

80-#634-#8447

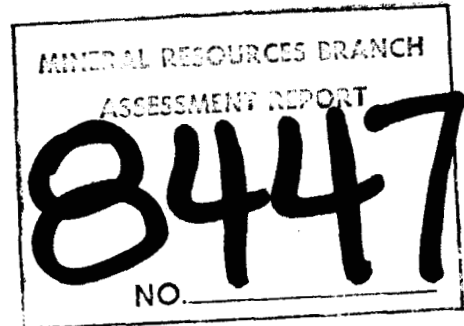
REPORT of 1980 EXPLORATION RESULTS  
HAGAS 1,3,4,5,6,16,76 to 80,81 and 84Fr.  
and  
HEM Mineral Claims

54°09'N, 127°01'E,  
N.T.S. 93L/3E

OMINECA MINING DIVISION

Owned by  
Winslow W. Bennett & Catre Industries Ltd.

Operated by  
Catre-Ben Joint Venture



PART  
1 of 2

Report by: E.S. Holt, P.Eng. (B.C.)

October, 1980

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### APPENDICES

Appendix A - Certificates of Assay (Bound in Report)

Appendix B - Report on Ground Magnetic and Electro  
Magnetic Survey on the Hagas Claims by  
Peter E. Walcott and Associates.  
(submitted under seperate cover)

### DRAWINGS IN POCKET

Drawing #1 1980 Exploration, (scale 1:20,000)  
Drawing #2 Geologic Plan, (scale 1:5,000)  
Drawing #3 Geochemical Results, (scale 1:5,000)

## REPORT OF 1980 EXPLORATION RESULTS

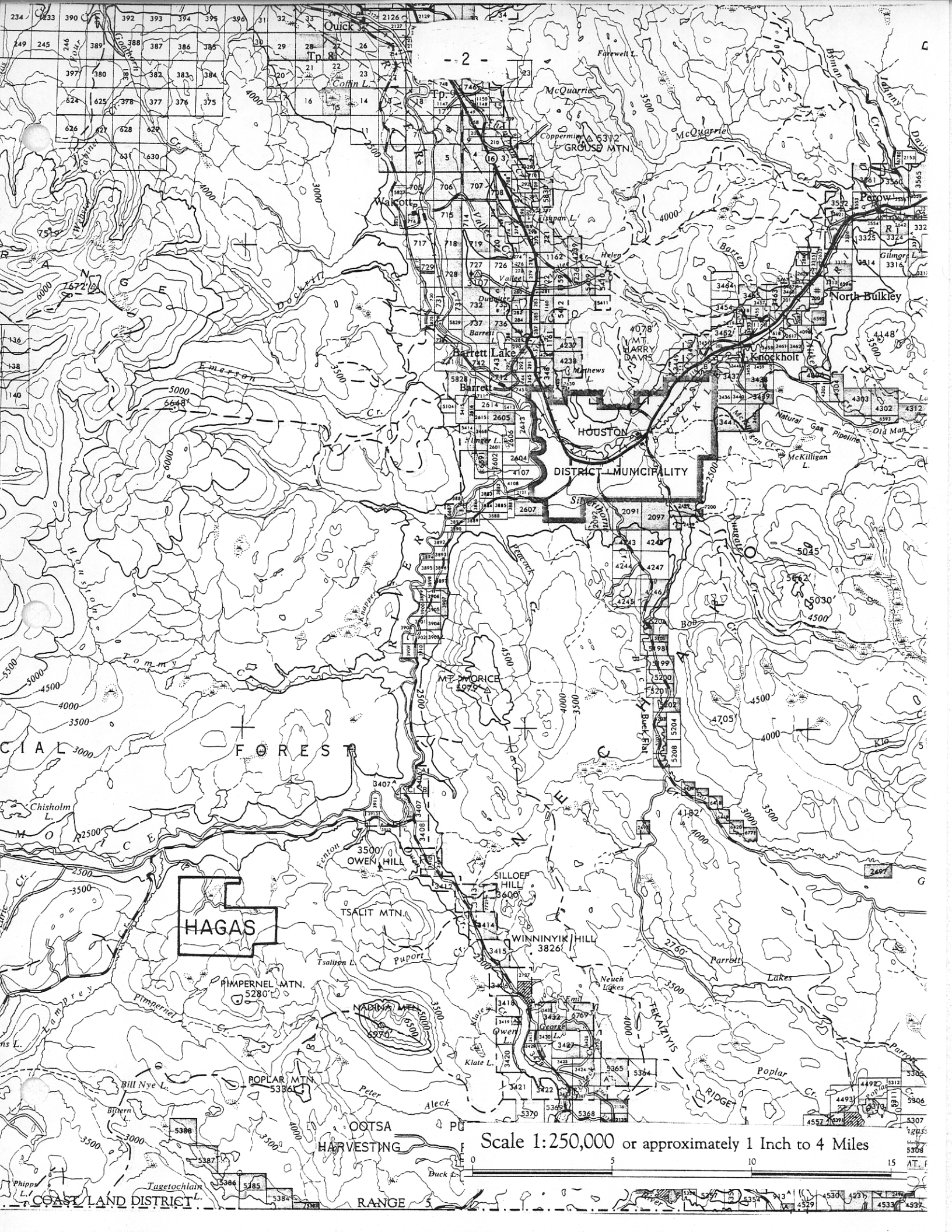
### INTRODUCTION

The Hagas property is located within the Omineca Mining Division in the central interior of British Columbia, approximately 20 miles southwest of the town of Houston. The geodetic coordinates are  $54^{\circ}09'N$  and  $127^{\circ}01'E$ .

The property is accessible from Houston via the Morice River road to Km 41.6 and then via a good logging road for 3 kms. The Hagas property is encountered just beyond Frypan Lake.

The central area of the Hagas property was initially staked during the early 1970's. The claims have been the subject of a number of exploration programs, as has the Code-Fen property immediately to the east. The soils, particularly on the Code-Fen claims, are anomalous in metal values and the geologic setting is similar in some respects to the Nadina and Sam Goosly properties to the east.

The 1980 exploration program was undertaken by Catre-Ben Joint Venture. The work consisted of an airborne E.M. survey, 42.1 kms. of line cutting and surveying, Max-Min



- 2 -

Scale 1:250,000 or approximately 1 Inch to 4 Miles

HAGAS

HOUSTON DISTRICT MUNICIPALITY

COAST LAND DISTRICT

RANGE

AT. F

and magnetometer geophysical surveys of the grid and the collecting of geochemical soil samples at 100 meter intervals along the grid system. The cut lines were also used as control for geologic mapping at a scale of 1:5,000.

The Airborne Geophysical survey was carried out by Aerodat Limited, while the follow up ground geophysics was done by Peter E. Walcott and Associates. Holt Engineering Ltd. carried out the geological mapping, line cutting and geochemical soil sampling. Most of the exploration work, undertaken in 1980, was done to fulfill recommendations resulting from the airborne geophysical survey.

The property consists of the following 102 claim units or fractions:

<u>Claim Name</u>	<u>Record Number</u>
Hagas 1,3,4 and 5	108688, 108690, 108691 and 108692
Hagas 6	108693
Hagas 16	108703
Hagas 76	507
Hagas 77-78	564 and 565
Hagas 79-80	1161 and 1162
Hagas 81 FR.	1163
Hagas 84 FR.	1164
Hem (12 units)	86

The physiography of the property consists of sub-rounded

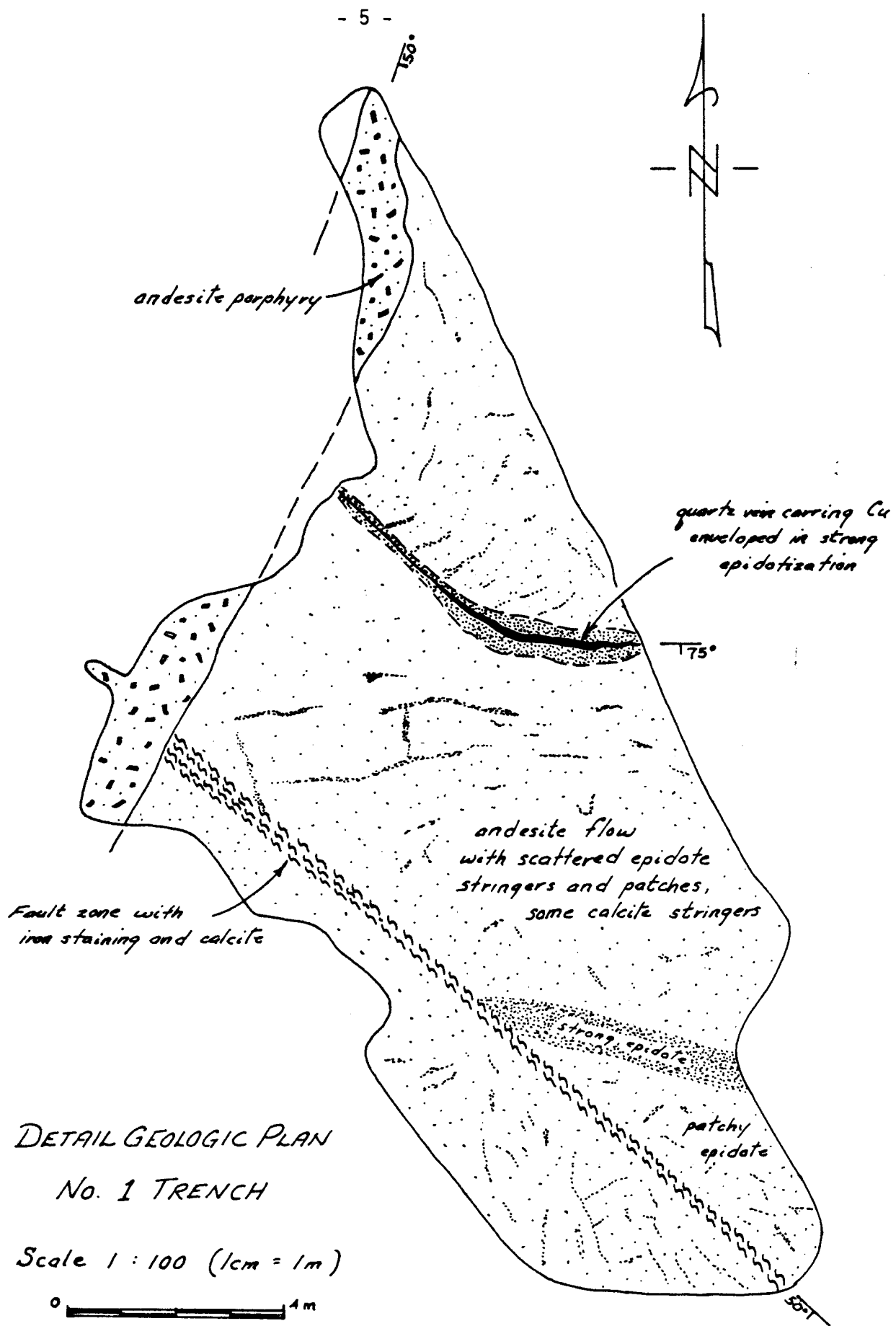
mountains and broad open valleys with one flat, swampy zone near the centre of the claim group. Approximately 30% of the property has been logged off while the remainder is covered by a moderate timber stand. Elevations range from 800 to 1300 meters above sea level.

### GEOLOGY

Rock exposures are scarce in the central and northern part of the property, but become reasonably abundant at higher elevations to the south and west. The overburden consists of dense glacial till with up to 15% rounded boulders. Although extensive, the till is often shallow as evidenced by the bedrock exposures which have resulted from logging road construction.

A significant portion of the property was mapped at a scale of 1:5,000, utilizing the cut survey lines for control. In addition, detailed mapping at scales of 1:100 and 1:1000 were carried out in the vicinity of the trenching program. The 1:5000 scale drawing is provided in the packet while the two detailed plans are on the following pages.

The youngest rocks on the property are the Buck Creek volcanics which are exposed at higher elevations to the south and west and to the northeast. They are fresh, dark green, aphanitic,



DETAIL GEOLOGIC PLAN

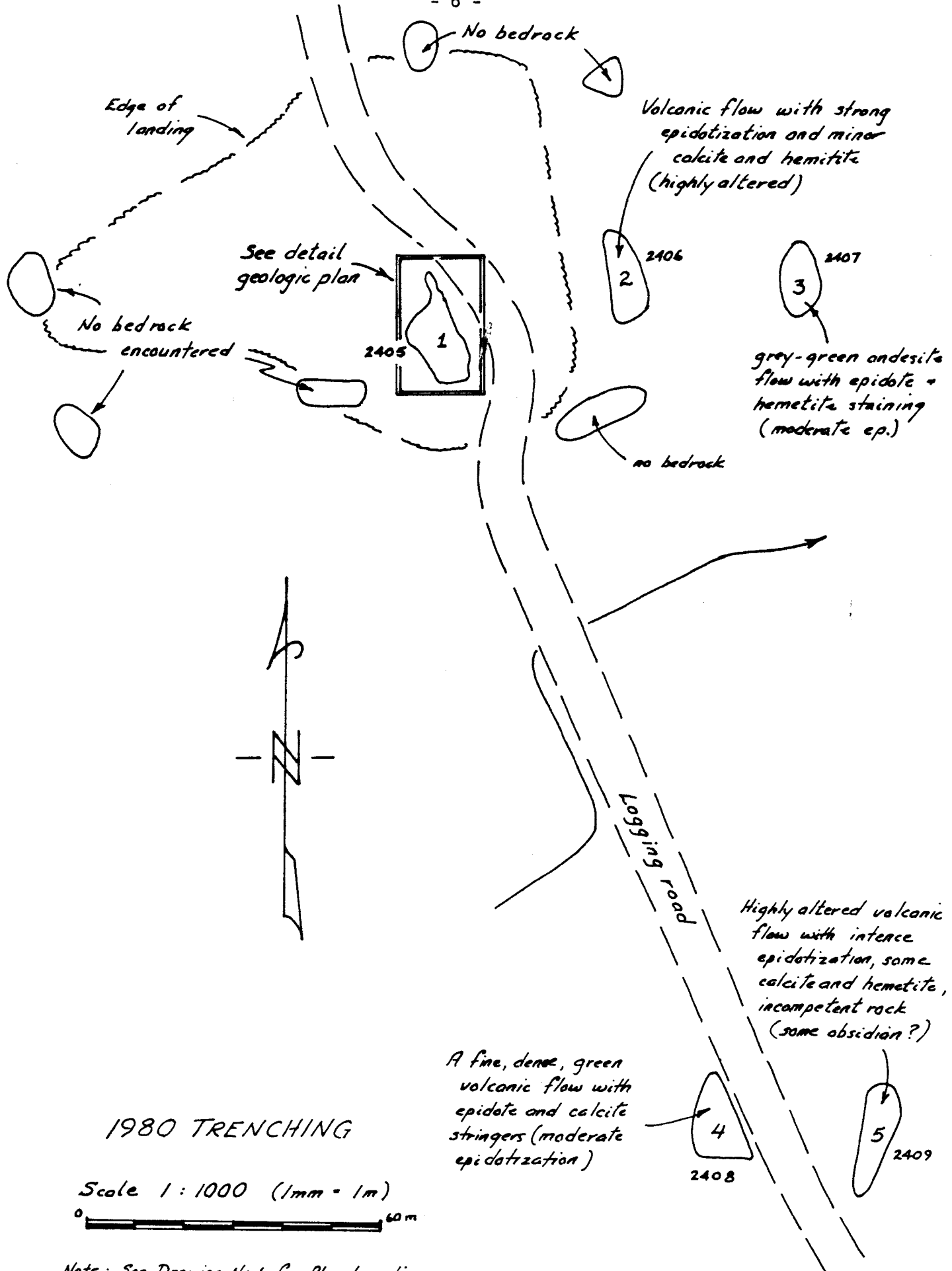
No. 1 TRENCH

Scale 1 : 100 (1cm = 1m)



Note: See drawings 1 + 4 for plan location  
relative to claim boundaries

Drawing No. 5



### 1980 TRENCHING

Scale 1:1000 (1mm = 1m)

Note: See Drawing No 1 for Plan Location



andesite flows with a characteristic brown weathering.

Underlying the Buck Creek volcanics are the Jurassic Hazelton Group. They occupy most of the central and northern part of the property and consist of a diverse suite of rock types. Maroon, grey and yellowish pyroclastics are common as are tuffs and andesitic or rhyolitic flows. Most of the rocks are moderately altered with some areas of intense epidotization and chloritization. Facies changes, particularly in the pyroclastic units are not uncommon, and bedding attitudes are difficult to obtain.

Sulphide mineralization, including pyrite, was notably lacking in the outcrops mapped. Minor disseminated chalcopyrite was observed in an andesitic flow in the vicinity of 32 + 50N, 22 + 20E and native copper was exposed in a small quartz stringer as shown in the detailed mapping. Samples of the mineralized quartz stringer assayed:

	<u>%Cu</u>	<u>Oz.Au</u>	<u>Oz.Ag</u>
Sample 2404	1.98	.09	.002
Sample 2322	2.03	.12	.002

Mapping and sampling of trenches in the vicinity of the quartz stringer indicated that the copper mineralization had a very limited extent. In the case of the showing uncovered, the copper values were concentrated in a single stringer not more than 20 cm. wide and several meters long.

It was enclosed in an envelope of intense epidotization within an andesite flow host.

Eleven bulldozer trenches were dug in the immediate vicinity of the showing, four of which encountered bedrock. They all revealed strong chlorite and epidote alteration but were lacking in quartz and copper mineralization. A Max-Min geophysical survey line previously established by Aquitaine Company of Canada passes 60 meters to the northeast of the showing. Anomalous conditions were not encountered in the vicinity of the trenches.

The only other economic mineralization encountered was the malachite staining previously reported along the northern contact of the small gabbro intrusive in the vicinity of 42N - 17E.

### GEOPHYSICS

The Airborne Geophysical survey was carried out during April of 1980. It employed the Aerodat helicopter E.M. system which involves a towed bird, slung 75' below the aircraft, in which the transmit and receive coils are housed, vertically and co-axially and 20' apart. The in-phase and out-of-phase components of the received horizontal secondary field are measured at the two operational frequencies 900 Hz

and 4200 Hz. These data are augmented, and to some extent controlled by concurrent measurements of the terrestrial magnetic field, and of aircraft altitude by radio-altimeter. In addition, the present surveying included a two parameter measure of the local V.L.F. field transmitted from NLK, Seattle, Washington at 18.6 kHz. The sensor system employed was the Herz TOTEM system supplying total field strength and vertical out-of-phase readings.

The survey itself was conducted on flight lines 250 m apart oriented due east-west. Mean terrain clearance was in the order of 250'A.G.L. for the aircraft or that is, 175' for the bird.

The Airborne Geophysical survey data was studied by Mr. John B. Boniwell of Excalibur International Consultants Ltd. He recommended that six anomalous features be ground investigated. The location of the airborne anomalies recommended for follow up work are illustrated on Drawing No. 1, enclosed in the pocket.

Mr. Boniwell's recommendations formed the basis for most of the exploration work carried out on the Hagas property during 1980. A total of 42.1 kms. of line cutting, surveying, soil sampling and ground geophysics were carried out in an effort to explore the selected anomalies.

The follow up geophysical surveys were carried out by Mr.P.E. Walcott of Peter E. Walcott and Associates. The results of his work are submitted under separate cover in a report entitled "Report on Ground Magnetic and Electromagnetic Survey on the Hagas Claims".

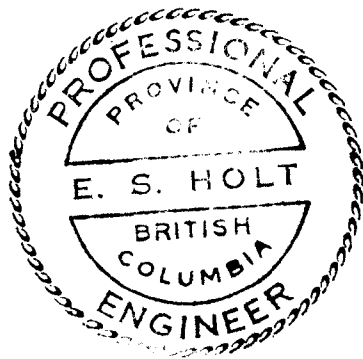
### GEOCHEMISTRY

A total of 387 soil samples were collected at 100 meter intervals along the survey grid. These samples were analysed for copper, lead and zinc with the results shown on Drawing No. 4 "Geochemical Results". The assay certificates are provided in the appendix, as is a description of the analysis method.

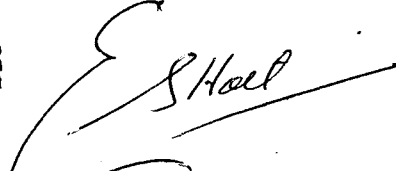
The soil samples were collected from the "B" horizon which was generally 10 to 20 cm. below surface. Heavier humus cover was encountered in the poorly drained south eastern section of the property.

As will be noted from the "Geochemical Results" drawing, the values obtained were generally consistent. A weakly anomalous area for zinc extends over several samples in the vicinity of 30N - 22E while copper highs are generally isolated and widely scattered. A general trend to slightly higher values in the northwest grid was noted.

As part of an initial reconnaissance program, 22 silt samples were collected and analysed by a heavy metal concentration method. These samples are numbered 2,4 and 6 to 25 inclusive. The sample locations are shown on Drawing No.1 while the results of the analysis are provided in the appendix.



Respectfully submitted,  
HOLT ENGINEERING LTD.

  
E.S. Holt, P. Eng.

*Oct 17, 1980*

ITEMIZED COST STATEMENT

SUMMARY

Personel	\$43,233.00
Geophysical Contractor	8,340.00
Camp Costs	7,900.00
Assaying	2,271.00
Trenching	680.00
Transportation	2,708.00
Field Supplies	7,818.00
Rentals	4,620.00
Communications	<u>251.00</u>
Total	\$77,821.00

DETAIL OF COSTS

Personnel

E.S. Holt (Consultant)

March 21,22 and 31	3.0 days
April 3, 8-10,28,29	5.0 days
May 6,7,15,16,19-24,27-29	13.0 days
June 12,16,18-23,26,27,30	11.0 days
July 2-4,7,10-13,17-20,29	13.0 days
Aug. 4,7-22,26,28	19.0 days
Sept. 8,17	2.0 days
Oct. 6-10,14-17	<u>9.0 days</u>

74 days @\$200 = \$14,800.00

E.C. Holt (Geologist)

April 3 and 21	1.5 days
May 29,30	2.0 days
June 16	1.0 day

July 9 and 10	2.0 days
Aug. 8, 18 and 25	2.5 days
Sept. 17	1.0 day
Oct. 15-17	<u>2.5 days</u>
	12.5 days @\$125 = \$1,563.00

T. Brooks (Supervisor)

May 16-24 and 26-31	13.5 days
June 1-5, and 13-30	21.5 days
July 2,3, 5-31	26.5 days
Aug. 1, 3-6, 14-31	<u>21.5 days</u>
	83.0 days @\$140 = \$11,620.00

A. Curcio (Technician)

May 20-23, 26-31	10.0 days
June 1-5, 13-26	17.5 days
July 2,3,5-17, 25-31	21.5 days
Aug. 1-30	<u>28.5 days</u>
	77.5 days @\$100 = \$7,750.00

T. O'Connell (Student)

June 24-28,30	6.0 days
July 2,3, 5-31	27.0 days
Aug. 1,3-22	<u>20.5 days</u>
	53.5 days @\$75 = \$4,010.00

J. Jones (Student)

July 2,3,5-19, 23-31	25.5 days
Aug. 1-22	<u>21.0 days</u>
	46.5 days @\$75 = \$3,490.00

Total Personnel for supervision, line cutting,  
surveying, geologic mapping, geochemical soil  
sampling, geophysical assistants and report  
preparation \$43,233.00

Geophysical Contractor

Peter E. Walcott and Associates

Geophysical operator and equipment

rental 8,340.00

Camp Costs

Establishing camp facilities and providing

Accommodation 316 man days @\$25 7,900.00

Assaying

As per invoices from Min-En Laboratory

18 Heavy metal Cu,Pb,Zn,Ag @\$22.00 = 396.00

387 Soil Samples Cu,Pb,Zn @\$3.85 = 1,489.95

Other misc. assaying 385.05

Total Assaying 2,271.00

Trenching

D-8 Tractor 9 hrs. @\$75.25 680.00

Transportation

Vehicle rentals, fuel, vehicle maintenance,

air fares etc. 2,708.00

Field Supplies

Lumber, survey stakes, tools, engineering

supplies and expense accts. 7,818.00

Rentals

Trailer unit, generators, power saws etc. 4,620.00

Communications

B.C. Tel 251.00

TOTAL EXPENDITURE \$77,821.00

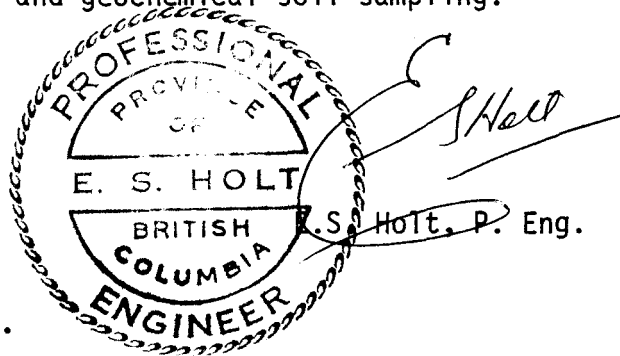


STATEMENT OF QUALIFICATIONS

I, Edward S. Holt of North Vancouver, British Columbia, do hereby certify:

1. That I am a geologist residing at 4091 St. Albans Avenue, North Vancouver, British Columbia.
2. That I am a Professional Engineer registered in the Province of British Columbia.
3. That I am employed by Holt Engineering Ltd., 4091 St. Albans Avenue, North Vancouver, British Columbia.
4. That I have practiced my profession for more than 20 years.
5. That I have personal knowledge of the Hagas property in the Omineca Mining Division, British Columbia, having personally spent 40 days on the property during 1980. I have familiarized myself with the surface rock exposures, I have examined existing drill core and I have supervised the line cutting and geochemical soil sampling.

October 15, 1980  
North Vancouver, B.C.



APPENDIX

# MIN-EN Laboratories Ltd.

705 WEST 15th STREET,  
NORTH VANCOUVER, B.C., CANADA V7M 1T2  
TELEPHONE (604) 980-5814

**RECEIVED**  
SEP 3 1980  
Ans'd

## ANALYTICAL REPORT

Project ..... Date of report Aug. 30/80.  
File No. 0-752 ..... Date samples received Aug. 26/80.  
Samples submitted by: Ed Holt  
Company: Holt Engrg.  
Report on: 121 soils ..... Geochem samples  
..... Assay samples

Copies sent to:

1. Holt Engrg., North Vancouver B.C.
2. ....
3. ....

Samples: Sieved to mesh -80 ..... Ground to mesh .....

Prepared samples stored  discarded

rejects stored  discarded

Methods of analysis: nitric, perchloric digestion.A.A. Analysis.

Remarks: .....

SPECIALISTS IN MINERAL ENVIRONMENTS

COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

FILE No. 0-752

PROJECT No.: \_\_\_\_\_

MIN - EN Laboratories Ltd.

DATE: Aug. 30,

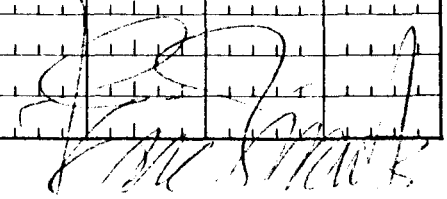
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

ATTENTION: Ed Holt

6	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	
Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb				
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
22N24E		20	14	85												
25E		12	13	78												
26E		22	19	88												
27E		14	15	94												
28E		15	14	69												
29E		14	12	61												
30E		7	7	73												
31E		17	13	64												
32E		7	5	54												
22N33E		8	6	50												
23N20E		43	12	95												
23E		15	9	107												
27E		22	12	74												
28E		20	10	67												
29E		10	11	80												
30E		16	9	47												
23N31E		18	9	78												
24N20E		42	17	90												
21E		13	13	55												
22E		44	21	85												
23E		10	12	72												
24E		12	18	59												
25E		7	12	45												
26E		13	13	119												
27E		16	13	90												
28E		10	13	56												
29E		21	14	96												
30E		40	19	86												
31E		7	11	41												
24N32E		15	16	65												

CERTIFIED BY



COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

FILE No. 0-752

PROJECT No.: \_\_\_\_\_

MIN - EN Laboratories Ltd.

DATE: Aug. 30,

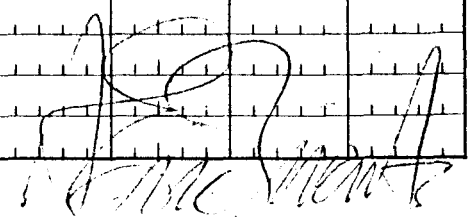
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

ATTENTION: Ed Holt

6	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
81	86	90	95	100	110	115	120	125	130	135	140	145	150	155	160
17N20E		64	16	99			•								(20 mesh)
21E		21	14	51			•								
22E		26	12	78			•								
23E		40	11	51			•								
24E		17	10	99			•								
25E		24	7	101			•								
26E		167	12	161			•								
27E		17	8	126			•								
28E		20	8	77			•								
29E		94	7	159			•								(20 mesh)
30E		20	6	88			•								
31E		21	12	115			•								
32E		16	4	68			•								
17N33E		28	9	73			•								
18N20E		14	8	68			•								
21E		17	5	90			•								
22E		16	6	107			•								
23E		19	5	87			•								
24E		23	5	95			•								
25E		49	6	110			•								(40 mesh)
26E		16	8	73			•								
27E		20	9	86			•								
28E		22	7	63			•								
29E		19	12	126			•								
30E		33	13	119			•								
31E		26	14	129			•								
32E		17	9	94			•								
18N33E		70	12	93			•								
20N20E		25	10	165			•								
20N21E		18	4	98			•								

CERTIFIED BY



COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-271

PROJECT No.: \_\_\_\_\_

MIN - EN Laboratories Ltd.

Non Mag  
Heavy Minerals

DATE: June 13

ATTENTION: Ed Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
HGS 1		210	84	132				.		94						
2		12	40	66				.		1						
3		202	80	148				.		45						
4		14	36	66				.		13						
5		182	132	304				.		132						
6		18	40	52				.		6						
7		12	44	108				.		12						
8		15	60	200				.		80						
9		12	34	72				.		2						
10		10	30	50				.		2						
11		12	36	50				.		1						
12		18	40	66				.		1						
13		8	42	52				.		1						
14		6	42	62				.		1						
15		12	36	60				.		5						
16		10	46	50				.		2						
17		10	38	52				.		1						
HGS 18		14	50	124				.		1						
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Handwritten box containing illegible text and a signature.

Handwritten signature: *Ed Holt*

(Magnetic separation and grinding)

CERTIFIED BY

COMP. Holt Engrg.

PROJECT No.: 108

ATTENTION: Ed Holt

**GEOCHEMICAL ANALYSIS DATA SHEET**

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

File No. 0-387

DATE: July 9

1980.

Sample Number	Mo ppm 86	Cu ppm 95	Pb ppm 100	Zn ppm 105	Ni ppm 110	Co ppm 115	Ag ppm 120	Fe ppm 125	Hg ppb 130	As ppm 135	Mn ppm 140	Au ppb 145	70 150	75 155	80 160	
19		16	13	5.7			0.7			3						
20		21	9	6.5			0.8			10						
21		14	8	5.1			0.8			8						
22		16	13	5.9			0.7			2.5						
23		16	11	6.1			0.9			5						
24		2.2	1.3	5.8			1.0			1						
25		14	6	4.1			0.7			3						
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COMPAN Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

FILE No. 0-752

PROJECT No.: \_\_\_\_\_

MIN - EN Laboratories Ltd.

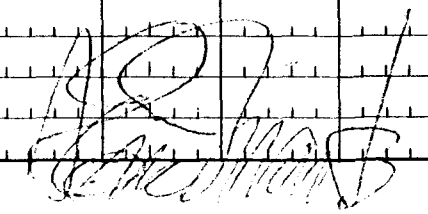
DATE: Aug. 28,

ATTENTION: Ed. Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample Number	6 81	10 86	15 95	20 100	25 105	30 110	35 115	40 120	45 125	50 130	55 135	60 140	65 145	70 150	75 155	80 160
	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb				
20N22E		18	12	49				•								
23E		32	14	57				•								
24E		31	17	65				•								
25E		26	13	55				•								
26E		19	13	81				•								
27E		16	12	94				•								
28E		18	13	59				•								
29E		13	9	55				•								
30E		23	12	70				•								
31E		13	9	50				•								
32E		22	9	47				•								
20N33E		40	12	82				•								
21N20E		31	10	49				•								
21E		19	9	68				•								
22E		27	16	54				•								
23E		22	12	97				•								
24E		20	13	47				•								
25E		26	18	95				•								
26E		26	20	83				•								
27E		23	17	193				•								
28E		22	18	57				•								
29E		25	19	138				•								
30E		19	20	89				•								
31		13	14	101				•								
32E		20	18	68				•								
21N33E		17	18	78				•								
22N20E		16	16	45				•								
21E		15	17	70				•								
22E		13	15	67				•								
22N23E		22	17	86				•								





COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

FILE No. 0-752

PROJECT No.: \_\_\_\_\_

MIN - EN Laboratories Ltd.

DATE: Aug. 30,

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

ATTENTION: Ed Holt

Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
24N33E		12	10	51												
25N20E		18	10	57												
21E		24	11	60												
22E		4	11	38												
23E		16	14	70												
24E		13	13	90												
25E		13	10	58												
26E		19	13	146												
27E		36	20	118												
28E		12	13	84												
29E		16	19	68												
30E		61	25	108												(20 mesh)
31E		22	19	80												
32E		7	12	58												
25N33E		16	14	62												
37N20E		20	19	96												
21E		12	21	46												(40 mesh)
22E		7	13	48												
23E		24	18	54												
24E		11	18	62												
25E		25	17	76												
26E		7	13	54												
37N27E		87	23	89												
38N20E		32	23	76												
21E		22	22	72												
22E		10	19	41												
23E		6	15	66												
24E		8	15	38												
25E		23	16	78												
38N26E		19	10	56												

CERTIFIED BY

*[Handwritten signature]*

COMPA. Holt Engrg.

PROJECT No.: \_\_\_\_\_

ATTENTION: Ed Holt

**GEOCHEMICAL ANALYSIS DATA SHEET**

**MIN - EN Laboratories Ltd.**

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

FILE No. 0-752

DATE: Aug. 29,

1980.

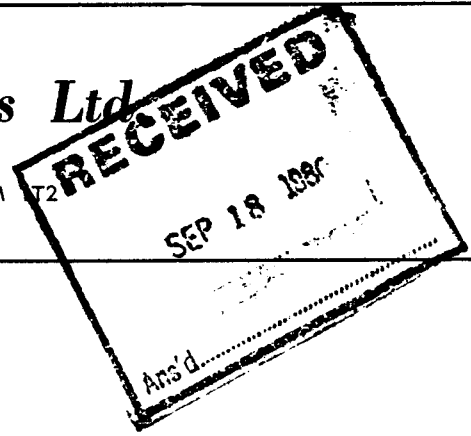
6		10		15		20		25		30		35		40		45		50		55		60		65		70		75		80	
Sample.	Mo	Cu	Pb	Zn	Ni	Co	Ag	Fe	Hg	As	Mn	Au																			
Number	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160															
38N27E		18	15	46				.																							

Handwritten signature and initials in the bottom right corner of the table.

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# MIN-EN Laboratories Ltd

705 WEST 15th STREET,  
NORTH VANCOUVER, B.C., CANADA V7M 1T2  
TELEPHONE (604) 980-5814



## ANALYTICAL REPORT

Project ..... 104 ..... Date of report ..... Sept. 18/80. ....  
File No. .... 0-839 ..... Date samples received ..... Sept. 13/80. ....  
Samples submitted by: ..... Ed Holt .....  
Company: ..... Holt Engrg. ....  
Report on: ..... 110 soils ..... Geochem samples  
.....  
..... Assay samples

Copies sent to:

1. .... Holt Engrg., North Vancouver, B.C. ....
2. ....
3. ....

Samples: Sieved to mesh ..... -80 soil ..... Ground to mesh .....

Prepared samples stored  discarded

rejects stored  discarded

Methods of analysis: ..... nitric, perchloric digestion. A.A. Analysis. ....

Remarks: .....

COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-839

PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 18

ATTENTION: Ed Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
4.3N7E		14	20	59												
8E		13	26	175												
9E		14	24	150												
10E		17	19	110												
11E		11	24	111												
12E		37	31	443												
13E		15	21	136												
14E		17	23	95												
4.3N15E		23	26	121												
4.4N7E		17	13	41												
8E		14	28	193												
9E		14	29	76												
10E		11	14	83												
11E		19	16	116												
12E		15	30	113												
13E		14	20	111												
14E		17	17	55												
4.4N15E		40	24	113												
4.8N7E		88	36	212												
8E		35	23	150												
9E		32	22	165												
10E		39	23	156												
11E		10	16	54												
12E		15	12	40												
13E		12	18	60												
14E		34	17	64												
4.8N15E		13	14	68												
4.9N8E		27	16	72												
9E		12	13	72												
4.9N11E		10	10	45												

**RECEIVED**  
 SEP 18 1980  
 ARS'D

*[Handwritten signature]*

CERTIFIED BY

COMP.

Holt Engrg.

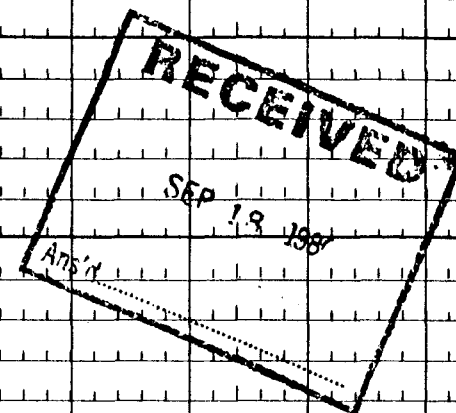
## GEOCHEMICAL ANALYSIS DATA SHEET

File No. 0-839PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 18ATTENTION: Ed Holt705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-58141980.

Sample. Number	6 Mo ppm	10 Cu ppm	15 Pb ppm	20 Zn ppm	25 Ni ppm	30 Co ppm	35 Ag ppm	40 Fe ppm	45 Hg ppb	50 As ppm	55 Mn ppm	60 Au ppb	65	70	75	80
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
4.9N12E		11	22	138				•								
13E		17	24	99				•								
14E		17	24	98				•								
4.9N15E		13	23	149				•								
5.0N7E		17	14	67				•								
8E		7	14	72				•								
9E		11	24	85				•								
10E		10	23	65				•								
11E		50	36	190				•								
12E		11	26	290				•								
13E		12	21	100				•								
14E		12	21	69				•								
5.0N15E		11	17	58				•								
4.7N7E		14	24	79				•								
8E		8	18	55				•								
9E		12	23	70				•								
10E		20	26	160				•								
11E		9	19	55				•								
12E		10	19	116				•								
13E		12	16	64				•								
14E		24	38	190				•								
4.7N15E		12	30	379				•								
3.4N20E		20	13	61				•								
21E		20	14	118				•								
22E		20	16	59				•								
23E		18	16	68				•								
24E		43	16	41				•								
25E		19	16	42				•								
26E		10	15	75				•								
3.4N27E		25	13	85				•								



(20 mesh)

CERTIFIED BY

COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-839

PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 18

ATTENTION: Ed Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
5.2N8E		8	6	42												
9E		9	14	46												
10E		18	22	58												
11E		12	14	80												
12E		10	13	50												
13E		10	17	44												
14E		10	17	82												
5.2N15E		48	38	134												
4.6N7E		8	33	85												
8E		15	22	100												
9E		16	19	64												
10E		20	20	150												
11E		16	34	210												
12E		12	18	110												
4.6N13E		94	36	145												
4.6N15E		15	17	78												
5.1N7E		8	9	39												
8E		11	10	70												
9E		9	10	74												
10E		18	10	92												
11E		10	15	72												
12E		12	14	76												
13E		17	15	104												
14E		12	18	106												
5.1N15E		120	48	380												
3.5N20E		25	15	59												
21E		14	10	56												
22E		15	14	58												
23E		16	13	58												
3.5N24E		24	17	66												

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SEP 18 1980  
Ans'd.....

*[Handwritten signature]*

CERTIFIED BY

COMP: Holt Engrg.

PROJECT No.: 104

ATTENTION: Ed Holt

**GEOCHEMICAL ANALYSIS DATA SHEET**

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

File No. 0-839

DATE: Sept. 18

1980.

6	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	
Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb				
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
35N25E		22	20	76												
26E		20	20	230												
35N27E		20	21	102												
36N20E		22	22	128												
21E		19	15	55												
22E		12	11	53												
23E		16	16	52												
24E		12	13	77												
25E		18	16	62												
26E		16	13	129												
36N27E		12	23	72												
45N7E		13	24	210												
8E		14	21	90												
9E		40	37	146												
10E		8	16	54												
11E		18	24	68												
12E		18	21	232												
13E		25	23	98												
14E		12	22	72												
45N15E		12	25	80												

**RECEIVED**  
 SEP 18 1980  
 Ahs'd.....

(20mesh)

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*[Handwritten Signature]*

# MIN-EN Laboratories Ltd.

705 WEST 15th STREET,  
NORTH VANCOUVER, B.C., CANADA V7M 1T2  
TELEPHONE (604) 980-5814

## ANALYTICAL REPORT

Project ..... 104 ..... Date of report ..... Sept. 16/80. ....  
File No. .... 0-772 ..... Date samples received ..... Sept. 5/80. ....  
Samples submitted by: ..... Ed Holt .....  
Company: ..... Holt Engrg. ....  
Report on: ..... 156 soils ..... Geochem samples  
.....  
..... Assay samples  
.....

Copies sent to:

1. .... Holt Engrg., North Vancouver, B.C. ....
2. ....
3. ....

Samples: Sieved to mesh ..... -80 ..... Ground to mesh .....

Prepared samples      stored       discarded   
                                 rejects      stored       discarded

Methods of analysis: ..... nitric, perchloric digestion. A.A. Analysis. ....

Remarks: .....  
.....  
.....

SPECIALISTS IN MINERAL ENVIRONMENTS



COMPAN. Holt Engrg.

PROJECT No.: 104

ATTENTION: Ed Holt

**GEOCHEMICAL ANALYSIS DATA SHEET**

MIN - EN Laboratories Ltd.

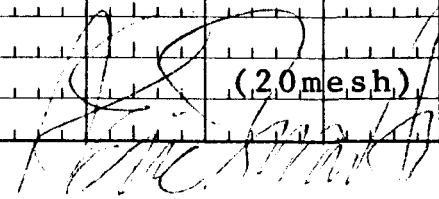
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

File No. 0-772

DATE: Sept. 16  
1980.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
19N20E		2.3	1.6	17.2				•								
21E		2.9	1.8	14.2				•								
22E		2.2	1.8	7.4				•								
23E		1.9	1.4	10.8				•								
24E		1.7	1.4	5.8				•								
25E		2.0	1.4	5.2				•								
26E		2.4	1.2	8.6				•								
27E		4.9	1.9	9.2				•								(40 mesh)
28E		1.2	.9	3.9				•								
29E		5.4	1.6	7.9				•								(20 mesh)
30E		1.4	1.4	4.7				•								
31E		2.2	1.1	10.6				•								
32E		3.1	1.2	6.1				•								
19N33E		2.1	1.5	10.0				•								
23N22E		1.4	1.5	4.6				•								
24E		1.8	1.7	5.2				•								
25E		4.0	1.9	8.6				•								(20 mesh)
26E		1.4	.9	4.4				•								
32E		1.6	1.2	4.7				•								
23N33E		5.8	1.4	13.9				•								(20 mesh)
26N15E		2.1	1.6	8.1				•								
16E		3.6	1.9	10.0				•								
17E		1.8	1.6	14.5				•								
18E		1.5	1.6	13.4				•								
19E		2.4	1.4	10.6				•								
20E		2.9	1.7	14.8				•								
21E		1.6	1.3	6.6				•								
22E		1.8	1.4	14.8				•								
23E		2.5	1.3	6.2				•								(20 mesh)
26N24E		1.4	1.2	5.2				•								

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COMPA. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-772

PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 16

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

ATTENTION: Ed Holt

1980.

Sample. 6	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	
Mo	Cu	Pb	Zn	Ni	Co	Ag	Fe	Hg	As	Mn	Au					
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppb					
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
26N25E		15	13	46				•								
26E		16	14	62				•								
27E		27	15	95				•								(40 mesh)
28E		9	13	43				•								
29E		13	16	42				•								
30E		20	18	94				•								
31E		14	14	39				•								
32E		15	12	42				•								
26N33E		19	15	75				•								
27N15E		18	12	81				•								
16E		55	21	106				•								
17E		40	24	114				•								
18E		22	16	54				•								
19E		13	9	59				•								
20E		16	15	68				•								
21E		49	19	65				•								
22E		12	12	48				•								
23E		15	16	74				•								
24E		14	11	38				•								
25E		18	14	71				•								
26E		15	14	44				•								
27E		15	16	51				•								
28E		23	16	98				•								(40 mesh)
29E		10	10	45				•								
30E		21	20	120				•								
31E		16	14	59				•								
32E		8	15	43				•								
27N33E		19	15	55				•								(40 mesh)
28N15E		22	17	123				•								
28N16E		15	15	49				•								

*[Handwritten signature]*  
*[Handwritten initials]*

CERTIFIED BY

COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-772

PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 16

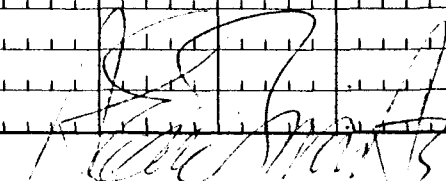
ATTENTION: Ed Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
28N17E		25	23	175												
18E		20	15	70												
19E		16	16	95												
20E		28	23	84												
21E		25	20	52												(20mesh)
22E		8	14	40												
23E		18	18	100												
24E		16	15	48												
25E		11	15	49												
26E		18	16	128												(20mesh)
27E		24	19	91												(40mesh)
28E		11	16	42												
29E		12	14	43												
30E		17	15	76												
31E		16	13	42												
32E		11	16	128												
28N33E		19	14	130												
29N15E		14	13	40												
16E		16	18	54												
17E		18	15	44												
18E		18	17	113												
19E		16	18	75												
20E		18	18	86												
21E		15	18	206												
22E		8	15	36												
23E		12	14	61												
24E		13	14	81												
25E		20	15	48												
26E		14	13	45												
29N27E		14	18	92												

CERTIFIED BY



COMP. Holt Engrg.

**GEOCHEMICAL ANALYSIS DATA SHEET**

File No. 0-772

PROJECT No.: 104

MIN - EN Laboratories Ltd.

DATE: Sept. 16

ATTENTION: Ed Holt

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

1980.

Sample. Number	6 Mo ppm	15 Cu ppm	20 Pb ppm	25 Zn ppm	30 Ni ppm	35 Co ppm	40 Ag ppm	45 Fe ppm	50 Hg ppb	55 As ppm	60 Mn ppm	65 Au ppb	70	75	80	
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
29N28E		13	17	39												
29E		17	13	46												
30E		12	14	45												
31E		12	16	93												
32E		41	21	53												
29N33E		23	20	69												
30N15E		7	16	45												
16E		10	17	40												
17E		10	16	44												
18E		13	15	50												
19E		13	17	68												
20E		29	24	28.6												(40 mesh)
21E		17	18	194												
22E		14	17	242												
23E		7	15	32												
24E		14	19	48												
25E		22	16	113												
26E		16	15	57												
27E		16	19	113												
28E		23	18	63												(20 mesh)
29E		17	16	68												
30E		14	17	114												
31E		14	16	57												
32E		21	18	80												
30N33E		12	16	45												
31N15E		17	20	10.2												
16E		11	15	80												
17E		15.7	16	40												(20 mesh)
18E		13	16	82												
31N19E		15	14	58												

*[Handwritten signature]*

COMP. Holt Engrg.

PROJECT No.: 104

ATTENTION: Ed Holt

**GEOCHEMICAL ANALYSIS DATA SHEET**

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2  
PHONE (604) 980-5814

File No. 0-772

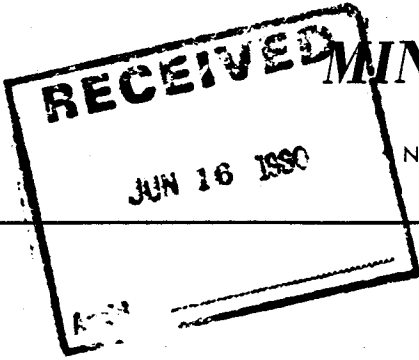
DATE: Sept. 16

1980.

Sample Number	6 Mo ppm	10 Cu ppm	15 Pb ppm	20 Zn ppm	25 Ni ppm	30 Co ppm	35 Ag ppm	40 Fe ppm	45 Hg ppb	50 As ppm	55 Mn ppm	60 Au ppb	65	70	75	80
81	86	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
31N20E		16	12	49				•								
21E		19	18	82				•								
22E		6	13	39				•								
23E		15	16	215				•								
24E		18	19	77				•								
25E		13	15	82				•								
26E		5	16	45				•								
27E		23	19	95				•								
28E		15	12	49				•								
29E		14	12	43				•								
30E		14	14	115				•								
31E		17	13	42				•								
32E		20	16	58				•								
31N33E		15	15	102				•								
32N20E		10	13	47				•								
21E		15	13	109				•								
22E		42	15	93				•								
23E		22	16	275				•								
24E		22	15	58				•								
25E		22	17	184				•								
26E		23	15	71				•								
27E		14	11	42				•								
28E		28	15	92				•								
29E		12	16	47				•								
30E		15	17	51				•								
31E		18	14	47				•								
32E		24	14	71				•								
32N33E		19	19	62				•								
33N20E		11	16	43				•								
33N21E		14	11	69				•								

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# MIN-EN Laboratories Ltd.

705 WEST 15th STREET,  
NORTH VANCOUVER, B.C., CANADA V7M 1T2  
TELEPHONE (604) 980-5814

## ANALYTICAL REPORT

Project ..... Date of report June 13/80.  
 File No. 0-271 ..... Date samples received June 10/80.  
 Samples submitted by: Ed Holt  
 Company: Holt Engrg.  
 Report on: 18 H.M. ..... Geochem samples  
 ..... Assay samples

Copies sent to:

1. Holt Engrg., North Vancouver, B.C.
2. ....
3. ....

Samples: Sieved to mesh ..... Ground to mesh .....

Prepared samples stored  discarded

rejects stored  discarded

Methods of analysis: Specific gravity flotation and routine  
geochem analysis.

Remarks: .....

# MIN-EN Laboratories Ltd.

705 WEST 15th STREET,  
NORTH VANCOUVER, B.C., CANADA V7M 1T2  
TELEPHONE (604) 980-5814

**RECEIVED**

SEP 11 1980

Ans'd.....

## ANALYTICAL REPORT

Project ..... 104 ..... Date of report ..... Sept. 10/80.....

File No. .... 0-772 ..... Date samples received ..... Sept. 3/80.....

Samples submitted by: ..... Ed Holt.....

Company: ..... Holt Engrg.....

Report on: ..... 5 rock ..... Geochem samples

..... 2 ..... Assay samples

### Copies sent to:

1. .... Holt Engrg., North Vancouver, B.C.....

2. ....

3. ....

Samples: Sieved to mesh ..... Ground to mesh ..... -80 geochem  
-100 assay

Prepared samples stored  discarded

rejects assay stored  discarded  geochem

Methods of analysis: ..... Geochem-nitric, perchloric digestion. A.A. Analysis

Assay-Cu, Ag-Acid digestion-chemical analysis. Au-Fire and  
A.A. Analysis Finish.

Remarks: .....

SPECIALISTS IN MINERAL ENVIRONMENTS







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## ANALYTICAL REPORT

Project ..... 104 ..... Date of report ..... July 25/80.

File No. .... 0-507 ..... Date samples received ..... July 21/80.

Samples submitted by: ..... Ed Holt .....

Company: ..... Holt Engrg. ....

Report on: ..... Geochem samples .....

..... 2 ..... Assay samples

Copies sent to:

1. .... Holt Engrg., North Vancouver, B.C. ....

2. ....

3. ....

Samples: Sieved to mesh ..... Ground to mesh ..... -100 .....

Prepared samples stored  discarded

rejects stored  discarded

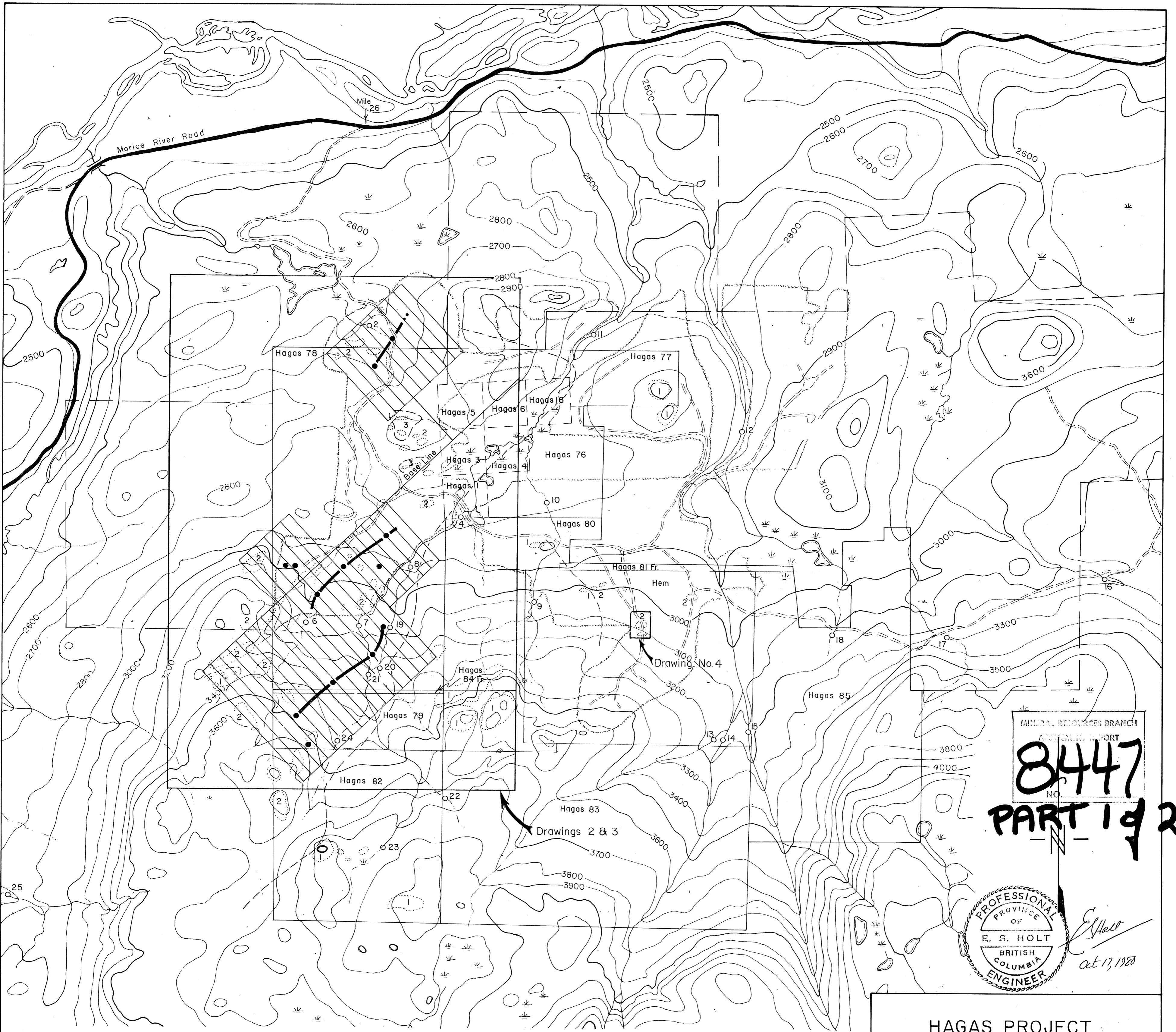
Methods of analysis: ..... Cu, ~~Pb~~ Zn, Ag-Acid digestion-chemical analysis. ....

..... Au-Fire and A.A. Finish. ....

Remarks: .....

SPECIALISTS IN MINERAL ENVIRONMENTS

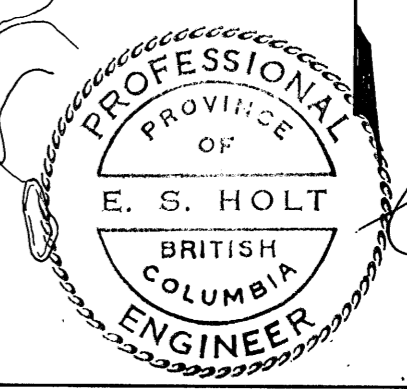




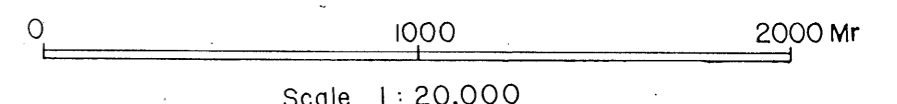
- 15 Silt sample location and sample number
- — Airborne geophysical conductor
- 1980 control grid outline
- - - Geologic Contact
- Hagas claim group
- Outcrop area
- 1 Buck Creek Volcanics
- 2 Hazelton Volcanics
- 3 Gabbro Intrusive

MINERAL RESOURCES BRANCH  
 REPORT NO. **8447**

**PART 192**



**HAGAS PROJECT  
 1980 EXPLORATION**



**GEOLOGIC LEGEND**

**BUCK CREEK VOLCANICS**

- 1 Fresh, fine grained brownish-green andesite

**HAZELTON GROUP**

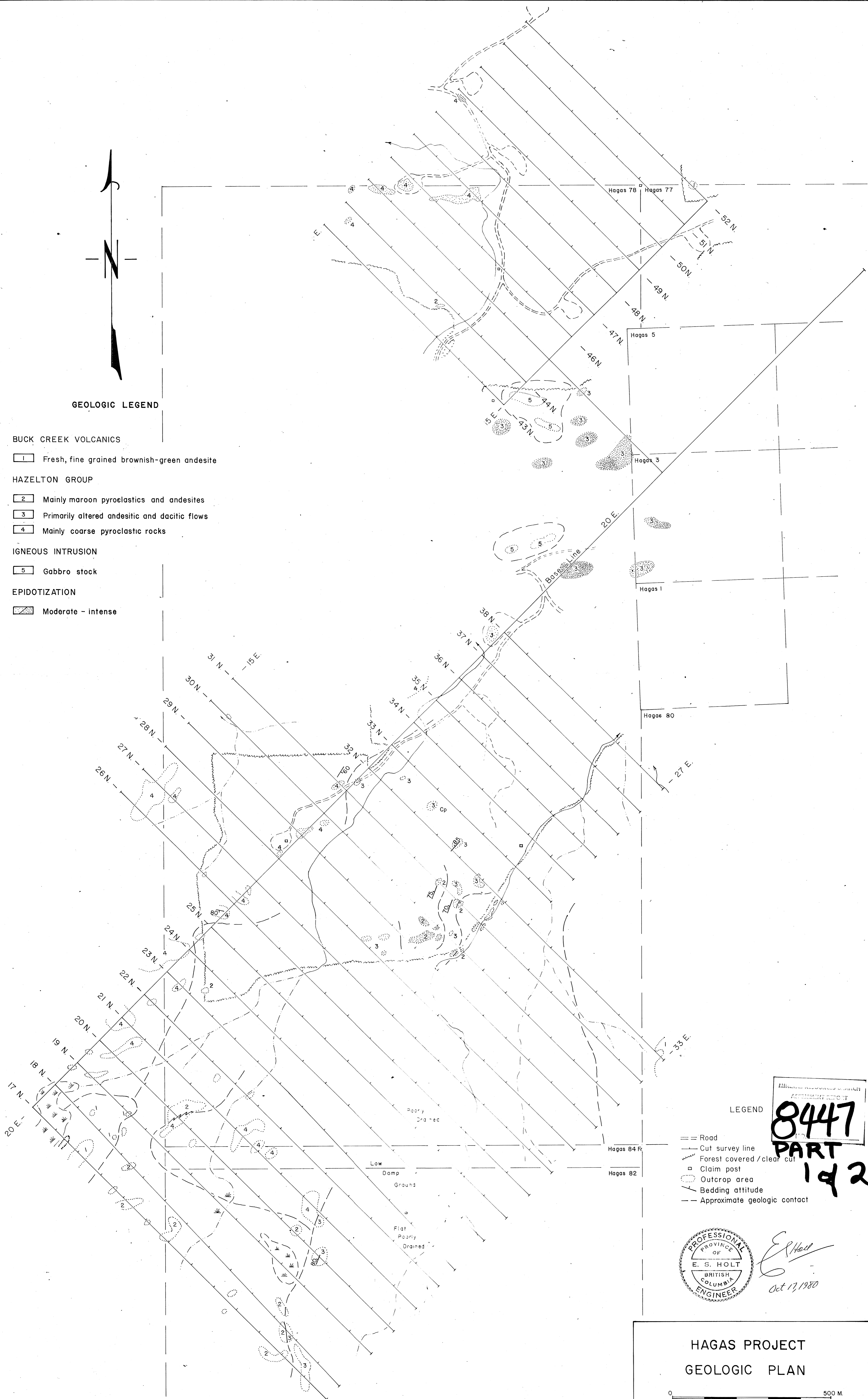
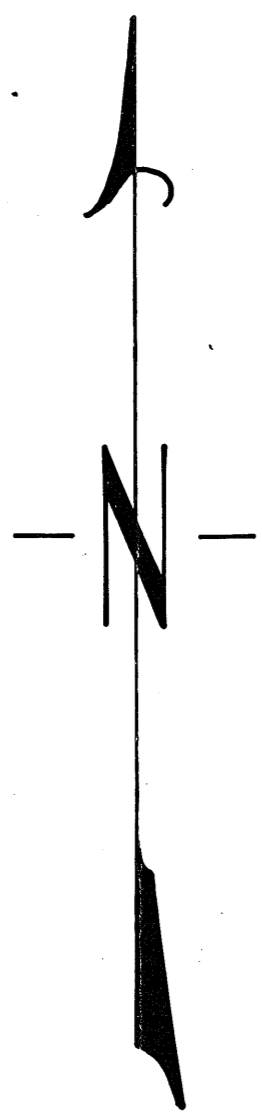
- 2 Mainly maroon pyroclastics and andesites
- 3 Primarily altered andesitic and dacitic flows
- 4 Mainly coarse pyroclastic rocks

**IGNEOUS INTRUSION**

- 5 Gabbro stock

**EPIDOTIZATION**

- Moderate - intense



**LEGEND**

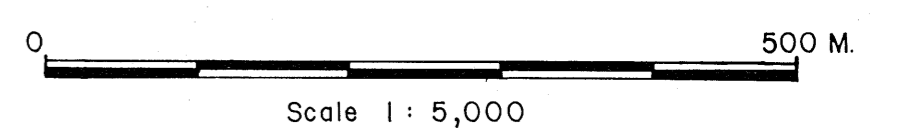
- == Road
- - - Cut survey line
- Forest covered / clear cut
- Claim post
- Outcrop area
- ~ Bedding attitude
- - - Approximate geologic contact

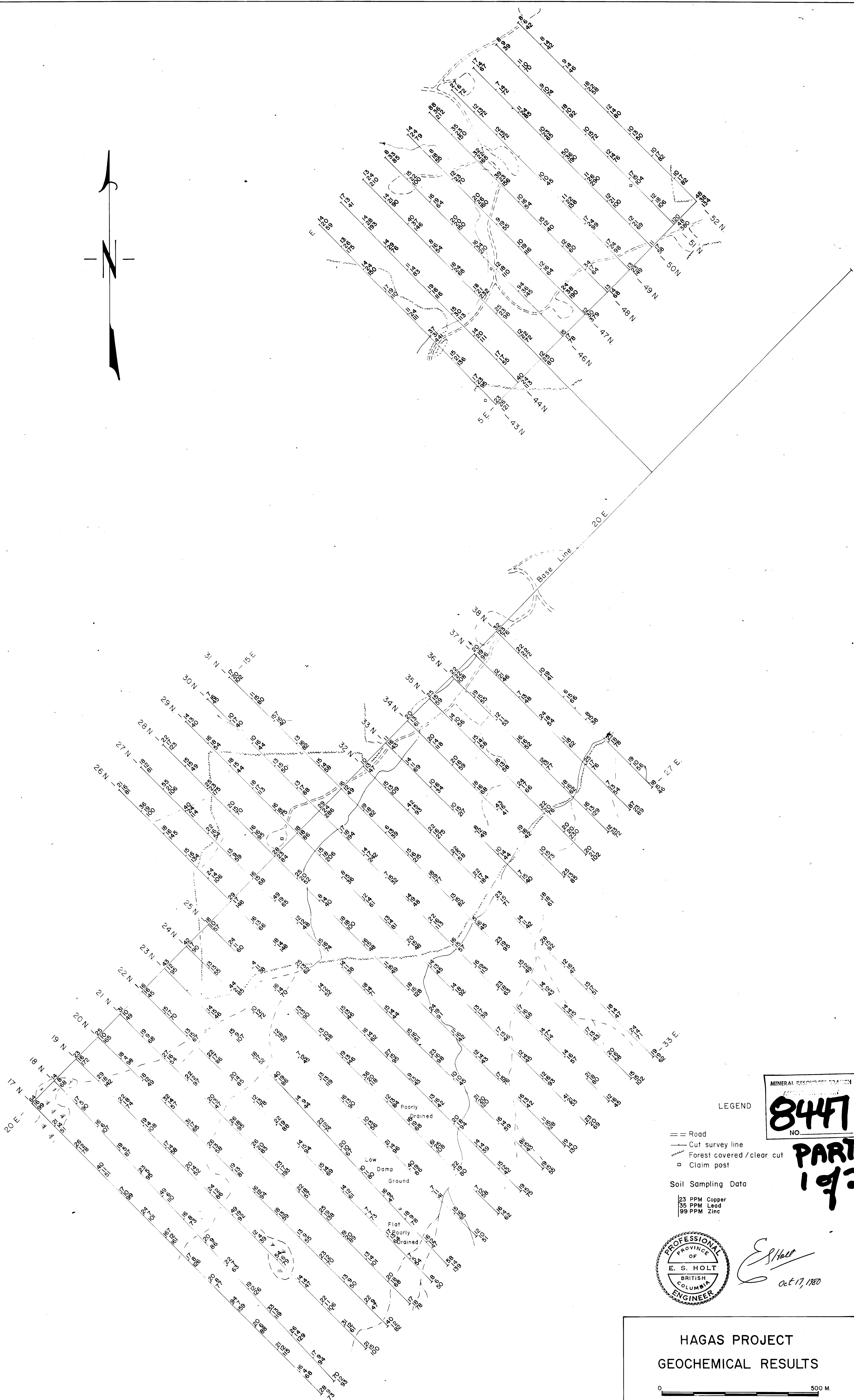
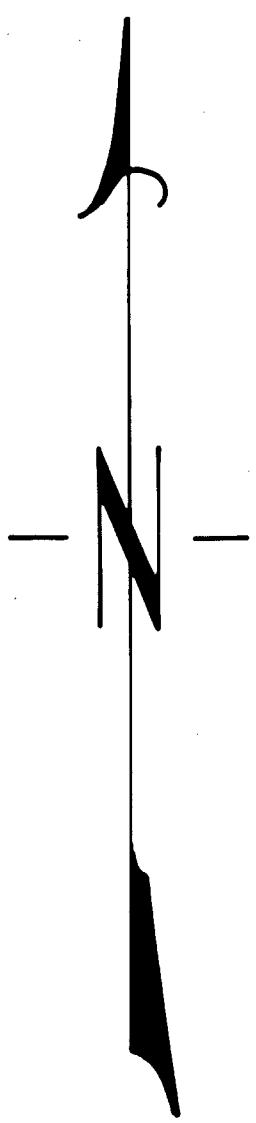
8447  
PART  
192



*E. S. Holt*  
Oct 17, 1980

**HAGAS PROJECT  
GEOLOGIC PLAN**



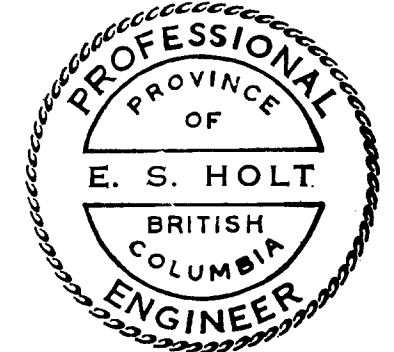


MINERAL RESOURCES BRANCH  
8447  
NO.

PART  
192

LEGEND

- == Road
  - - - Cut survey line
  - Forest covered / clear cut
  - Claim post
- Soil Sampling Data
- 23 PPM Copper
  - 35 PPM Lead
  - 99 PPM Zinc



*E. S. Holt*  
Oct 17, 1980

HAGAS PROJECT  
GEOCHEMICAL RESULTS

