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WHITEHORSE, YUKON TERRITORY
"LAND OF THE MIDNIGHT SUN"

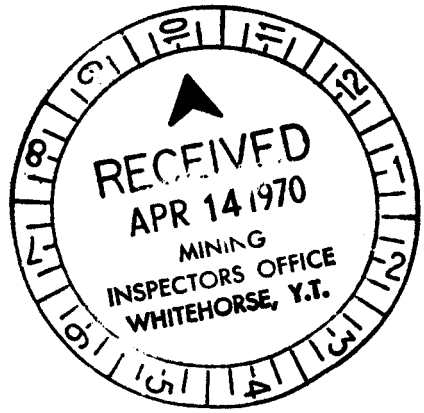
Geochemical Survey Assessment Work Report on the NW Claim Group Sheet 105-C-13 - Boswell River Area - Yukon Territory Latitude 60° 55' Longitude 133° 35' June 24th and August 14th, 1969

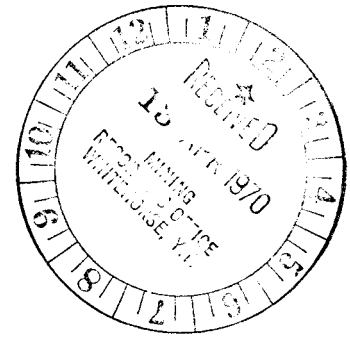
For

Northwest Explorers (1967) Ltd.
Calgary, Alberta

By

R. G. Hilker, P. Eng.
Consulting Geologist
Whitehorse, Y.T.
April 11th, 1970





This report has been examined by the Geological Exploration Unit and is recommended to the Chief Engineer to be considered as representation work to the amount of

$14,585.09

D. B. Craig

Resident Mining Engineer

Considered as representation work under Section 55 (3) Yukon Quartz Mining Act.

Commissioner of Yukon Territory

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1 - Claims Location - Plan #1
1 - Stream Survey Cu & Mo Values - Plan #2
1 - Stream Survey Pb & Mo Values - Plan #3
1 - Soil Survey Cu & Mo Values - Plan #4

INTRODUCTION

The NW and RH claim groups, Swift Lake area, are located in the south central part of the Yukon Territory, approximately 45 miles east of Whitehorse. The claims are staked just to the south of the Boswell River Mines prospect, a molybdenum showing at the headwaters of Slate Creek.

The rocks of the area are mainly Paleozoic sediments of the Big Salmon Complex, with schist, argillite, quartzites and minor limestone. Some of these sediments have undergone fairly extreme metamorphism, resulting in a hornblende gneiss which in places approaches diorite in composition and texture. Overlying these rocks, to the west, are Triassic and Jurassic sediments, while Coast and Cassiar granitic intrusives occur around the entire area, but mainly to the east.

During the summer of 1969, a reconnaissance programme of stream silt sampling was carried out over the area of the NW claim group. Results of this survey have been summarized in "Geochemical Report, Boswell River Area, Y.T.", Northwest Explorers (1967) Ltd., by R. G. Hilker, August 7th, 1969. Results of this program are encouraging, indicating possible molybdenum mineralization within the NW claims.

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FIELD PROGRAM - 1969

Between June 24th and August 14th, 1969, a program of reconnaissance silt sampling was carried out in the Swift Lake area, Yukon Territory, adjacent to the Boswell River Mines property. The report summarizing the results of this work is included at the end of this report. Work was carried out by personnel of R. G. Hilker Ltd., and Northwest Explorers (1967) Ltd., as follows:

(a) June, 1969 - Camp supplies purchased at Whitehorse.

(b) June 24 - 25th, 1969 - Camp supplies, helicopter fuel and two samplers, L. Campbell and D. Bollhorn, ferried to Swift Lake compsite by G.N.A. Beaver and set up camp.

(c) June 27th, 1969 - Two more samplers, P. Boulton and R. Carpenter, to Swift Lake campsite by G.N.A. Beaver.

(d) June 27th - July 1st, 1969 - Reconnaissance sampling carried out with helicopter support using T.N.T. Bell 47G-38-2.

(e) July 1st, 1969 - Four samplers returned to Whitehorse with Bell B-2 and G.N.A. Beaver.

(f) July 2nd, 1969 - G. S. Zimmer to property using G.N.A. Cessna 180 to collect samples.

(g) July 17th - 18th, 1969 - L. Campbell and D. Bollhorn returned to Swift Lake camp with G. S. Zimmer using G.N.A. Beaver and T.N.T. Jet Ranger. Camp moved from Lake to central part of NW claim group.

(h) July 18th - 25th, 1969 - Grid soil sampling carried out by L. S. Roberts, L. Campbell and D. Bollhorn.

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(i) July 25th, 1969 - L. Campbell and D. Bollhorn returned to Whitehorse by T.N.T. Jet Ranger.

(j) August 14th, 1969 - Camp dismantled and returned to Whitehorse using T.N.T. Jet Ranger.

(k) Silt and soil samples collected, were sent to Chemex Labs Ltd., in Vancouver, B.C., with analysis for Cu, Pb and Mo. A few preliminary analysis were done by the Whitehorse Assay Office, Whitehorse, Y.T.

(l) The report on results obtained was completed by R. G. Hilker, with drafting by R. Christensen. This report with maps appear at the conclusion of this report.

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LIST OF EMPLOYEES

The following personnel of R. G. Hilker Ltd., Whitehorse, Y.T., were employed to conduct the soil sample survey in the Swift Lake area.

Name/Dates	Occupation	Address
R. G. Hilker, P. Eng.	Geologist	P.O. Box 1566 Whitehorse, Y.T.
G. S. Zimmer July 2 July 18	Geologist	P.O. Box 1293 Whitehorse, Y.T.
D. Christie July 28	Student Geologist	604 E. Foster Ludington, Michigan
L. Campbell June 25 - July 25	Geochemical Sampler	C/O Northwest Explorers (1967) Ltd. Edmonton, Alberta
D. Bollhorn	Geochemical Sampler	C/O Northwest Explorers (1967) Ltd. Edmonton, Alberta
P. Boulton June 27 - July 1	Geochemical Sampler	1606 Blair Avenue Victoria, B.C.
R. Carpenter	Geochemical Sampler	100 - 29 Freshwater Rd. St. Johns, Nfld.
R. Christensen	Draftsman	1415 Tulip St. Trail, B.C.

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LOCATION AND ACCESS

The NW and RH claims, Swift Lake area, are located within the Sawtooth Range, in the south central Yukon Territory. This is a small range, about 20 miles long and 8 miles wide, trending N 45° W and centered at 60° 55' N latitude and 133° 50' W longitude. Physiographically, it is part of the more extensive Big Salmon Range, which trends in the same direction for over 100 miles. This is bounded on the east by the Nisutlin Plateau and on the northwest and southwest by the Lewes Plateau and the Teslin Plateau, respectively. The area lies northeast of the Teslin River and Swift Lake, and west of the Canol Road.

The NW and RH claim groups are located within the Whitehorse Mining Division, on Claim Sheet 105-C-13 in the Yukon Territory. The claims are north of Swift Lake, south of Slate Creek and southwest of Red Mountain Creek.

The area is accessible on the ground by a winter tractor road leaves the Canol Road at approximately Mile 28. This route basically follows the valley of Sidney Creek, cutting through the NW claims to reach the Boswell River Mines site. A small branch cuts off just below the NW claims, going to Swift Lake. Total length of this road is about 45 miles. (see Regional Geology - Sketch #2).

Best access, however, is by air from Whitehorse, a distance of 44 miles. This may be by helicopter directly to the claim groups or by fixed wing aircraft to Swift Lake, the location of the 1969 summer camp.

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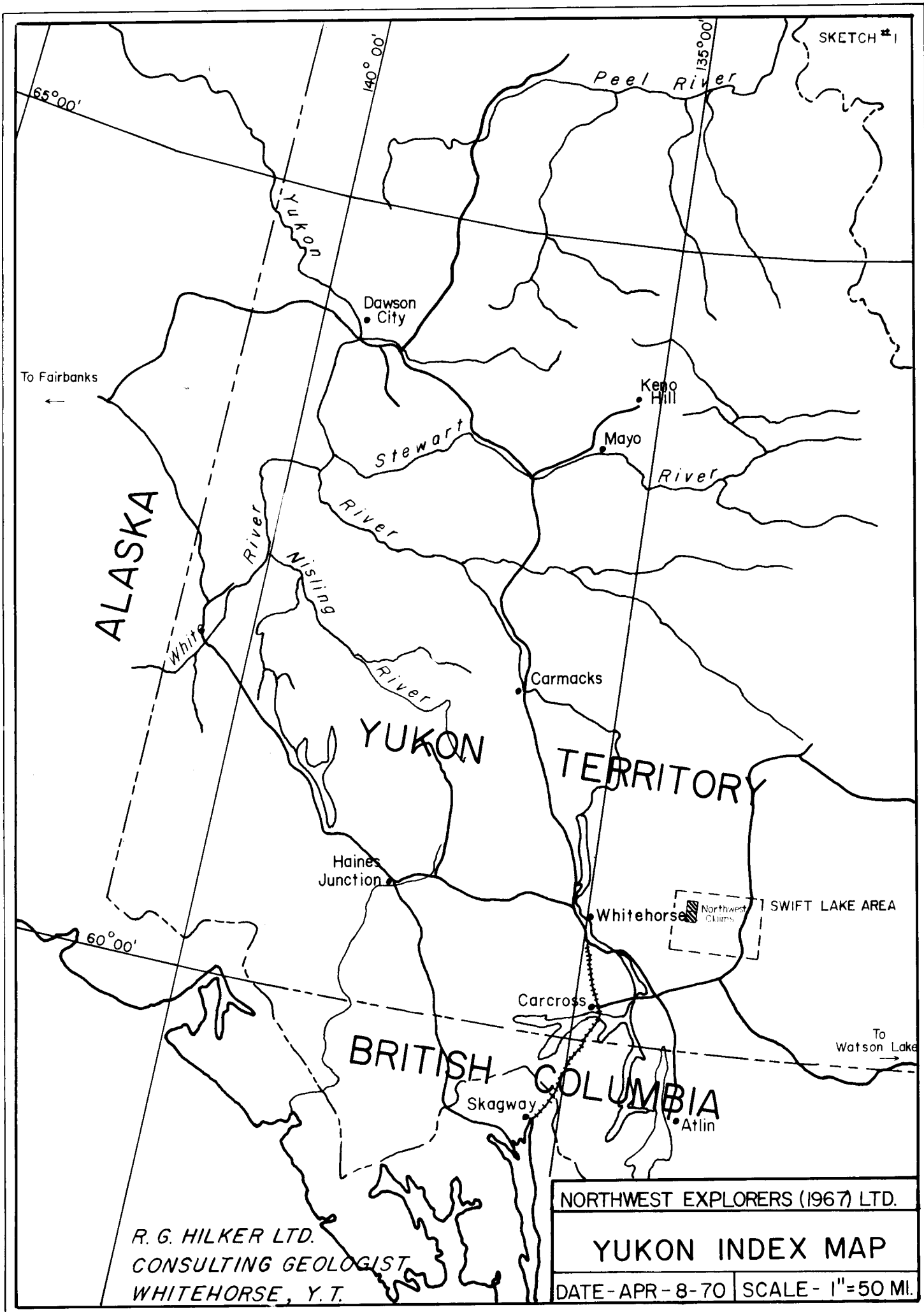
SKETCH #1
65°00'
140° 00'
135°00'
Peel River
Yukon
Dawson City
To Fairbanks
Keno Hill
Mayo
Stewart River
River
ALASKA
River
Nisling River
White
Carmacks
YUKON TERRITORY
Haines Junction
Whitehorse
Northwest Claims
SWIFT LAKE AREA
60°00'
Carcross
To Watson Lake
BRITISH COLUMBIA
Skagway
Atlin
R. G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.
NORTHWEST EXPLORERS (1967) LTD.
YUKON INDEX MAP
DATE - APR - 8 - 70
SCALE - 1" = 50 MI.

CLAIMS

On April 6th, 1970, claims of the R.H. group and a part of the N.W. group, Boswell River area, Yukon Territory, on map sheet 105-C-13, were searched at the Whitehorse Mining Recorders Office by G. G. Carlson. The following information was obtained from the files:

Claim Name & No.	Grant No.	Anniversary Date	Grantee
NW 1 - 6 (inclusive)	Y34131 - Y34136	May 2, 1970	Paul Germaine
NW 11 - 16 (inclusive)	Y34141 - Y34146	May 2, 1970	Jimmy Davis
NW 21 - 24 (inclusive)	Y34151 - Y34154	May 2, 1970	A. MacBeth
NW 25 & 26	Y34155 & Y34156	May 2, 1970	E. R. Mead
NW 53 & 54	Y34183 & Y34184	May 2, 1970	F. Robins
NW 55 - 58 (inclusive)	Y34187 - Y34190	May 2, 1970	C. Robins
NW 75 & 76	Y34209 & Y34210	May 2, 1970	Diane Gibney
NW 77 - 80 (inclusive)	Y34211 - Y34214	May 2, 1970	Marilyn Bishop
NW 103 & 104	Y34233 & Y34234	May 2, 1970	Mary K. O'Neil
NW 105 - 112 (incl.)	Y34235 - Y34242	May 2, 1970	Harold L. Babcock
NW 143 - 150 (incl.)	Y34251 - Y34258	May 2, 1970	James A. Cox
NW 183 & 184	Y34259 & Y34260	May 2, 1970	N. Mervyn
NW 113 - 120 (incl.)	Y34299 - Y34306	May 6, 1970	W. A. Sedler
NW 151 & 152	Y34321 & Y34322	May 6, 1970	Karen Quilliams
NW 153- 160 (incl.)	Y34323 - Y34330	May 6, 1970	D. Quilliams
NW 239 - 246 (incl.)	Y34375 - Y34382	May 6, 1970	M. McGovern
NW 247 - 254 (incl.)	Y34383 - Y34390	May 6, 1970	Rose Mercier
NW 255 - 262 (incl.)	Y34391 - Y34398	May 6, 1970	George Redford

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Claim Name & No.	Grant No.	Anniversary Date	Grantee
NW 263 - 270 (incl.)	Y34399 - Y34406	May 6, 1970	M. Berkner
NW 280, 282, 284 & 286	Y34408, 10, 12, & 14	May 6, 1970	Emily Alberg
NW 288, 290, 292 & 294	Y34416, 18, 20, & 22	May 6, 1970	Vivian Dychuck
NW 296 & 298	Y34424 & Y34426	May 6, 1970	Linda Burian
NW 271 - 278 (incl.)	Y35014 - Y35021	May 23, 1970	R. Conant
RH 1 - 8 (inclusive)	Y38775 - Y38782	Oct. 10/70	Northwest Explorers (1967) Ltd. 100 % interest

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GENERAL GEOLOGY

The Sawtooth Range is a somewhat rugged area of mountainous terrain. Elevations vary from over 6000 on the peaks to 2500 feet at Swift Lake. The treeline is between 4500 and 5000 feet. The higher areas are typical alpine terrain with rounded peaks, light overburden with few outcrops, grass covered slopes and minor willow growths. Below this, spruce trees are the dominant vegetation, growing to 20 or 30 feet. Outcrops also occur in stream cuts in the steeper valleys. Both alpine and continental glaciation have been avtive in the area.

The major rocks through the Sawtooth Range are sediments of the Big Salmon Complex. These are Paleozoic rocks of the Mississippian group and earlier which have undergone medium to extreme metamorphism. The rocks are chiefly micaceous quartzites and quartz-mica schists and gneisses, with biotite dominant. Also included are bands of limestone and marble, meta-volcanics and minor occurrences of garnet-epidote skarn.Within these rocks is a smaller group of pseudodioritic hornblende gneisses. These may be older sediments, or possibly zones of higher grade metamorphism of the same sediments with minor associated diorite intrusives. Overlying the Big Salmon Complex, and running parallel to the Sawtooth Range on the southwest side, is a band of relatively unmetamorphosed Triassic and Jurassic sediments consisting of argillites, sandstones, greywacke and conglomerates with a little limestone and some volcanics.

To the north and east of the Sawtooth Range is a large body -

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of Cretaceous Coast Intrusive. This is composed of granitic rocks ranging from granite through granodiorite and diorite. Smaller stocks and plugs of the same rock surround the Sawtooth Range area on the other side.

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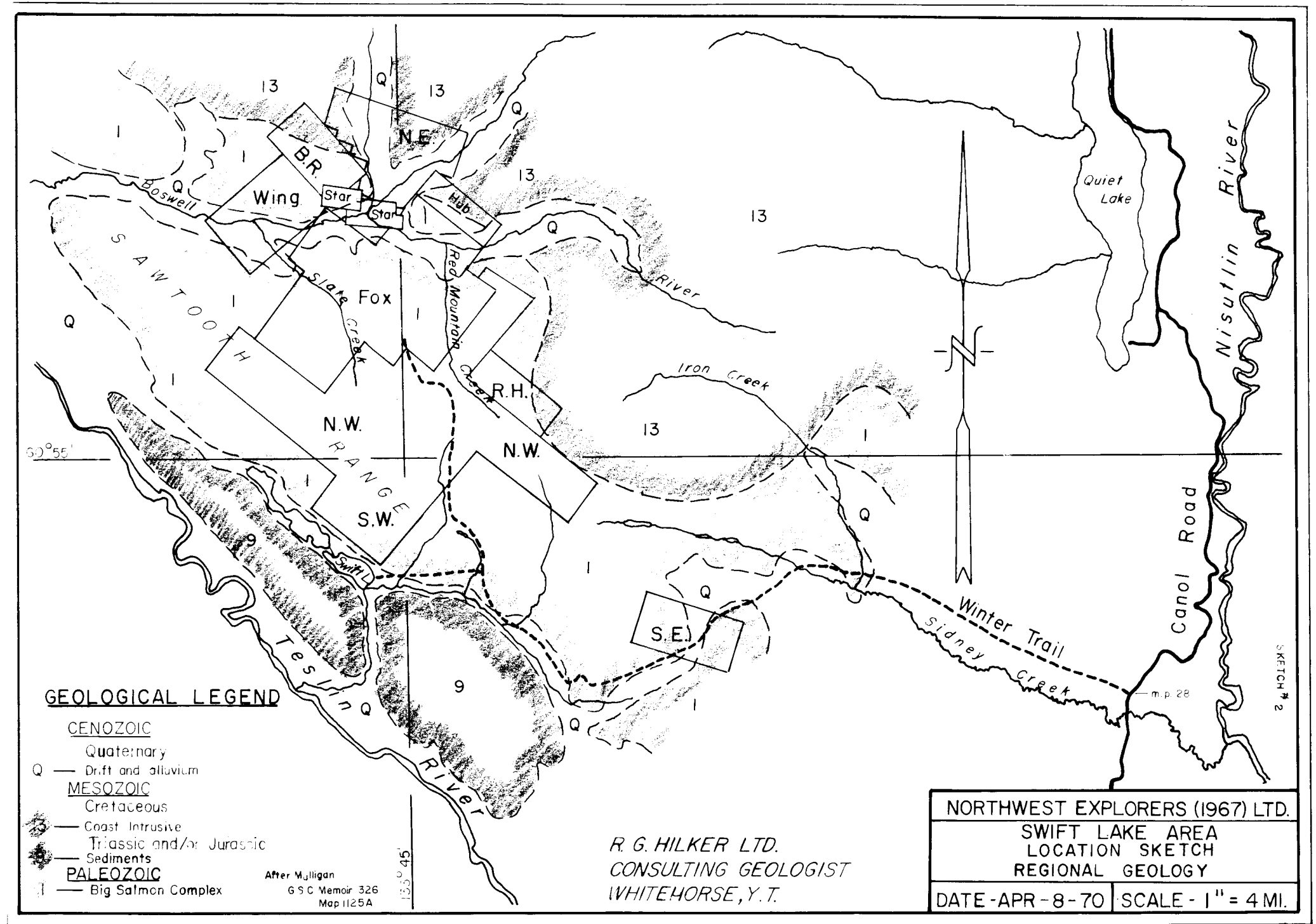
Boswell
Wing
B.R.
Star
Star
Hub
N.E.
Slate Creek
Fox
Red Mountain Creek
River
Quiet Lake
Nisutlin River
SAWTOOTH
RANGE
N.W.
R.H.
N.W.
S.W.
S.E.
Iron Creek
Swift
Teslin River
Winter Trail
Sidney Creek
m.p. 28
Canol Road
60°55'
59°45'
SKETCH # 2
GEOLOGICAL LEGEND
CENOZOIC
Quaternary
Q — Drift and alluvium
MESOZOIC
Cretaceous
13 — Coast Intrusive
Triassic and/or Jurassic
9 — Sediments
PALEOZOIC
1 — Big Salmon Complex
After Mulligan
GSC Memoir 326
Map 1125A
R. G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.
NORTHWEST EXPLORERS (1967) LTD.
SWIFT LAKE AREA
LOCATION SKETCH
REGIONAL GEOLOGY
DATE - APR - 8 - 70
SCALE - 1" = 4 MI.

TABLE OF FORMATIONS

CENOZOIC

Pleistocene and Recent

[Q] - Drift and Alluvium

MESOZOIC

Cretaceous and (?) Tertiary

[14] - Andesite and dacite porphyry and agglomerate, feldspar-quartz porphyry and felsite dikes.

Cretaceous

[13] - Coast and Cassiar Intrusions - Granite, granodiorite, diorite.

Jurassic or Cretaceous

[12] - Diorite

[11] - Peridotite, peroxinite, serpentine

Triassic and/or Jurassic

[10] - Undifferentiated volcanic and sedimentary rocks.

[9] - Argillaceous sandstone and siltstone, greywacke, conglomerate, limestone, associated volcanics.

Triassic

[8] - Lewes River Group - Argillite and sandstone

PALEOZOIC (?)

Permian and/or Triassic

[7] - Volcanic and altered volcanic (?) rocks; chert, minor argillite and quartzite.

Permian (?) or Later

[6] - Conglomerate, greywacke, limestone

Pennsylvanian (?) and Permian

[4|5] - Cache Creek Group
5 limestone, minor chert argillite, slate, greenstone
4 Argillaeceous and quartzitic siltstone, sandstone, greywacke, chert, minor limestone.

Mississippian

[2|3] - Englishman's Group
3 Argillaceous quartzite, slate, phyllite, chert
2 limestone

Mississippian or Earlier

[1] - Big Salmon Complex - schist, gneiss, quartzite, greenstone, limestone.

(After Mulligan - G.S.C. Memoir 326)

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REFERENCE TO PUBLISHED GEOLOGY

The following list of publications contain information on the regional aspects of the geology of this area, plus the economic geology of specific showings. Reference was made to this material in preparation of this report of Northwest Explorers (1967) Ltd.:

Bostock, H.S. (1948) "Physiography of the Canadian Cordillera, with Special Reference to the Area North of the Fifty-fifth Parallel", Geological Survey of Canada, Memoir 247.

Lees, E. J. (1936) "Geology of the Teslin - Quiet Lake Area, Yukon", Geological Survey of Canada, Paper 45-21.

Mulligan, R. (1963) "Geology of the Teslin Map Area, Yukon Territory", Geological Survey of Canada, Memoir 326.

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GEOCHEMICAL SURVEY

SUMMARY

A reconnaissance silt survey was carried out in the Swift Lake area on the claims surrounding the Boswell River Mines claims. Following statistical determinations on the sample assay values, an evaluation based on moving "Cell Determinations" was carried out.

An area significantly mineralized lies on the north side of the main grid. It was suggested that this area be sampled on a reconnaissance basis taking soil samples at known elevations along side-hills until target areas for detailed sampling can be determined. Three grids, named the North Block, Central Block and South Block were laid out for a more detailed reconnaissance soil sampling program. Anomalous copper and molybdenum values from these soils have outlined several target areas which deserve close geological, geochemical and geophysical investigation.

INTRODUCTION

During the summer of 1969, a helicopter supported reconnaissance stream survey was carried out on ground nearby the Boswell River Mines property. The samples were taken in fine silt, where possible, or in soil along the banks of fast (silt-free) streams. Samples were taken at approximately 500 foot spacings down the streams to near the edge of the property.

Since the area surrounds the Boswell River Mines showings and this ground has knwon copper, lead and molybdenum anomalies in the soils, the 500-plus samples were first analyzed for lead and -

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molybdenum, and finally checked for copper.

Unfortunately, no ideas of the stream pH is available so the possible relationship of the determined anomalous values to the Boswell area cannot be evaluated.

For a more detailed reconnaissance survey over the original anomalous zones, three grids were laid out, with 1,000 foot line separations and sample stations every 200 feet. These were positioned to cover the side-hill areas adjacent to the three main molybdenum anomalies in the stream silts. The samples collected were analyzed for copper and molybdenum.

SAMPLE VALUES

The samples were dried and sieved, the metals extracted by hot "aqua-regia", and the values determined by Atomic Absorption on a tetron AA-5 unit.

STATISTICAL INTERPRETATION - STREAM SURVEY

When working with groups of numbers to determine some fact about their relation, it is imperative to use the mathematics of the interrelation of numbers. Thus statistics were applied to the ppm values. By this procedure it is possible to denote which values are statistically anomalous rather than just high values of the elements being analyzed.

It is also important to note that it is logically and mathematically incorrect to take two or more maps each evaluated -

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in one analyzed element and compare them without first statistically evaluating each on the basis of its own values rather than some arbitrary scheme. One may be lucky and able to compare them map for map, but this cannot delineate to the best advantage of the data itself, the anomalous areas.

The procedure then was to determine the overall mean and standard deviation for each of the elements, then to evaluate the mean for each stream. Using an overlying arbitrary grid moved at fixed spaces over the map, a "Cell Determination" of the area of significance was made and the trends over the map were thus discovered. This procedure and variants of it have proved very successful in the United Sates to find mineralized areas.

The following is a list of the significant statistical values used:

	Mean	Standard Deviation
Lead	16.5	4.62
Molybdenum	.185	.867
Copper	23.6	18.3

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AREAS OF SIGNIFICANCE - STREAM SURVEY

In the main claim group the main zone mineralized in lead and copper lies in a general east-west direction starting on the west corner running into the Boswell claims and part-way down on the long line of claims to the south and east. The long arm, on the main group, to the north-east, is significant for the extremely high copper values on the north-west branch of this stream. The rocks seam to change mineral-wise to the south corner of this main group. It is especially significant that good molybdenum values occur with good lead and moderate copper values, expecially in the centre of the area of significantly anomalous values.

The unusually high copper in the north-west corner coupled with some molybdenum and poor lead, suggests a different mineralization type.

The north group is flat and little significance. The only unusual occurrence is a very high molybdenum (comparatively) to the whole area. It is suggested that this may be a spot localized high of the quartz-molybdenum vein type.

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INTERPRETATION - SOIL SURVEY

The three soil sample grids are located on the Big Salmon Complex of sediments, as mapped by Mulligan (See Reference to Published Geology) and adjacent to the Coast Intrusive granitic rocks. The contact between the sedimentary rocks and the granite intrusion is to the northeast of the reconnaissance linegrids.

The mean of the copper values for each grid and for the three grids together are listed below:

Grid	Mean - PPM Copper
North Block	46
Central Block	43
South Block	62
Combined Total	53

The mean copper value for the South Block is higher because of a greater relative number of anomalous values. Since the soil types, topography and sampling technique are similar to all three areas, the best estimate of the true mean value, $\bar{x}$, is the combined totals of all values, or 53 ppm copper. The standard deviation, s, has not been calculated for the copper values, but a reasonable estimate would be 25 ppm copper. This means that values greater than 78 ppm copper ($\bar{x}$ + s) are in the "possible anomalous" category, and values greater than 103 ppm copper ($\bar{x}$ + 2s) are in the "possible anomalous" category.

The three grid areas have been contoured using 75 and 100 ppm copper as contour values.

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This reasonably delineates anomalous copper zones. However, because of the wide spacing of the grid lines, a heavy bias is introduced when anomalies are extrapolated from one line to the next. Several of the contoured anomalies do trend at right angles to the grid lines. These should not be assumed to be definitely continuous without a closer spaced soil sampling program.

Neither statistics or contouring have been applied to the molybdenum values. The mean value would be very close to zero ppm molybdenum and the standard deviation probably less than 1 ppm molybdenum. This means that any value greater than 1 ppm molybdenum is probably anomalous, expecially if two or more of these values occur together.

Copper and molybdenum, when they occur together, are excellent geochemical pathfinders. Copper is quite mobile in an acidic or low pH environment. This condition generally prevails in soils over granites or siliceous sediments. Copper derived from bedrock in this environment is readily dissolved and transported by groundwater to surface soils where it is readily detected. In a basic or high pH environment, as in soils over carbonate-rich rocks such as limestone, copper is not soluble and therefore not mobile in groundwater flow.

Molybdenum, however, is quite mobile in a basic environment and suppressed in an acid environment. Therefore, where copper is restricted by basic soil conditions, molybdenum becomes an excellent pathfinder element.

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In the North, Central and South Blocks, isolated high molybdenum values are associated with the main copper anomalies. However, the copper anomalies associated with the most substantial molybdenum anomalies have relatively lower values.

Finally, since this is an area of irregular terrain with steep sidehill slopes, geochemical anomalies in the surface soils will be displaced down-slope, or in the direction of ground-water flow, from the bedrock source.

The factors of contouring bias, soil pH conditions and downhill anomaly displacement are most important considerations in this survey. Soil pH has not been measured in this area.

1. North Block

Four distinct copper anomalies are evident from the contouring (See Geochemical Survey - Plan No. 4). These occur on the southwest half of the grid, are partially open to the west, and are most prominent south of the creek. A few minor molybdenum values coincide with these anomalies, although the main molybdenum anomaly, in the east corner, occurs with relatively low associated copper values. The copper anomalies are all probably slightly displaced downhill from the bedrock source, especially on the north side of the stream where the slope is steeper. The molybdenum anomaly is near the top of a ridge with a fairly gentle slope.

Both the copper and molybdenum anomalies south of the creek deserve detailed investigation.

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The survey area should be extended not only to the east and west but also up slope to the south as far as the ridge top.

2. Central Block

This area has two distinct copper anomalies. The main anomaly crosses the atream at right angles and involves 184 to 330 ppm copper values and a single 10 ppm molybdenum value. Both anomalies are on a fairly steep slope and both are open to the southeast. More reconnaissance work is required in this direction before an area for detailed work can be defined.

The main anomaly, as contoured, indicates continuous mineralization from one side of the valley to the other. If detailed soil sampling confirms this continuity, the bedrock mineralization will probably be very close to its surface soil expression.

Both anomalies are downstream and downslope from the original molybdenum anomaly in the stream silts. Therefore, the reconnaissance work should also be extended to the south and west to detect a probable anomalous zone at a higher elevation.

3. South Block

This is the largest area covered by a reconnaissance grid and it has the most interesting geochemical values. A major region of detectable molybdenum, including some extremely anomalous values of up to 26 ppm molybdenum, occurs over the entire northeast side of the grid.

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A few high copper values are associated with the higher molybdenum values in this zone. The main copper anomalies, which are more extensive than those on the two other grid areas, occur in the central and western parts of this area. Three low molybdenum values are associated with only one of these anomalies.

The molybdenum anomaly covers a ridge area with fairly gentle slopes, while the copper anomalies are localized more in a depression adjacent to the stream. This may be an indication that the mobility of the molybdenum is lower than that of the copper, and thus the molybdenum anomaly is closer to the mineralization source.

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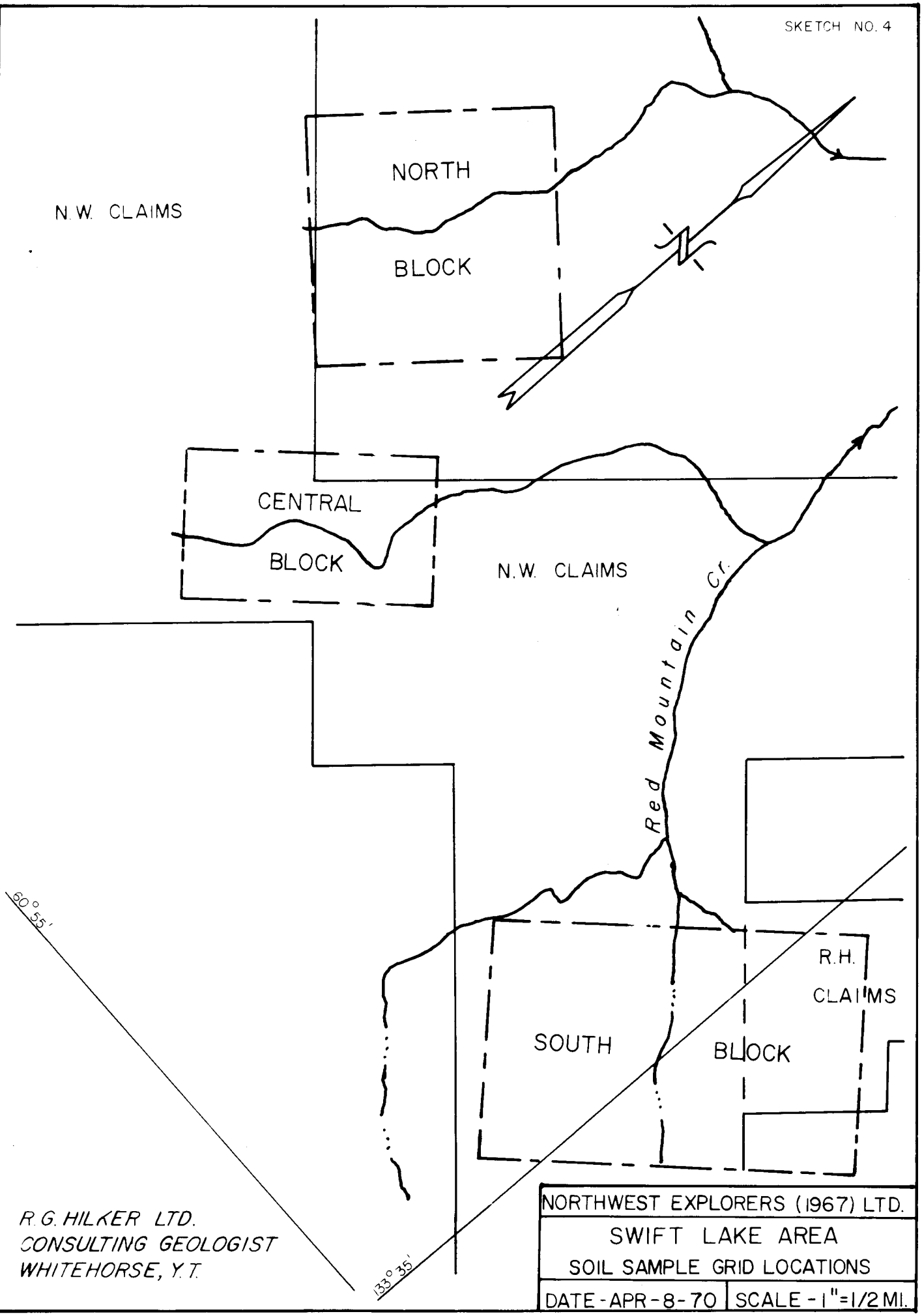
SKETCH NO. 4



R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

NORTHWEST EXPLORERS (1967) LTD.	
SWIFT LAKE AREA SOIL SAMPLE GRID LOCATIONS	
DATE - APR - 8 - 70	SCALE - 1" = 1/2 MI.

CONCLUSIONS AND RECOMMENDATIONS

The results of the geochemical work to date over the NW and RH claims are definitely encouraging and indicate a probable reflection of bedrock mineralization. The anomalies outlined to date are very extensive and are not fully delineated.

The Northwest Explorers property and adjacent areas require a continuation of regional soil sampling and extensive soil sampling on the claim group, on a closed spaced linegird over delineated anomalies. Where possible, the geology should be mapped both in detail on the linegrid and regionally over the entire claim group. A magnetics survey would also help define the limits of any intrusive rock in the area.

In interpretation of subsequent geochemical results, a knowledge of soil pH and topography are necessary. Available geological information would be extremely beneficial in determining the relationship of copper anomalies to molybdenum anomalies in the soil and the relationship of all anomalies to any mineralized bedrock source.

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EXPENDITURES

Expenditures incurred on behalf of Northwest Explorers (1967) Ltd., for the geochemical program carried out during the period, June 24 - August 14, 1970 are as follows:

Date	Invoice No.	Total Dollars
July 29, 1969	NWE-69-1 (R. G. Hilker Ltd.)	$6,753.42
August 29, 1969	NWE-69-2 (R. G. Hilker Ltd.)	2,012.49
June 30, 1969	238-69 (Trans North)	3,201.43
July 29, 1969	344.69 (Trans North)	1,503.20
August 29, 1969	469-69 (Trans North)	212.40
July 2, 1969	Ticket No. 13781 (G.N.A.)	173.00
July 11, 1969	Ticket No. 13790 (G.N.A.)	86.00
June 25, 1969	Ticket No. 16485 (G.N.A.)	58.00
June 26, 1969	Ticket No. 16487 (G.N.A.)	86.00
June 27, 1969	Ticket No. 16489 (G.N.A.)	346.00
June 24, 1969	Ticket No. 16606 (G.N.A.)	86.00
June 25, 1969	Ticket No. 16607 (G.N.A.)	58.00
July 17, 1969	Ticket No. 16801 (G.N.A.)	86.00
Total Expenditures		$14,661.94

Copies of the above mentioned invoice are included in the appendix of this report and contain a more detailed description of the survey costs.

The following is a brief breakdown of the expenditures on the invoice numbers listed above:

...23

EXPENDITURES

Expenditures incurred on behalf of Northwest Explorers (1967) Ltd., for the geochemical program carried out during the period, June 24 - August 14, 1970 are as follows:

Date	Invoice No.	Total Dollars
July 29, 1969	NWE-69-1 (R. G. Hilker Ltd.)	$6,753.42
August 29, 1969	NWE-69-2 (R. G. Hilker Ltd.)	2,012.49
June 30, 1969	238-69 (Trans North)	3,201.43
July 29, 1969	344.69 (Trans North)	1,503.20
August 29, 1969	469-69 (Trans North)	212.40
July 2, 1969	Ticket No. 13781 (G.N.A.)	173.00
July 11, 1969	Ticket No. 13790 (G.N.A.)	86.00
June 25, 1969	Ticket No. 16485 (G.N.A.)	58.00
June 26, 1969	Ticket No. 16487 (G.N.A.)	86.00
June 27, 1969	Ticket No. 16489 (G.N.A.)	346.00
June 24, 1969	Ticket No. 16606 (G.N.A.)	86.00
June 25, 1969	Ticket No. 16607 (G.N.A.)	58.00
July 17, 1969	Ticket No. 16801 (G.N.A.)	86.00
Total Expenditures		$14,661.94

Copies of the above mentioned invoice are included in the appendix of this report and contain a more detailed description of the survey costs.

The following is a brief breakdown of the expenditures on the invoice numbers listed above:

Aircraft		
(helicopter and fixed wing; access to property, expediting, daily positioning of field crews, etc.	Total	$5,026.00
Aviation Fuel and Drums	Total	742.10
Camp Supplies		
(equipment, food, etc.)	Total	4,120.79
Professional Fees - R. G. Hilker Ltd.		
(technical supervision and assistance, expediting, etc.)	Total	3,404.07
Assaying		
(geochemical analysis)	Total	943.88
Telephone		
(long distance calls regarding property and field program)	Total	76.85
Report Preparation		
(writing, typing, drafting, printing, etc.)	Total	352.50
Total Expenditures		$14,661.94

Expenditures claimed for assessment work:

	$14,661.94	
Less	76.85	(See"telephone"above)
	$14,585.09	

CERTIFICATION OF EXPENDITURES

I, R. G. HILKER, P. Eng., hereby certify that the above is a true statement of expenditures incurred for the purpose claimed on behalf of Northwest Explorers (1967) Ltd.

Association of Professional Engineers of the Yukon Territory
R. G. HILKER
GEOLOGICAL
ENGINEER

R. G. Hilker, P. Eng.
April 10th, 1970
Whitehorse, Yukon Territory

A Commissioner for taking Affidavits
in and for the Yukon Territory

CERTIFICATION

I, ROBERT G. HILKER of #6 Chalet Crescent Hillcrest, in the City of Whitehorse, in the Yukon Territory, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist, with an office located at #8 Northern Metallic Building and postal address P.O. Box 566, in the City of Whitehorse, in the Yukon Territory.

2. THAT I am a graduate of the Michigan Technological University located in Houghton, Michigan, U.S.A., where I obtained a Bachelor of Science Degree in Geological Engineering (Exploration Option) in 1962.

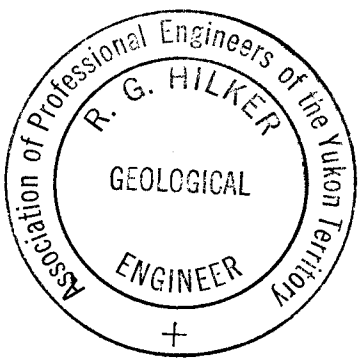
3. THAT I am a registered member in good standing of The Association of Professional Engineers of the Yukon Territory, and am registered with a non-residence license in The Association of Professional Engineers of the Province of British Columbia.

4. THAT I have practiced my profession as an engineer and geologist for the past seven years.

5. THAT I have personally supervised and directed the geochemical field work conducted in the Boswell River Area, Whitehorse Mining Division, Yukon Territory.

DATED this 10th day of April, A.D. 1970.

R. G. Hilker, P. Eng.



APPENDIX

To: Northwest Explorers (1967) Ltd.
408 Confederation Bldg.
10355 Jasper Ave.
EDMONTON, Alberta (Attn: Mr. Ed Mead)

Date: July 29th, 1969

Invoice No. NWE-69-1

Consulting Fees - R.G. Hilker (8 days in May, June & July)		1,200.00
Truck and Equipment Rentals		100.00
Drafting		60.00
Phone Calls (long distance)		48.90
Camp Supplies and Lab Tests (Travelodge - Campbell & Bollhorn, $1,035.46)	3,821.32	
Add: Expediting 15%	573.20	4,394.52
Personnel:		
S. Zimmer	450.00	
P. Boulton	250.00	
R. Carpentier	250.00	950.00
TOTAL		6,753.42

To: Northwest Explorers (1967) Ltd.
408 Confederation Bldg.
10355 Jasper Ave.
EDMONTON, Alberta (Attn: Mr. Ed Mead)

Date: August 29th, 1969

Invoice No. NWE-69-2

Assaying	$943.88	
Telephone	27.55	
Supplies	67.29	
	1,039.12	
Add: Expediting - 15%	155.87	$1,194.99
3½ professional days @ $150.00/day	525.00	
Typing	30.00	
Drafting	62.50	
Geochemical Report	200.00	817.50
TOTAL		$2,012.49

Pd. on Oct. 6/69

TRANS NORTH TURBO AIR LTD.

BOX 1977 PHONE 668-5588
WHITEHORSE, YUKON

TO:
Northwest Explorers Limited,
408 Confederation Building,
10355 Jasper Avenue,
Edmonton, Alberta

DATE June 30, 1969 INVOICE NO. 238 - 69

P.O. NO.

TO:	Charge you with the charter of Bell 47G-2 helicopter CF-QFQ. Pilot: Ron Connelly	
FLYING:	June 28th - 30th, 1969 Daily Flight Report Nos. 5834 - 5835, 5837	
	03.0 Hours at $147.00 per hour (Rate When Carrier Supplies Fuel)	$ 441.00
	13.9 Hours at $136.00 per hour (Rate When Charterer Supplies Fuel)	1,890.40
	Total Flying Charges - June	$2,331.40
PLUS:	Fuel Cache at Swift Lake	
	900 Gallons 100/130 avgas at $0.599 per gallon	539.10
	11 Light 45 Gallon drums at $7.00 each	77.00
	9 Heavy 45 Gallon drums at $12.00 each	108.00
	1 Case Shell W80 oil at $18.00 per case	18.00
	Camp supplies purchased and charged to TNTA. (per Seely's New & Used Store Invoice No. 1 attached.)	127.93
	Invoice Total PAY	$3,201.43

TESLIN

OK

TRANS NORTH TURBO AIR LTD.

BOX 1977 PHONE 668-5588
WHITEHORSE, YUKON

TO: Northwest Explorers Ltd.
408 Confederation Building
10355 Jasper Avenue
EDMONTON, Alberta

DATE July 29, 1969 INVOICE NO. 344-69

P.O. NO.

TO: Charge you with the following helicopter charters:

Bell 47G-3B-2 Helicopter CF-QFQ
Pilot: Ron Connelly

FLYING: July 1, 1969
Daily Flight Report No. 5830

5.5 Hours at $136.00 per hour $748.00
(Rate When Charterer Supplies Fuel)

Bell 206A Jetranger Helicopter CF-XFF
Pilot: Ray Conant

FLYING: July 10, 1969
Daily Flight Report No. 5298

1.2 Hours at $236.00 per hour 283.20
(Rate When Carrier Supplies Fuel)

Bell 206A Jetranger CF-TNT
Pilot: Cliff Armstrong

FLYING: July 17, 18, 24, 1969
Daily Flight Report Nos. 3750, 3753 and 3773

2.0 Hours at $236.00 per hour 472.00
(Rate When Carrier Supplies Fuel)

Invoice Total $1,503.20

TRANS NORTH TURBO AIR LTD.

BOX 1977 PHONE 668-5588
WHITEHORSE, YUKON

TO: Northwest Explorers Ltd.
408 Confederation Building
10355 Jasper Avenue
EDMONTON, Alberta

DATE August 29, 1969 INVOICE NO. 469-69

P.O. NO.

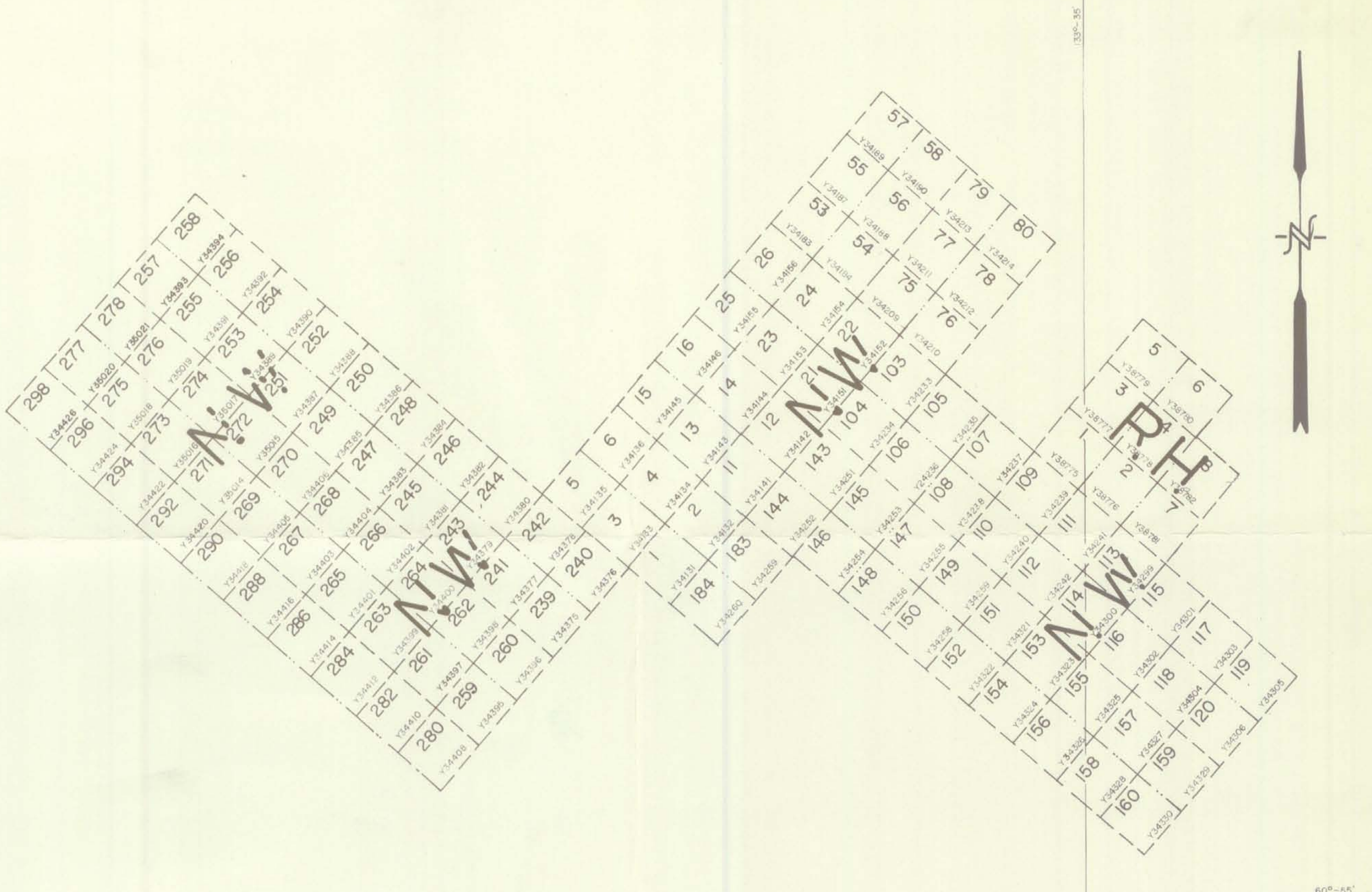
TO: Charge you with the charter of Bell 206A Jetranger Helicopter CF-TNT. Pilot: Cliff Armstrong

FLYING: August 14, 1969
Daily Flight Report No. 3839

0.9 Hours at $236.00 per hour (Rate When Carrier Supplies Fuel)	$212.40
Invoice Total	$212.40

Geslin

PLAN NO. I



R. G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

NORTHWEST EXPLORERS (1967) LTD.

NW & RH CLAIMS
BOSWELL RIVER AREA
SHEET 105-C-13

Date: 6 April /70 | Scale: 1" = 1/2 mile

N

R.H. claims
-staked Oct.10, 1969.

N.W. claims to which
assessment applied.
-118 claims

ROBY LAKE

SWIFT LAKE

CLAIMS OUTLINE

Note: COPPER readings are to RIGHT of stream.
MOLY readings are "0" unless to LEFT of stream.

COPPER DETERMINATION

R.G. HILKER LTD.
CONSULTANT GEOLOGIST
WHITEHORSE, Y.T.

NORTHWEST EXPLORERS (1967) Ltd.
BOSWELL RIVER AREA Y.T.
— GEOCHEMICAL SURVEY —

DRN. BY: R.A.C.	APP'D. R.G. HILKER
SCALE: 1" = 1/2 mile.	
DATE: JULY 29/69.	

WILEY CR.

FALLS CR.

BOSWELL R.

SLATE CR.

RED MTN CREEK

SWIFT R.

ROSY LAKE

SWIFT LAKE

SWIFT R.

N

N.W. claims to which assessment applied. -118 claims.

R.H. claims -staked Oct. 10, 1969.

CLAIMS OUTLINE

NOTE: - All MOLYBDENUM readings are "0" p.p.m. Unless noted to Left of stream.
- Lead (Pb) readings to Right of stream.

R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

NORTHWEST EXPLORERS (1967) LTD.
BOSWELL RIVER AREA Y.T.
—GEOCHEMICAL SURVEY—

DRN. BY: R.A.C.	APP'D BY: R.G. HILKER.
SCALE: 1" = 1/2 mile.	
DATE: JULY 16 / 69.	

NORTH BLOCK

CENTRAL BLOCK

SOUTH BLOCK

CLAIMS OUTLINE

N

CONTOUR VALUES - PPM. COPPER

75

100

NOTE: -COPPER READINGS TO RIGHT OF LINE.
-MOLY READINGS "0" UNLESS TO LEFT OF LINE.

R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

NORTHWEST EXPLORERS (1967) LTD.

BOSWELL RIVER AREA, Y.T.

GEOCHEMICAL SURVEY

DRN. BY: R.A.C.	APP'D. BY: R.G. HILKER
DATE: AUG. 6, 1969.	SCALE: 1" = 500 ft.