ASSESSMENT GEOLOGICAL-GEOCHEMICAL REPORT

on

TUF AND MUF MINERAL CLAIMS

N.T.S. 115 A/3E

Lat. 60° 07'N - Long. 137° 07'W

WHITEHORSE MINING DIVISION

YUKON TERRITORY

October, 1979

OWNER: NORTHERN HORIZON RESOURCE CORPORATION

WORK DONE: JULY 1 - AUGUST 20, 1979

John H. Kruzick
Westridge Enterprises Ltd.
Coquitlam, B.C.

090519

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

$ 11,200

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

EXPLORATION PROGRAM

Work Was Performed on the Following Claims;

YA23929	to	YA23936	incl.	TUF 1-8	incl.
YA24044	to	YA24053	incl.	TUF 27-36	incl.
YA24058	to	YA24063	incl.	TUF 41-46	incl.

TABLE OF CONTENTS

MAPS

INTRODUCTION

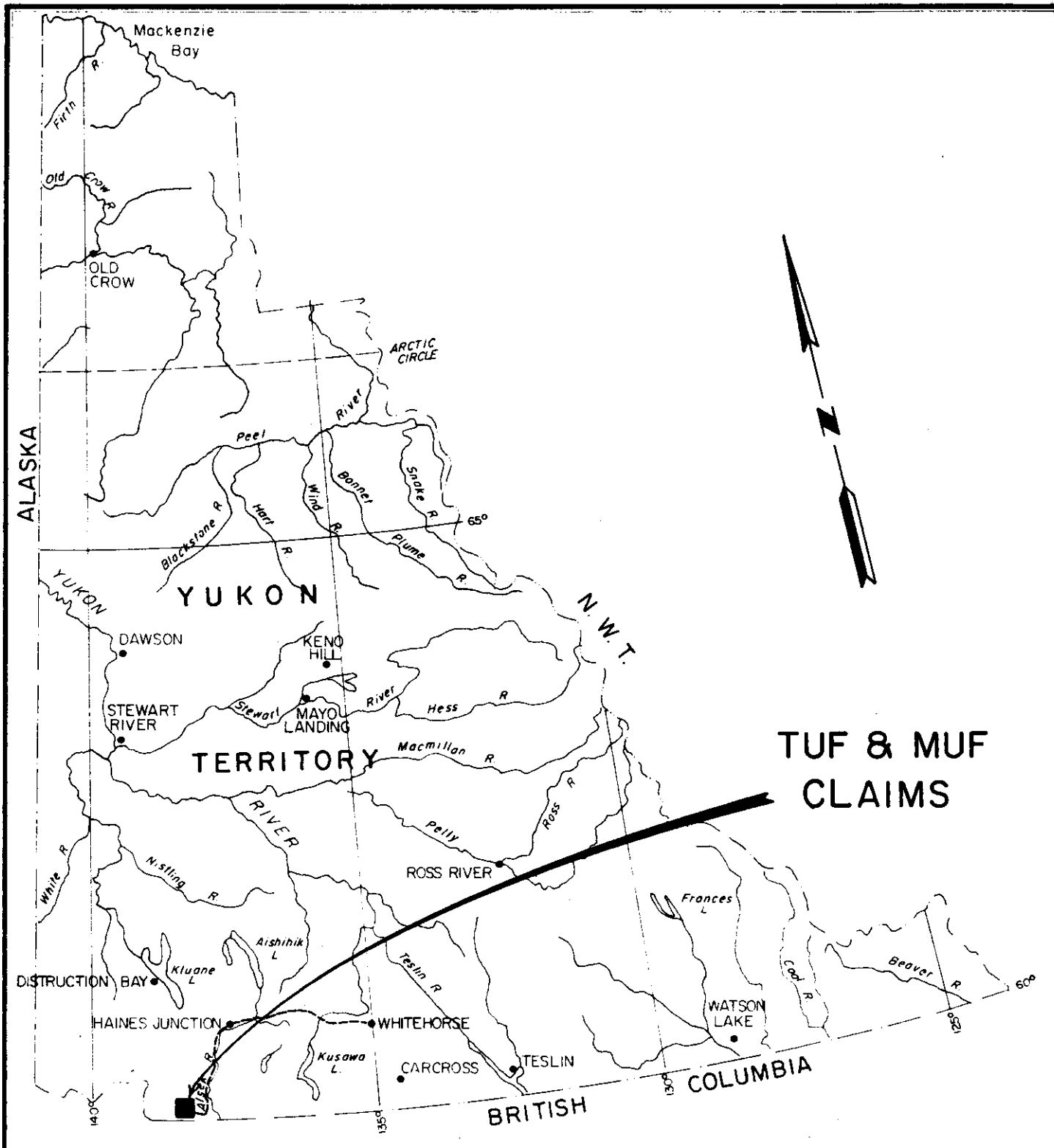
GENERAL

Two claim groups, the Tuf 1-48 inclusive and Muf 1-8 inclusive were located to cover silver-lead mineralization and copper mineralization respectively. The mineral claims are beneficially owned by Northern Horizon Resource Corporation of Vancouver, British Columbia.

During July and August, 1979, the writer was retained by the company to conduct a field exploration program on the Tuf and Muf mineral claims. The program consisted of geological mapping, geochemical sampling, geochemical sampling, establishing a geochemical picket line grid, hand trenching and road clearing. All costs incurred during this exploration program was paid by Northern Horizon Resource Corporation, the total being $28,418.43.

PROPERTY (Refer to Location Map of Tuf and Muf Claims, Figure No.2)

The following mineral claims, located in the Whitehorse Mining Division, N.T.S. 115 A/3E are owned by Northern Horizon Resource Corporation, Vancouver, British Columbia.



LOCATION MAP

TUF & MUF CLAIMS

SCALE 0 20 40 60 80 100 MILES

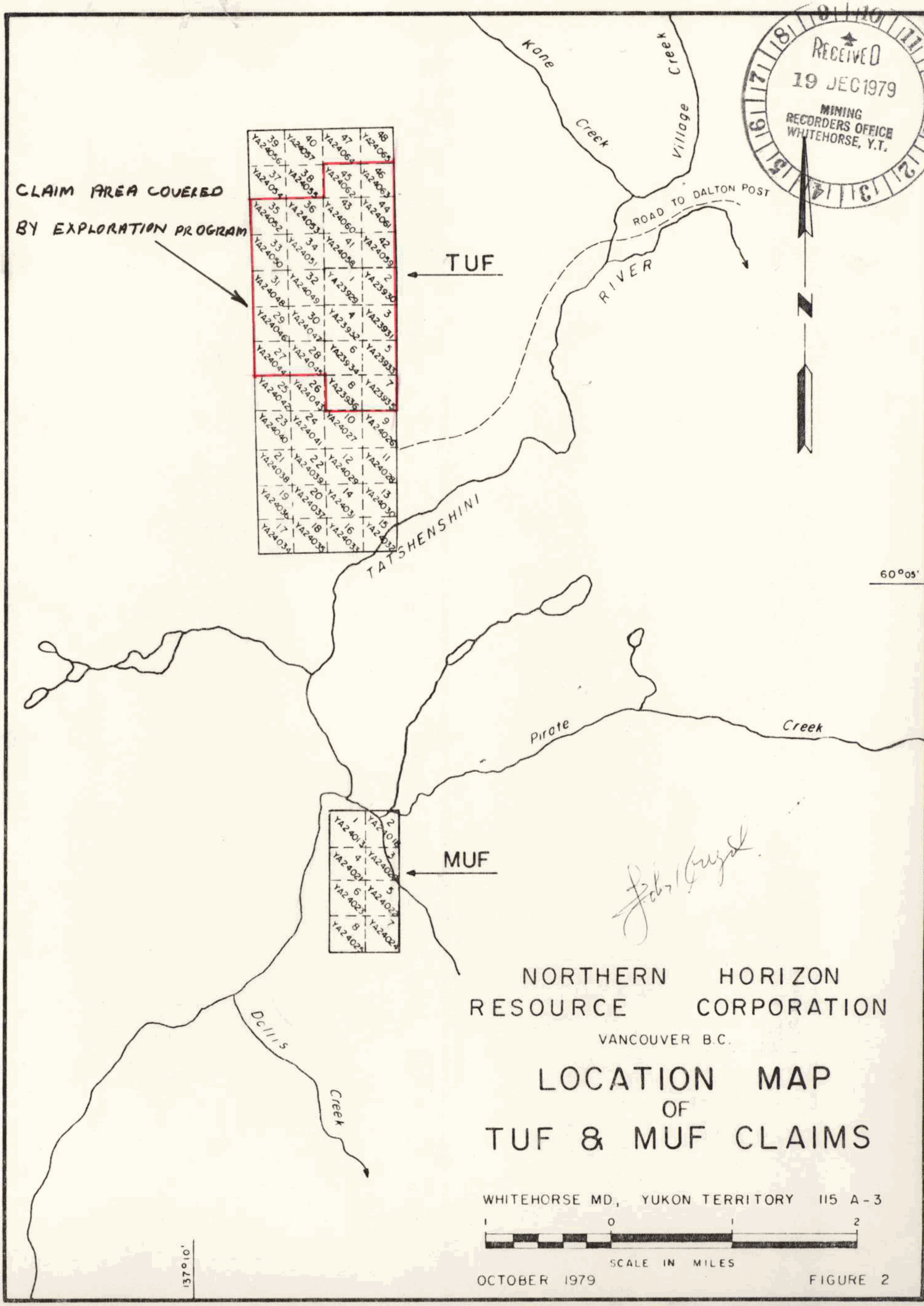
FIGURE 1

Mineral Claim	Record No.	Expiry Date
Tuf 1 - 8 inclusive	YA23929 to YA23936	January 11, 1980
Tuf 9 - 48 inclusive	YA24026 to YA24065	April 19, 1980
Muf 1 - 8 inclusive	YA24018 to YA24025	April 19, 1980

LOCATION AND ACCESS (Refer to Location Map, Figure No.1)
The Northern Horizon Resource Corporation property is located approximately eight miles west of Mile 108 off the Haines Road, near the abandoned settlement of Dalton Post. The Tuf showing is located approximately four miles north of the confluence of the Tatshenshini River and Pirate Creek. The Muf showing is situated immediately south of Pirate Creek.

The general topography is characterized by high mountains and low, broad valleys, typical of glaciated terrain. Elevations on the property range up to 5,500 feet a.s.l.

Access to the property is by way of an eleven mile tote road, suitable for four-wheel driven vehicles. This road leaves the Haines Junction to Haines (Alaska) Highway at Mile Post 108 travelling in a westerly direction to the property area. The nearest community to the property is Haines Junction, Y.T.



NORTHERN HORIZON RESOURCE CORPORATION
VANCOUVER B.C.

LOCATION MAP OF TUF & MUF CLAIMS

WHITEHORSE MD, YUKON TERRITORY 115 A-3

SCALE IN MILES

OCTOBER 1979

FIGURE 2

EXPLORATION PROGRAM

The field exploration program conducted on the Tuf and Muf mineral claims consisted of geological mapping, prospecting, geochemical sampling, rehabilitation of trenches, establishment of a geochemical grid and road clearing. The project was supervised by the writer and up to a total of five employees were retained during this program. A D-7 Cat was utilized to clear the access road to the property.

The geological mapping and prospecting was conducted on the claim area and adjacent areas off the claims. The mapping and prospecting on the property was done at scale 1" = 400 feet and 1" = 100 feet, and the reconnaissance mapping was carried out at scale 1" = 1/2 mile.

Geochemical soil sampling and rock sampling was carried out both on the claim area and on adjacent areas. On the showing area a geochemical picket-line grid was established with a 1600 foot base line, and grid lines at 100 foot intervals along the base line. Soil samples were taken at 100-foot stations along grid lines, and in more detail where required. To the north of the Tuf showing, contour geochemical sampling was conducted along 100-foot elevation contour lines with sample sites at

every hundred feet along these lines. To the south of the property, reconnaissance geochemical lines were sampled at 100 foot intervals.

The trenches on the main showings were rehabilitated, and all sulphide mineralization observed was mapped and sampled. The geochemical analysis and assaying was done by Bondar-Clegg and Company Ltd, Whitehorse, Y.T. and General Testing Laboratories, Vancouver, B.C. The geochemical soil samples were put in brown kraft sample bags, dried and sent for geochemical analysis for silver, lead, zinc and copper. Laboratory techniques consist of preparing samples by drying at $75^{o}C$, seiving to minus 80 mesh, digesting a .50 gram sample with dilute acqua-regia in a boiling water bath and then diluting solution to 10 mls with demineralized water. The concentration of the elements are determined by Atomic Absorption method from the solution with background correction for silver and lead. Location of sample sites with geochemical values are plotted on respective maps.

The scope of this exploration program was to explore the possibilities of a north or south extension to the silver-lead vein zone, and to confirm previous values obtained from sampling of this structure. The work associated with the copper sulphide showing was implemented in order to explore the

possibilities of a northern extension to the structure, and to check out the possibility of a porphyry copper system.

GEOLOGY AND SULPHIDE MINERALIZATION

(Refer to Property Geology Map, Fig.3)

REGIONAL GEOLOGY

The area is underlain by the northwest-southeast trending Triassic Mush Lake group of volcanics and sediments, which extend for 70 miles through the Dezadeash Map Area. They vary in width from 1½ to 8 miles, dipping to the northeast. The Mush Lake group is intruded by the highly differentiated Cretaceous Coast Intrusions which consist mainly of quartz monzonite - quartz diorite that trend northwest in the map area. Copper sulphide mineralization in the area occurs as fracture fillings in the Mush Lake Volcanics and as disseminations in the intrusives. Silver-lead mineralization occurs in association with quartz veins in an intrusive host rock.

LOCAL GEOLOGY

The silver-lead sulphide showing on the Tuf claims is underlain by intrusive rocks of variable composition and texture, ranging from granite to gabbro and texturally from fine to coarse grain. Variations in composition and texture can be observed over short distances measured in tens of feet. The predominant rock type encountered is a fine to medium grained hornblende diorite.

It is thought that more than one phase of intrusive activity has occurred, and the most recent intrusion consists of a less mafic rock. This is indicated by granitic material healing fractured and brecciated diorite, and granodiorite intrusives containing chunks of granite, suggesting possible assimilation.

Extreme tectonic activity has occurred in the immediate area of the showing. At least two major faults and several smaller faults dissect the intrusives. This is indicated by slickensides, by deeply incised gullies and continuous topographic depressions which offset and terminate dykes. The diorite intrusive itself is extremely fractured and jointed, usually dipping at 55° or greater.

Several dykes intruding the area are well exposed in the main canyon, north of the showing. These dyke swarms consist of three different dyke sets which are related to faulting and shearing in the area.

The youngest and least abundant is a dark green to black basalt dyke set. Another dyke set, having a more lenticular form, is a milk white medium grained, quartz feldspar leucocratic rock. Both dyke sets trend northwest, approximately paralleling the direction of the fault in the canyon. A dip attitude of 70° northwest was obtained from one of the basalt dykes.

The third dyke set, which is thought to be the oldest, is more numerous and continuous than the other dyke sets. Individual dyke of this set have variable composition, depending upon degree of alteration, and shearing present within the dyke rock. This dyke rock is most commonly described as an orangey grey weathered quartz feldspar hornblende porphyritic dyke. The mineralogy can also include calcite, blebular hematite, muscovite, rounded quartz "eyes", and relict limonite after hornblende. The rock of this dyke set is always strongly decomposed, and highly altered with the breakdown of feldspars to white clay minerals, possibly argillic alteration. This is particularly prevalent at the contact of the dyke rock with the diorite and with the silver-lead vein within the dyke rock.

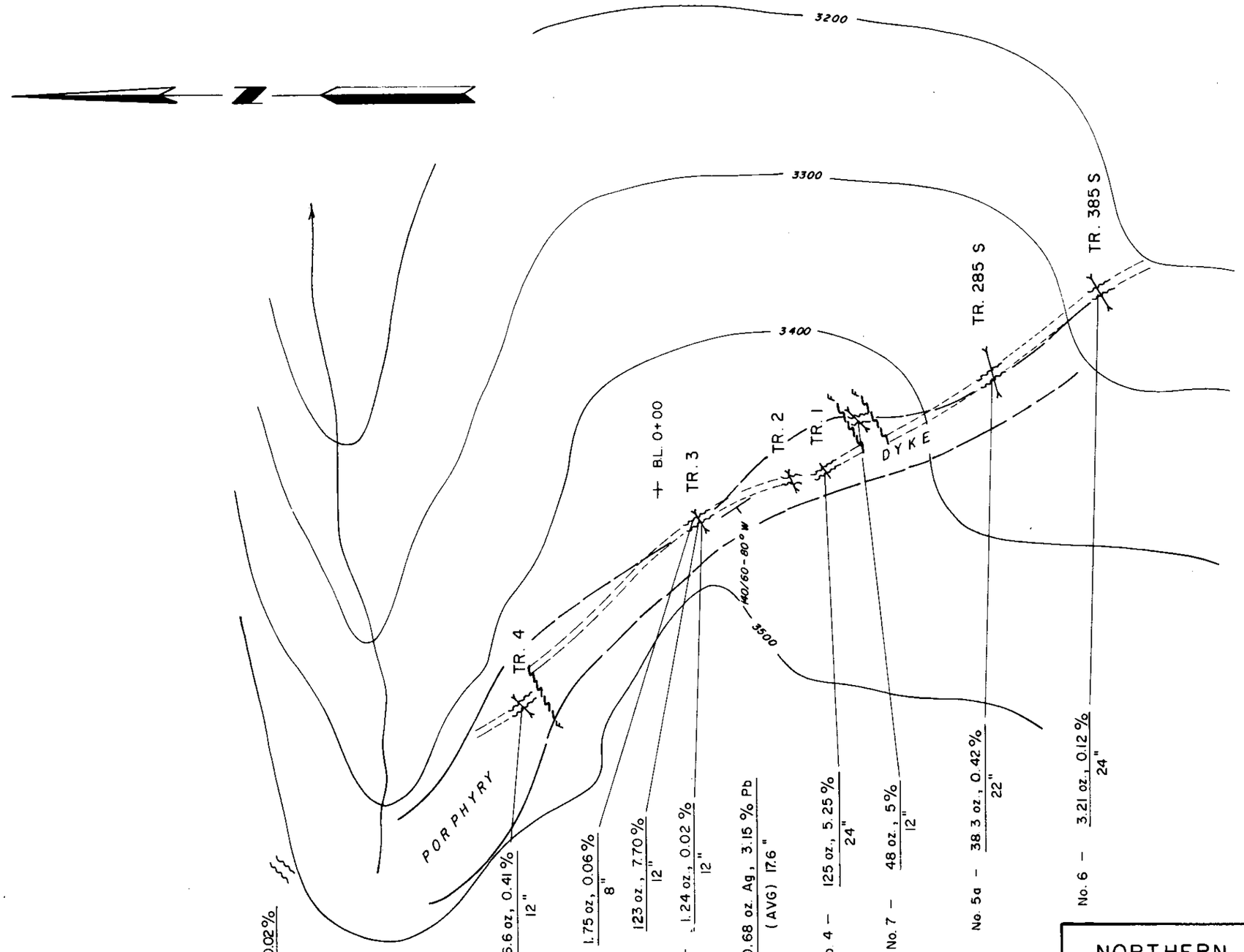
The dykes of this set trend in a general northwest-southeast direction, and dip 60-80^{o} southwest. These dykes are of variable thickness, averaging 40-50 feet and can be traced along strike up to one half mile. These dykes appear to be a favourable host rock for sulphide mineralization emplacement.

SULPHIDE MINERALIZATION (Refer to Assay Plan of Main Showing, Figure No. 6)

Sulphide mineralization is found localized within and along the walls of one of the older porphyritic dykes. The sulphide mineralization appears to be controlled by shearing and fracturing which occurred after the dyke rock was emplaced. The silver-lead sulphides are found associated with quartz veins, as fracture fillings and as disseminations in a highly altered quartz

feldspar hornblende porphyritic dyke rock. Sulphides identified are galena, sphalerite, pyrite and tetrahedrite-tennantite. The sulphide vein zone parallels the trend of the porphyritic dyke, and has been traced for over 600 feet along strike, with widths up to 2-3 feet. Chip sampling across the vein has given results ranging up to Ag 125 oz; Pb 5.25% across 24 inches in Trench 1. The vein zone appears to be terminated to the north by a fault, and possibly covered by overburden and talus to the south. Geochemical soil sampling has given anomalous values for silver and lead to the south of the vein zone.

No sulphide mineralization was seen in any of the other porphyritic dykes. However, a minor showing was discovered at the 3400 foot elevation in the canyon, immediately north of the main silver-lead showing. The minor showing consisted of a lensy quartz-feldspar vein up to 5 inches in width, which was traceable for a distance of approximately 40 feet. An argillic alteration zone is also present giving a width to this zone of about two feet. Minor galena mineralization was noted in a section of the vein material, and a sample taken across 5-6 inches assayed Ag 0.75 oz, Pb 0.02%, Zn 0.38%. The vein striking northeast and dipping 55^{o} northwest intrudes a coarse grained hornblende diorite.



LEGEND

VEIN ZONE, assumed

PORPHYRY DYKE OUTLINE

TRENCH WITH SAMPLE LOCATION AND NUMBER

23 oz., 2.5% / 12" — Ag oz., Pb % / width in inches

140/60-80 SW — STRIKE AND DIP OF VEIN ZONE

3300 — TOPOGRAPHIC CONTOUR LINE

F — FAULT

NORTHERN HORIZON RESOURCE CORP.
VANCOUVER B.C.

ASSAY PLAN OF MAIN SHOWING
TUF CLAIM GROUP

WHITEHORSE MINING DIVISION, YUKON TERRITORY

JOHN KRUZICK	OCTOBER 1979
SCALE : 1" = 100 FEET	FIGURE NO. 6

GEOCHEMICAL RESULTS

(Refer to Soil Geochemistry Map
Figure 4A and 4B)

The geochemical soil survey on the grid gave isolated high silver, lead, and zinc values, but no continuity of geochemical values was obtained. Anomalous values for silver, lead and zinc along Line 4 south - 1 east to 5 east are attributed to area contamination from the excavation of the trenches. Coincident high values for silver and lead obtained on Line 8 south were investigated, but lack of rock outcrop in the area prevented obtaining an explanation. Follow-up soil samples were taken between the grid lines, along Line 7+50 south and Line 8+00 south, but results of this sampling did not help confirm the previous high values. Although the geochemical grid sampling did not give any large anomalous areas, it should be kept in mind that overburden to the south is irregular and deep. This could be a contributing factor for the sporadic high geochemical values obtained south of the main showing area. There does not appear to be any faulting immediately south of the main showing which could have terminated the vein zone.

The reconnaissance contour geochemical survey to the north of the main showing area did not give any significant geochemical results. The highest values obtained was for sample R-2:

Ag 2.2 ppm, Pb 63 ppm, Zn 480 ppm, with a geochemical rock sample in the immediate area and as a diorite porphyritic dyke contact R.G.1: Ag 0.7 ppm, Pb 362 ppm, Zn 90 ppm. Follow-up on these values did not encountered any significant sulphide mineralization. (Refer to Property Geology Map Figure No. 3)

Reconnaissance geochemical sampling to the south of the main silver-lead showing gave high lead geochemical values over 600 feet with a number of coincident high silver, zinc and copper values. The area sampled is on the north side of the Tatshenshini River directly across the river from some rusty bluffs. The purpose of this sampling was to check out the continuity of sulphide mineralization from the Muf showing, and possibilities of low grade porphyry-type mineralization. Further geochemical prospecting is warranted to examine the possibility of widespread low grade sulphide mineralization in the area. (Refer to Reconnaissance Geology Map Figure No. 5.)

RECONNAISSANCE MAPPING & PROSPECTING

(Refer to Reconnaissance Geology Map, Figure No. 5)

Reconnaissance mapping and prospecting did not discover any new showings of significance during this program. Rusty cliff faces on the south wall of the Tatshenshini canyon were examined, but no significant sulphide mineralization was encountered. Geochemical soil sampling along the north side of the Tatshenshini River gave high values for lead, copper and zinc, but scarcity of outcrop did not permit locating the source of these values. Outcrops mapped one half mile north of the high geochemical values were found to contain very minor copper sulphide mineralization.

CONCLUSIONS AND RECOMMENDATIONS

The 1979 field exploration program has confirmed the existence of a high grade silver-lead bearing vein zone. The zone has been intermittently traced, where exposed, over a strike length of 600 feet with an average grade of 60.68 oz Ag and 3.15% Pb across 17.6". (Refer to Assay Plan, Figure No. 6). Soil sampling on the grid has not given any large anomalies which possibly could indicate the continuity of sulphides under the overburden. Reconnaissance soil sampling along the north side of the Tatshenshini River has given high geochemical values across 600 feet for lead with some high corresponding silver, copper and zinc values. Extensive overburden did not permit finding the source of these values.

Further exploration work on the main showing area should consist of Cat trenching and possibly an EM survey, using a Crone short-back instrument. Trenching should be conducted along the strike length of the main silver-lead vein to better expose the continuity of this zone. This would also permit surface bulk sampling of the sulphide mineralization below the zone of intense leaching. To the south of the vein zone at least two trenches should be cut in an east-west direction, one along Line 8 South,

between 1 east and 8 east and another along Line 12 south.

The entire grid should have a Crone shootback EM survey carried out on it with particular attention to the area south of the silver-lead vein. Any strong responses should be investigated by hand trenching, or Cat trenching.

Along the Tatshenshini River where high geochemical values from soil sampling were obtained, a detailed geochemical soil survey and prospecting should be implemented. Additional prospecting and mapping should also be conducted south of the Tatshenshini River.

Respectfully submitted,

John H. Kruzick, B.Sc.,
Geologist

October, 1979

REFERENCES

1. Northern Horizon Resource Corporation Report
P.H. Sevensma, Ph.D., P.Eng., March 15, 1979

2. G.S.C. Map 1019A, Dezadeash, Yukon Territory.

G.S.C. Memoir 268, E.D. Kindle, 1953.

3. Skyline Exploration Ltd (NPL) Report,
P.H. Sevensma, December, 1974

CERTIFICATE

I, John H. Kruzick, of 2000 Arbury Avenue, Coquitlam, British Columbia, do hereby certify:

1. I am a graduate geologist of the University of British Columbia (B.Sc., in Geology, 1969).

2. I am a member of the Geological Association of Canada.

3. I have been actively engaged in mineral exploration since my graduation.

4. I have been self employed as a geologist in the mineral exploration field since January, 1972.

5. The findings in this report are derived from data acknowledged under "References" and from personal observations made in the field during the course of the exploration program.

John H. Kruzick, B.Sc.,

October 15th, 1979

COST STATEMENT

Re: EXPLORATION PROGRAM ON TUF AND MUF MINERAL CLAIMS, YUKON MINING DIVISION, YUKON TERRITORY - July 1 to August 15/79

1.	SALARIES:		
	Project Manager, John Kruzick Coquitlam BC	$8,520	
	Geologist, Robert Yorkton, Duncan, B.C.	5,400	
	1 Prospector, Karl Swanson Whitehorse YT	640	
	1 Geochem Samplers, John McGuire Haines Junction YT	600	$15,160.00
2.	CAT RENTAL		1,721.20
3.	FIELD SUPPLIES, CAMP SUPPLIES		2,919.67
4.	TRANSPORTATION, AIR FARE, VEHICLE RENTAL FULL EQUIPMENT RENTAL		2,977.30
5.	ACCOMMODATION, MEALS, FOOD ETC.,		1,494.86
6.	DRAFTING, REPRODUCTION, SECRETARIAL		1,035.00
7.	GEOCHEMICAL ANALYSIS AND ASSAYING		2,110.40
8.	REPORT WRITING, DATA COMPILATION AND INTERPRETATION, MAP REPRODUCTION		1,000.00
			$28,418.43

Sworn before me at Vancouver BC
this 20th day of November 1979

Notary Public
A Notary Public in and for the
Province of British Columbia

John McGuire

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A ~~4K1~~2V1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Westridge Enterprises Ltd.
2000 Arbury Ave.
Coquitlam, B.C.

REPORT NO. A-49-55

DATE August 3, 1979

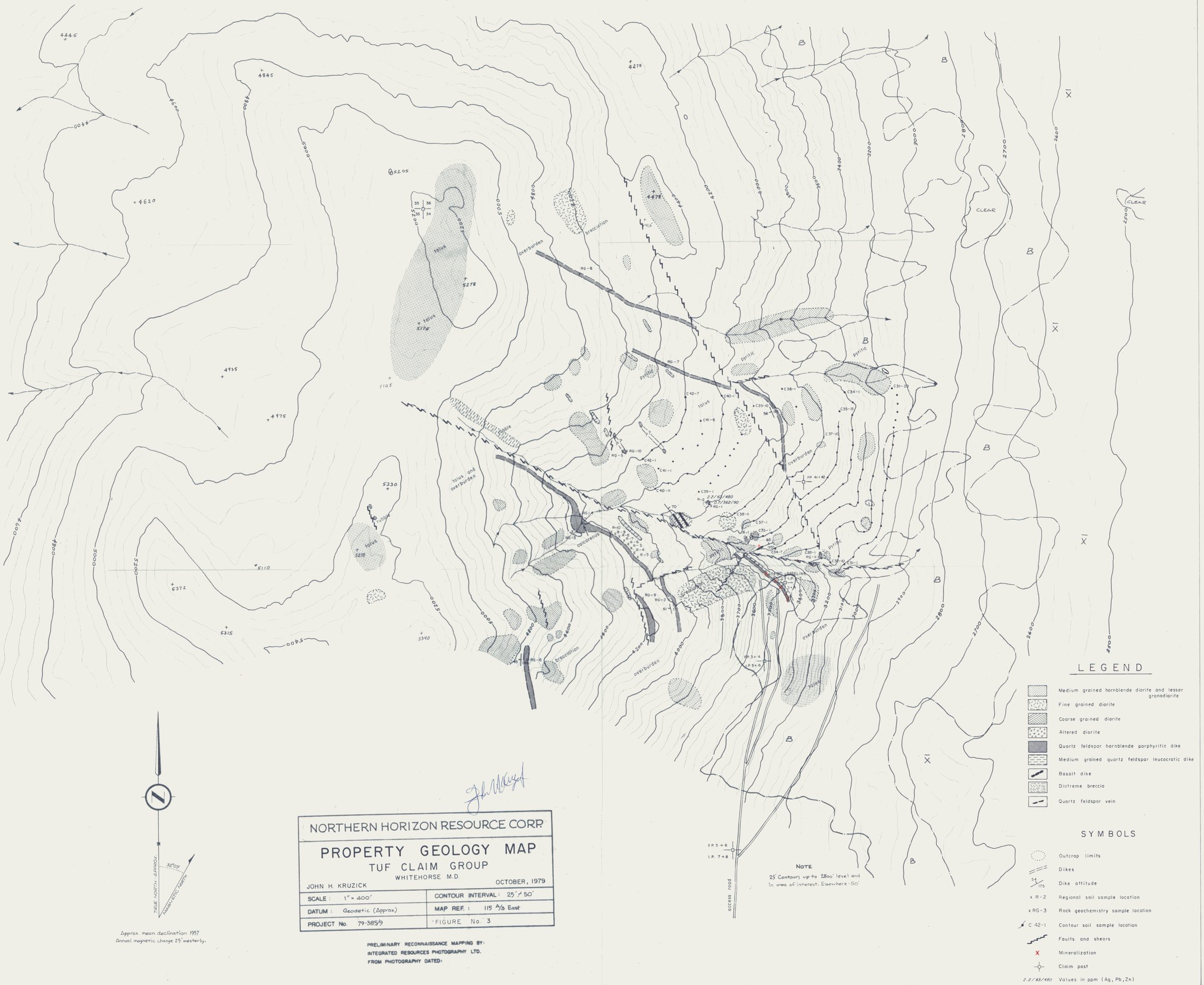
I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED		oz/ton Ag	% Pb							
Sa #1		123.0	7.70							
Sa #2		1.24	0.02							
Sa #3		1.75	0.06							
Sa #4		125.0	5.25							
Sa #5A		38.3	0.42							
Sa #5B		26.6	0.41							
Sa #6		3.21	0.12							
Sa #7		48.0	5.00							

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

BONDAR-CLEGG & COMPANY LTD.

Steven Scrupton



Approx. mean declination 1957
Annual magnetic change 2.5′ westerly.

NOTE

25′ Contours up to 2800′ level and
in area of interest. Elsewhere - 50′

NORTHERN HORIZON RESOURCE CORP.

PROPERTY GEOLOGY MAP
TUF CLAIM GROUP
WHITEHORSE M.D.

JOHN H. KRUZICK
OCTOBER, 1979

SCALE : 1″ = 400′	CONTOUR INTERVAL : 25′ & 50′
DATUM : Geodetic (Approx.)	MAP REF. : 115 A/3 East
PROJECT No. 79-385/9	FIGURE No. 3

PRELIMINARY RECONNAISSANCE MAPPING BY:
INTEGRATED RESOURCES PHOTOGRAPHY LTD.
FROM PHOTOGRAPHY DATED:

LEGEND

▒	Medium grained hornblende diorite and lesser granodiorite
▒	Fine grained diorite
▨	Coarse grained diorite
▒	Altered diorite
■	Quartz feldspar hornblende porphyritic dike
▤	Medium grained quartz feldspar leucocratic dike
▬	Basalt dike
▤	Diatreme breccia
▬	Quartz feldspar vein

SYMBOLS

○	Outcrop limits
═	Dikes
54/175	Dike attitude
x R-2	Regional soil sample location
x RG-3	Rock geochemistry sample location
● C 42-1	Contour soil sample location
≈	Faults and shears
x	Mineralization
⌖	Claim post
2.2/63/480	Values in ppm (Ag, Pb, Zn)

19 + 00 W | 18 + 00 W | 17 + 00 W | 16 + 00 W | 15 + 00 W | 14 + 00 W | 13 + 00 W | 12 + 00 W | 11 + 00 W | 10 + 00 W | 9 + 00 W | 8 + 00 W | 7 + 00 W | 6 + 00 W | 5 + 00 W | 4 + 00 W | 3 + 00 W | 2 + 00 W | 1 + 00 W

BASE LINE – Azimuth 000-180°

1 + 00 E | 2 + 00 E | 3 + 00 E | 4 + 00 E | 5 + 00 E | 6 + 00 E | 7 + 00 E | 8 + 00 E | 9 + 00 E | 10 + 00 E | 11 + 00 E

L 0 +00
L 1 + 00 S
L 2 + 00 S
L 3 + 00 S
L 4 + 00 S
L 5 + 00 S
L 6 + 00 S
L 7 + 00 S
L 7 + 50 S
L 8 + 00 S
L 8 + 50 S
L 9 + 00 S
L 10 + 00 S
L 11 + 00 S
L 12 + 00 S
L 13 + 00 S
L 14 + 00 S
L 15 + 00 S
L 16 + 00 S

I.P. TUF 1+2
I.P. TUF 3+4
F.P. 3+4
I.P. 5+6

Main Access Road

LEGEND

Ag in ppm.

- Background ---------- Ag < 4
- Possibly Anomalous ---- Ag 4 – 6
- Anomalous ---------- Ag > 6

Contours for Ag values

Gridline, Station with Ag values in ppm.

Claim Post

NORTHERN HORIZON RESOURCE CORPORATION
VANCOUVER B.C.

SOIL GEOCHEMISTRY FOR - Ag
TUF CLAIM GROUP

WHITEHORSE MINING DIVISION, YUKON TERRITORY N.T.S. 104 A/3

JOHN KRUZICK	OCTOBER 1979
SCALE : 1" = 100'	FIGURE No. 4a

19 + 00 W | 18 + 00 W | 17 + 00 W | 16 + 00 W | 15 + 00 W | 14 + 00 W | 13 + 00 W | 12 + 00 W | 11 + 00 W | 10 + 00 W | 9 + 00 W | 8 + 00 W | 7 + 00 W | 6 + 00 W | 5 + 00 W | 4 + 00 W | 3 + 00 W | 2 + 00 W | 1 + 00 W | BASE LINE – Azimuth 000 - 180° | 1 + 00 E | 2 + 00 E | 3 + 00 E | 4 + 00 E | 5 + 00 E | 6 + 00 E | 7 + 00 E | 8 + 00 E | 9 + 00 E | 10 + 00 E | 11 + 00 E

L 0 +00
L 1 + 00 S
L 2 + 00 S
L 3 + 00 S
L 4 + 00 S
L 5 + 00 S
L 6 + 00 S
L 7 + 00 S
L 7 + 50 S
L 8 + 00 S
L 8 + 50 S
L 9 + 00 S
L 10 + 00 S
L 11 + 00 S
L 12 + 00 S
L 13 + 00 S
L 14 + 00 S
L 15 + 00 S
L 16 + 00 S

I.P. TUF 1+2
I.P. TUF 3+4
F.P. 3+4
I.P. 5+6
Main Access Road

LEGEND

	Pb in ppm.
Background	< 30
Possibly Anomalous	30 – 60
Anomalous	60 – 120
Strongly Anomalous	> 120

Contours for Pb values with corresponding values for Zn in ppm.

A/A5 — Gridline, Station with Pb/Zn values in ppm.

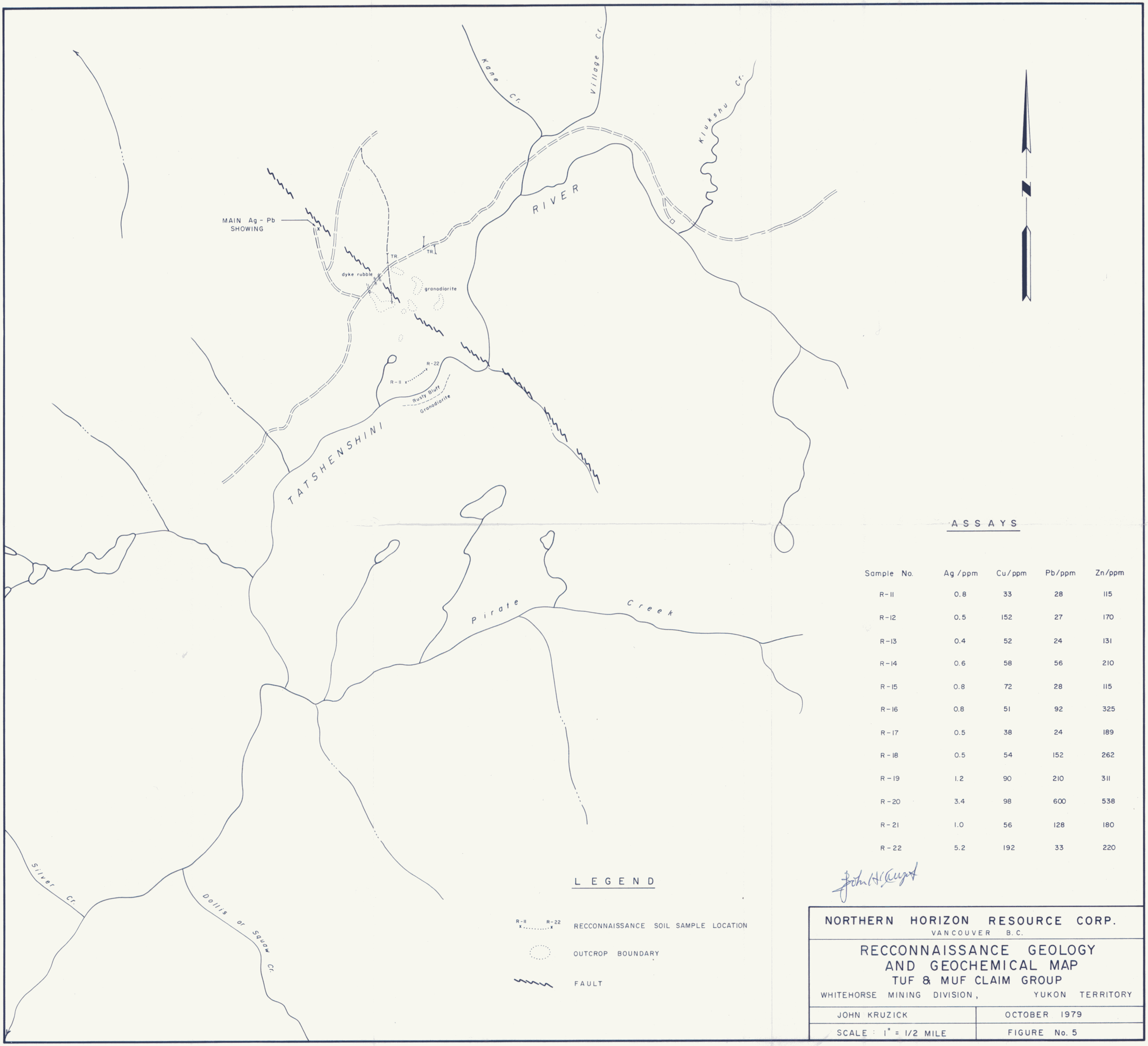
Claim Post

NORTHERN HORIZON RESOURCE CORPORATION
VANCOUVER B.C.

SOIL GEOCHEMISTRY FOR Pb/Zn
TUF CLAIM GROUP

WHITEHORSE MINING DIVISION, YUKON TERRITORY N.T.S. 104 A/3

JOHN KRUZICK	OCTOBER 1979
SCALE 1" = 100'	FIGURE No. 4b



ASSAYS

Sample No.	Ag /ppm	Cu/ppm	Pb/ppm	Zn/ppm
R-11	0.8	33	28	115
R-12	0.5	152	27	170
R-13	0.4	52	24	131
R-14	0.6	58	56	210
R-15	0.8	72	28	115
R-16	0.8	51	92	325
R-17	0.5	38	24	189
R-18	0.5	54	152	262
R-19	1.2	90	210	311
R-20	3.4	98	600	538
R-21	1.0	56	128	180
R-22	5.2	192	33	220

John H. Wright

LEGEND

R-11 x ..... x R-22 — RECCONNAISSANCE SOIL SAMPLE LOCATION

OUTCROP BOUNDARY

FAULT

NORTHERN HORIZON RESOURCE CORP.
VANCOUVER B.C.

RECCONNAISSANCE GEOLOGY AND GEOCHEMICAL MAP
TUF & MUF CLAIM GROUP

WHITEHORSE MINING DIVISION, YUKON TERRITORY

JOHN KRUZICK	OCTOBER 1979
SCALE : 1" = 1/2 MILE	FIGURE No. 5