic rocks but include basic and ultrabasic rocks occur in the ranges of the Pelly Mountains. The Big Salmon Range contains stratified rock types that include quartzite, schists, gneisses, slates, greenstones, sandstones and limestones. The forementioned stratified rock types are mainly Palaeozoic in age but range from Precambrian to Mesozoic. Tertiary aged sedimentary and volcanic rocks overlie, in parts, the intrusive and stratified rocks.

In Pliestocene time glaciation ice covered most of the Pelly Mountains. The ice ranged west and northwest in the Big Salmon Range.

Lithology

Unit 1 - Big Salmon Complex

The Big Salmon Complex comprises of metamorphosed sedimentary and volcanic rocks, that are Mississippian and earlier Palaeozoic in age. The most abundant rocks are micaceous quartzite, and quartz-mica schists and gneisses. Biotite is the main micaceous mineral. The quartzite beds are brown to black in color and consist of argillaceous quartzite, slate and graphitic schist.

Unit A

The rocks in Unit A are reported to be partially derived from Unit 1 and consist of the following type: mesocratic quartz-hornblende and feldspar-quartz-hornblende gneiss, or a micaceous, epidotic, or chlorite augen gneiss, to a black medium-course grained hornblendite.

Unit 2 - Coast Intrusions

Granite, granodiorite and diorites in a batholith forms part of the Big Salmon Range. The granitic rock assemblage is Cretaceous in age and consists of the following rock types: granite-potassium feldspar in equal or excess amounts to plagioclase (oligoclase) feldspar, greater than 20% quartz, some biotite. Granodiorite-potassium feldspar is in lesser amounts than plagioclase feldspar (calcic oligoclase or andesine), quartz about 15%, abundant hornblende, quartz diorite - very little potassium feldspar, and about 15% quartz.

Unit 3

The unit comprises of young volcanic dyke rocks that are reported to be Cretaceous and (?) Tertiary in age. Unit 3 contains porphyritic and felsitic dykes and porphyritic, fragmental, and amygdaloidal volcanic rocks.

TABLE OF FORMATIONS
RED MOUNTAIN - AREA - BUG CLAIMS

CENOZOIC

Quaternary

- 4 - drift and alluvium

MESOZOIC

Cretaceous And (?) Tertiary

- 3 - andesite and dacite porphyry and agglomerate, feldspar -
quartz porphyry and felsite dykes

Cretaceous

Coast Intrusions

- 2 - granite, granodiorite, diorite

PALAEOZOIC

Mississippian or Earlier (Mainly)

Big Salmon Complex

- 1 - schist, gneiss, quartzite, greenstone, limestone

-
- A - quartz - hornblende and quartz - feldspar - hornblende
gneiss and amphibolite; diorite; in part derived from
unit - 1.

After: R. Mulligan, G.S.C. Memoir 326

CLAIM GEOLOGY

The Red Mtn. geology northeast of Rosy and Swift Lakes to the Boswell River consists of Unit A - gneiss and amphibolite; Unit 1 - Big Salmon Complex, schist-gneiss-greenstone and limestone rocks; Unit 2 - Coast Intrusions, granite, granodiorite and diorite; Unit 3 - volcanic dyke rocks. The valley floors on Slate Creek, Red Mountain Creek and Chalco Creek are drift and alluvium covered.

The Red Mtn. gossan zone appears to contain thick volcanic dykes of Unit 3 - Cretaceous and (?) Tertiary in age that intruded the Mississippian or Earlier, Unit 1 - Big Salmon Complex assemblage of; schist, gneiss, quartzite, greenstone, limestone; and Unit A: quartz-hornblende, quartz-feldspar-hornblende gneiss (hornfels), amphibolite, and diorite.

Possibly offshoots of the Coast Intrusions batholith granitic rock types intruded the Big Salmon Complex prior to the later volcanic dyke intrusion, in the area of Red Mtn. The heat and pressure volcanic dyke intrusive caused considerable alteration in the dyke rocks and Big Salmon metamorphic rock types.

The reddish-yellow, brown and pale yellow-white dykes consist of andesite and dacite porphyry and agglomerate, feldspar-quartz porphyry and felsite rock types. Considerable oxidation, of up to 20% pyrite content in the volcanic dykes and Big Salmon Complex, has caused the large gossan zone on Red Mtn. and other areas four miles north to the Boswell River.

Sulphide mineralization appears to occur in the porphyritic and felsitic dyke rocks and in the contacting Big Salmon hornfelsic rocks on Red Mtn. and northwest area.

The multi-colored porphyry zone gossan on Red Mtn. extends northwest and west sporatically to the north side of Boswell River. The porphyry dyke belt is about 4 miles long and about 1500 - 2500 feet in width. Molybdenite mineralization

occurs in surface outcrops of the northwest trending porphyritic and felsitic dyke on the south side of Red Mtn., above Chalco Creek. The mineralization occurs between about the 4500 feet to 5200 feet elevation. The south face of Red Mtn. gossan zone varies from a weathered deep brown to a yellowish-cream color and consists of mainly felsite rock.

ECONOMIC GEOLOGY

Molybdenite occurs in small clusters and disseminated within the porphyry and felsite dyke rocks. In parts the hornfels contain molybdenite. Other minerals present are stibnite, tetrahedrite, sheelite, galena, sphalerite and pyrite. The halo effect of lead, zinc, silver and iron around the molybdenite core, as indicated by the geochemical survey suggests a classic type of porphyry deposit. Geochemical soil sampling has been restricted to the Red Mtn. gossan zone and not over the hornfel rock types. Sufficient background geochemical data has not been gathered to substantiate the spectacular and obvious Red Mtn. gossan zone that contains molybdenite mineralization.

In 1969, Boswell River Mines conducted 10,257 feet of diamond drilling in 16 drill holes. Part of the core has been salvaged by the Dept. of Indian Affairs and Northern Development resident geologist and is in storage at the H.S. Bostock Core Library in Whitehorse. The core was abandoned on Red Mtn. and consequently badly damaged due to dumped boxes and poor identification of hole and box numbers.

However, Dr. P.H. Sevensma, P. Eng. reports the following results in his February 22, 1974 report; the following table is quoted from the forementioned report.

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>%MOS2</u>	<u>Rock Type</u>
8	360'	380'	20'	.093	Hornfels
	290'	540'	250'	.053	"
11 ^B	629'	654'	25'	.18	Porphyry
2	80'	100'	20'	.10	Hornfels
3	50'	60'	10'	.133	"
	520'	530'	10'	.133	"
	570'	580'	10'	.117	"
1	865'	905'	40'	.156	Porphyry
	765'	941'	176'	.084	"
12	376'	386'	10'	.08	Porphyry

REFERENCE TO GEOLOGY

Memoir 247 - G.S.C., Physiography of The Canadian Cordillera, With Special Reference To The Area North of The Fifty-Fifth Parallel - by H.S. Bostock - Reprinted 1965.

Memoir 326 - G.S.C., Geology of Teslin Map - Area, Yukon Territory (105-C) - by Robert Mulligan - 1963.

G.S.C. Map 1125A - Teslin Yukon, Territory - by R. Mulligan, 1950 - 1953.

Memoir 203 - G.S.C., Geology of Teslin - Quiet Lake Area - Yukon Territory - E.J. Lees - 1936.

H.S. Bostock Core Library - Dept. of Indian and Northern Affairs - Northern Natural Resources Branch - Whitehorse, Y.T. - part of diamond drill core salvaged from Red Mountain abandoned by Boswell River Mines Ltd.

Geophysics Paper 1344 - Rosy Lake, Sheet 105-C-13 - Airborne magnetics Survey - Scale 1 inch = one mile.

Geology Report - Habitant Claims 105-C-13, Whitehorse Mining District, Y.T. - by P.H. Sevensma, Ph.D., P. Eng. - Peter H. Sevensma Consultants Ltd. - February 22, 1974.

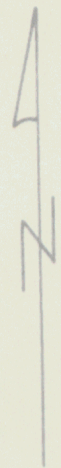
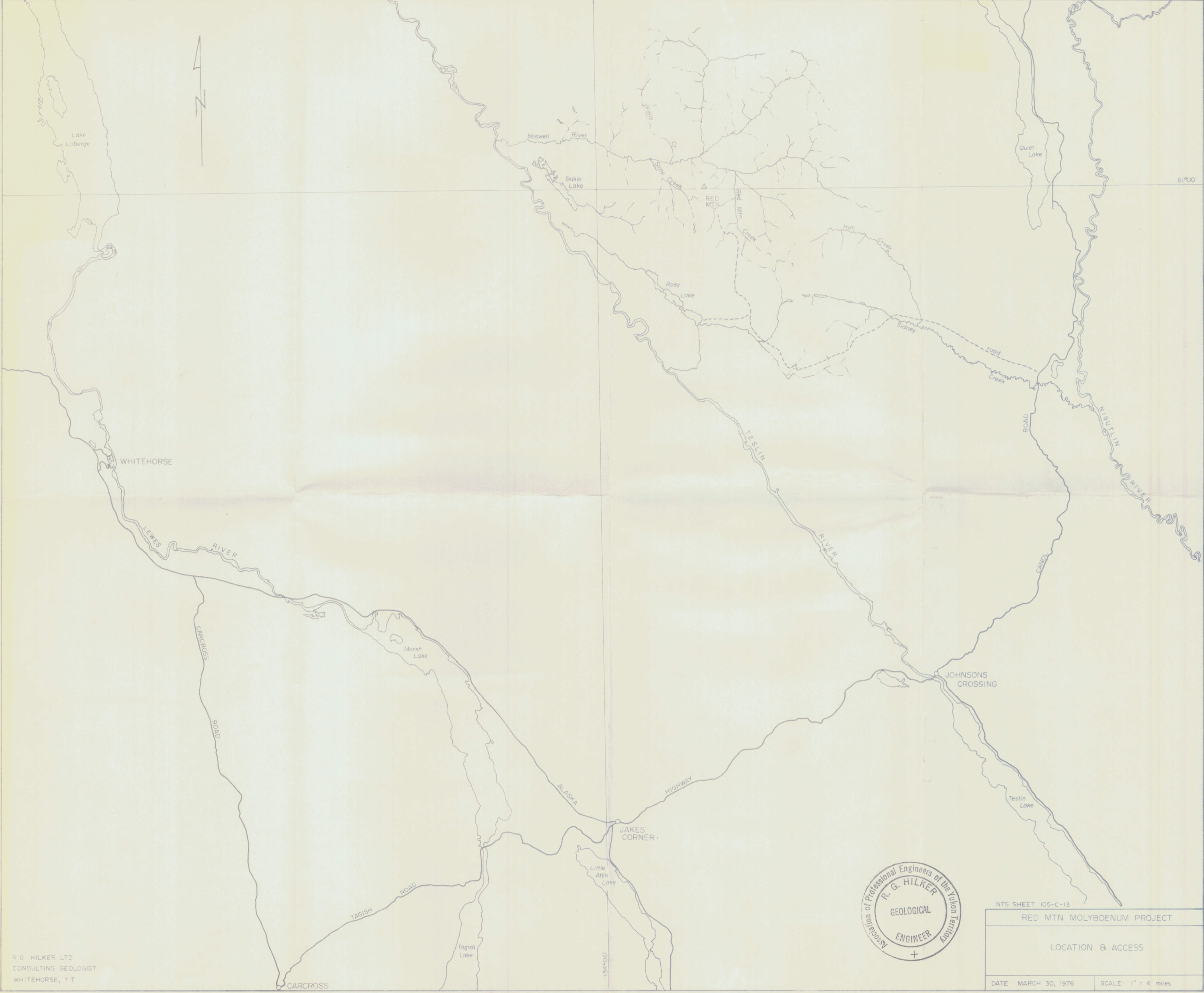
Boswell River Mines Ltd. - Fox Group Mineral Claims 105-C-13 Latitude 60°59' Longitude 133°45' - Whitehorse Mining District. Report on Airborne Geophysical Survey by H.S. Aikins under direction of P.H. Sevensmas and R.G. Gifford, January 17, 1968.

Geochemical Report - Fox and Star Claim Group - Whitehorse Mining District for P.H. Sevensma Consultants Limited by Barringer Research Limited, - October 1968.

CONCLUSIONS AND RECOMMENDATIONS

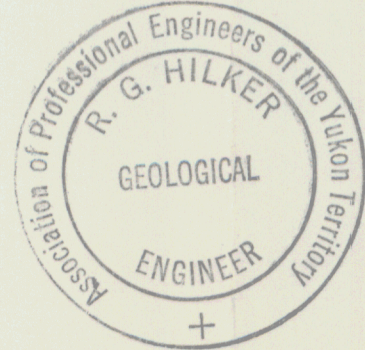
This report has been based on geology visits to Red Mtn. and the surrounding area, conducting reconnaissance geochemical and geology surveys southwest of Red Mtn. and by geological literature research. It has become obvious to the writer that the following points should be considered concerning the Red Mtn. molybdenum prospect:

1. Sufficient geochemical and geological data has not been collected to fully delineate possible areas of economic sulphide mineralization, that occurs in a porphyry type of deposit.
2. The previous geochemical survey has strongly suggested and partly proven a lead/zinc/silver/iron halo effect near the Red Mtn. gossan zone. The south side of Red Mtn. contains surface and diamond drill core molybdenite mineralization.
3. Younger aged porphyry rock types intrude on older Big Salmon Complex of metamorphosed rock types. Sulphide mineralization occurs in the porphyry rocks and in a hornfelsic rock type.
4. Sufficient geology mapping is lacking in the immediate Red Mtn. area to explain the geology setting of the molybdenum mineralized porphyry intrusive.



61°00'

134°00'



NTS SHEET 105-C-13
RED MTN MOLYBDENUM PROJECT

LOCATION & ACCESS

DATE: MARCH 30, 1976 SCALE: 1" = 4 miles

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