GEOLOGICAL AND GEOCHEMICAL REPORT

HOG PROPERTY

Lillooet Mining Division

92 J/15E and 92 J/16W

Lat. 50°54'N
Long. 122°29'W

Owned and Operated by

Utah Mines Ltd.

Tom Pollock, M.Sc.A
Utah Mines Ltd.

Vancouver, B.C.
January 1984

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SUMMARY

The Hog claims are located on Hog Creek in the Shulaps Range, 185 kilometers northeast of Vancouver, B.C. The property was staked as a gold prospect during the months of April and August 1983. Sediments and volcanics of the Bridge River group underlie most of the property and are intruded by a dacitic porphyry stock. The main area of interest was centred around the site of an old adit near the contact of the porphyritic stock intruding the sediments. A 1925 report on the property, then known as the Shulap group, states that a sample taken across seven feet of a vein assayed 0.8 oz/ton gold and 2 oz/ton silver. Unfortunately what appeared to be the entrance to the adit was caved and so the validity of the assay could no be verified.

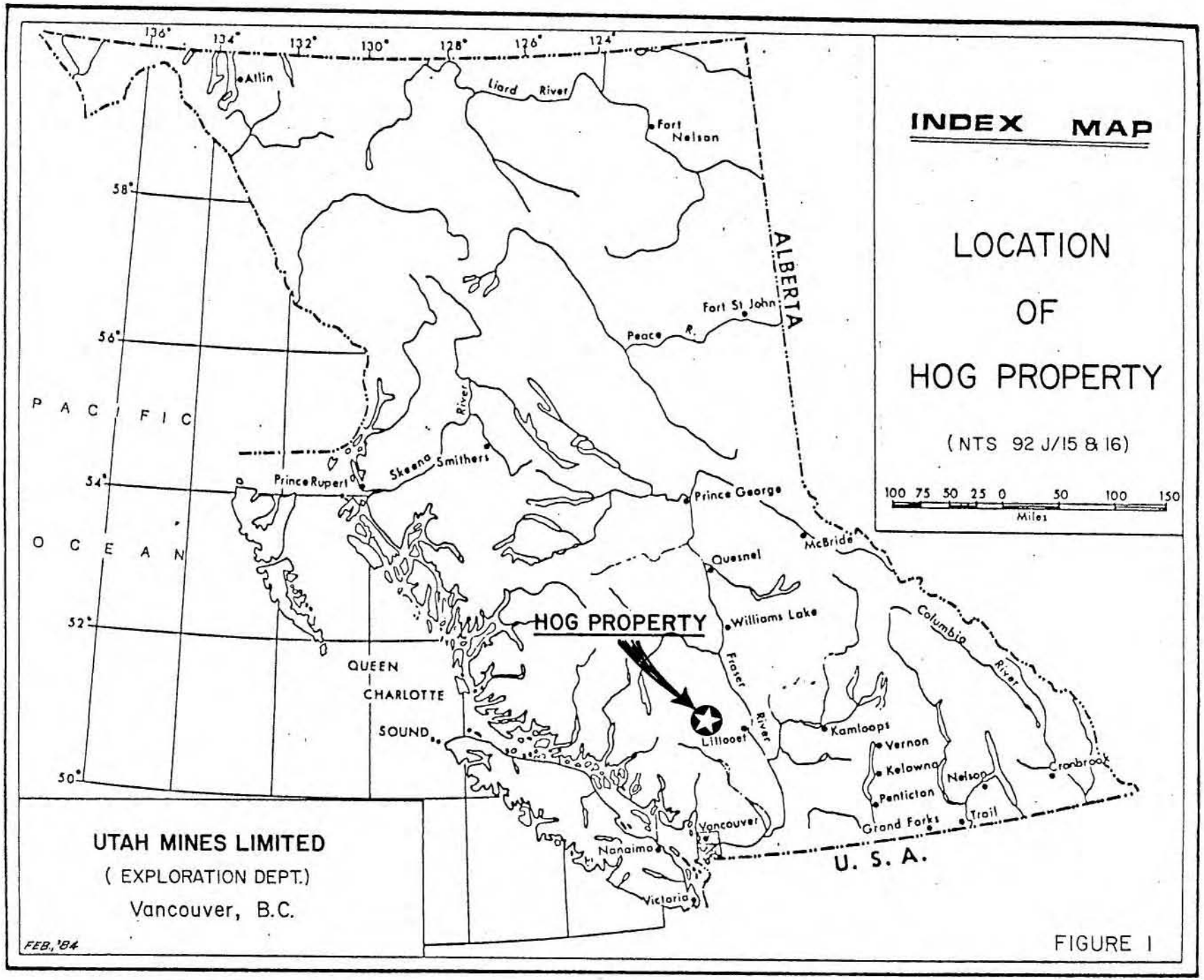
INTRODUCTION

Preliminary examination of the Hog claims during 1983 consisted of geological mapping, rock sampling and soil sampling on flagged lines. Most of the work was concentrated along Hog Creek and its tributaries in order to investigate stream silt anomalies, mainly in gold, found in the creek the previous year. The field work was undertaken by Tom Pollock and John Deighton, Geologists and Jeremy Howe and Chris Robertson, Geological Assistants.

LOCATION AND ACCESS

The Hog Property is located on Hog Creek in the Shulaps Range, approximately 25 kilometers ENE of Gold Bridge, B.C. (Figure 1). It lies within the 1:50,000 Bralorne and Bridge River map sheets having the NTS locations 92 J/15 and 92 J/16 respectively.

Access to within "walking distance" of the southern half of the property is provided by the Marshall Creek road, which leaves the Carpenter Lake road east of Gold Bridge. The northern and higher elevated half of the property is most easily reached by helicopter which may be chartered either from Lillooet or Pemberton.


INDEX MAP
LOCATION
OF
HOG PROPERTY
(NTS 92 J/15 & 16)
100 75 50 25 0 50 100 150
Miles
HOG PROPERTY
ALBERTA
PACIFIC
OCEAN
QUEEN
CHARLOTTE
SOUND
U. S. A.
Atlin
Liard River
Fort Nelson
Fort St John
Peace R.
Skeena River
Prince Rupert
Smithers
Prince George
McBride
Quesnel
Williams Lake
Fraser River
Columbia River
Lillooet
Kamloops
Vernon
Kelowna
Penticton
Nelson
Cranbrook
Grand Forks
Trail
Vancouver
Nanaimo
Victoria
136°
134°
132°
130°
128°
126°
124°
58°
56°
54°
52°
50°
UTAH MINES LIMITED
(EXPLORATION DEPT.)
Vancouver, B.C.
FEB., '84
FIGURE 1

PHYSICAL SETTING

The Hog claims are located in the northwest-southeast striking Shulaps Range, which is on the northeastern flank of the Coast Mountains. The Range is bound to the northeast by the Yalakom River and to the southwest by Carpenter Lake and Marshall Creek. The Bridge River and Mud Creek, respectively, form the southern and northern limits of the range.

Elevations vary from 750 to 2400 meters but do rise up to as high as 2879 meters at Shulaps peak. The mountain slopes below timberline tend to be steep but rounded and locally precipitous, particularly on the west side of the range. Above timberline, open meadows at the head of valleys culminate at the base of highly glaciated and rugged ridges forming the crest of the range.

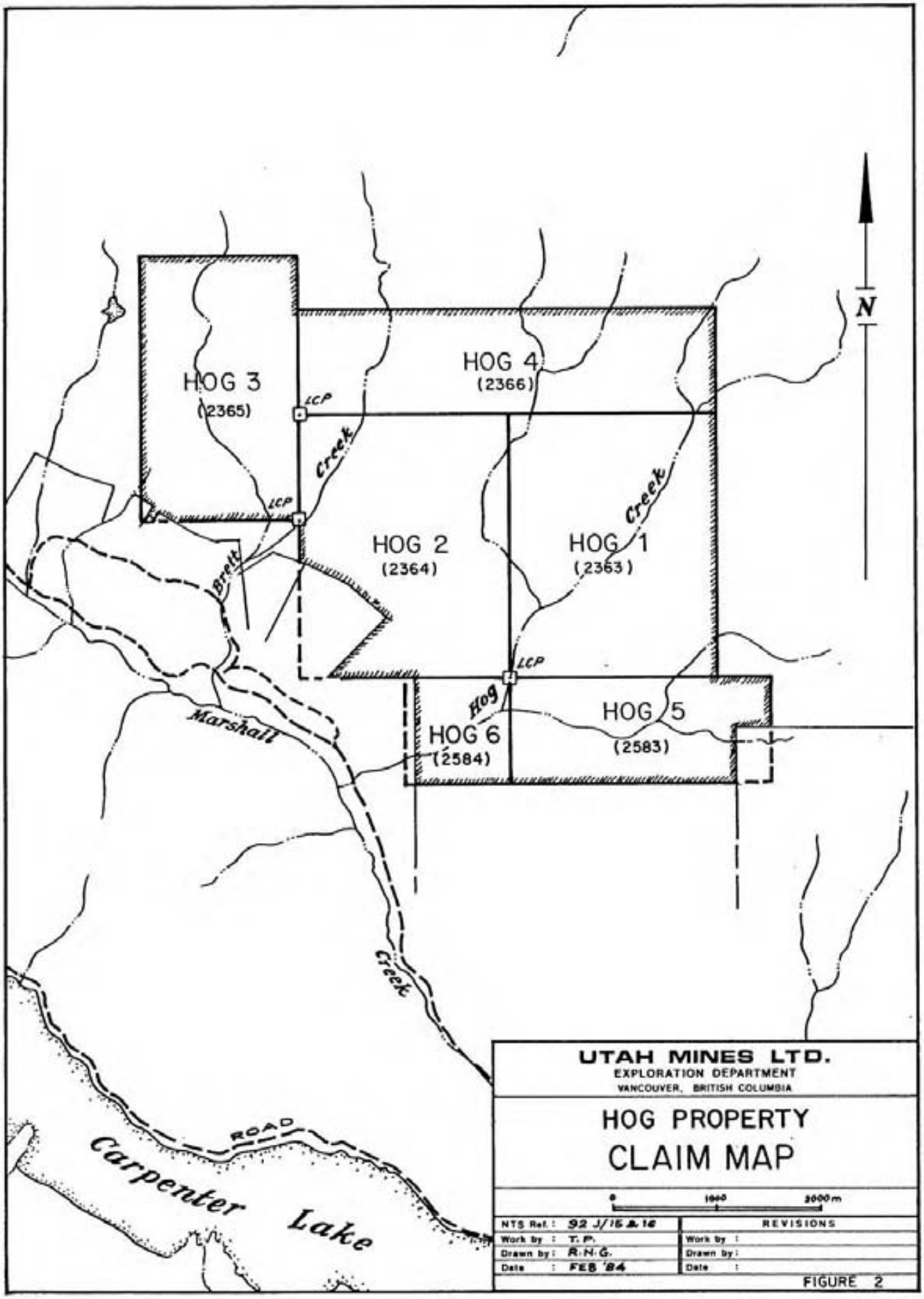
CLAIMS

The six claims (85 units) comprising the Hog Property are 100% owned and operated by Utah Mines Ltd. Figure 2 shows the location of the claims with respect to local topographic features while Table I gives their pertinent data.

TABLE I

Pertinent Data on the Six Claims
Comprising the Mad Property

Claim Name	Record No.	Anniversary Date	Expiry Date
HOG 1	2363	April 5, 1983	April 5, 1984
HOG 2	2364	" "	" "
HOG 3	2365	" "	" "
HOG 4	2366	" "	" "
HOG 5	2583	August 25, 1983	August 25, 1984
HOG 6	2584	" "	" "



UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

HOG PROPERTY
CLAIM MAP

NTS Ref. :	92 J/15 & 16	REVISIONS	
Work by :	T. P.	Work by :	
Drawn by :	R. H. G.	Drawn by :	
Date :	FEB '84	Date :	

FIGURE 2

WORK PROGRAM

Exploration work on the Hog claims during 1983 was very preliminary in nature and was concentrated largely on the eastern half of the property. The work consisted of geological mapping, rock sampling, heavy stream silt sampling and locallized soil sampling on flagged lines.

The geological mapping was concentrated largely along Hog Creek and its tributaries where outcrop was most readily exposed. Soil samples were collected on grids except where the terrain was too steep, in which case contour soil sampling was implemented. The following table gives a brief account of the exploration program completed on the Hog Property.

TABLE II

1983 Exploration Program
Completed on the Mad Property

Type of Work	Scale	Line Kms.	Area	# Samples
Geological Mapping	1:10,000		1,350 hec	
Soil Lines Flagged		14		230
Rock Geochemistry				45
Heavy Stream Silts				7

REGIONAL GEOLOGY

An ultrabasic batholith of possibly Upper Triassic age underlies most of the northern half of the Shulaps Range. The remainder of the range consists of complexly folded and faulted sedimentary and volcanic strata of the Triassic and Jurassic Bridge River group. Intruding this group and forming the spine to the south half of the range are granodiorite and dacitic porphyry stocks.

The eastern base of the range is marked by the Yalakom fault zone which strikes into the Fraser fault system. The fault zone varies in width from tens of meters to more than a kilometer and has associated with it much carbonatization, especially in the ultrabasic rocks. To the east of the Yalakom Fault lies the Lower Cretaceous, sedimentary, Jackass Mountain group.

Faults along the southern end of Carpenter Lake and Marshall creek mark the western base of the range. To the west of these faults lie Bridge River group sediments and volcanics which are intruded by various granodiorite and quartz diorite stocks.

The only significant gold prospect worked in the Shulaps Range is the Elizabeth group of claims located on Blue Creek. Most of the work on the property was carried out between 1941 and 1949, which included trenching, driving adits and other preliminary underground development. The claims are underlain by peridotite intruded by quartz diorite porphyries. Quartz veins within the porphyries host the gold mineralization which was discovered to be, after preliminary development work, very erratic. As a result, little work was done on the property after its initial development years.

LOCAL GEOLOGY

The geology of the Hog claims (Map 1) was mapped only at a preliminary level and was largely concentrated along Hog Creek and its tributaries. The northeast corner of the property drained by Brett Creek was not investigated during this first stage of exploration.

The geology of the property consists of three major rock units, namely the Shulaps ultrabasic rocks, the Bridge River group and a porphyritic intrusive referred to as Rexmount porphyry. The ultrabasic rocks outcrop along the north-central boundary of the property and are in contact to the south with the Bridge River group. They consist of harzburgite, dunite, and enstatite-pyroxenite which have undergone varying degrees of serpentinization and carbonatization.

The Bridge River group occupies most of the perimeter of the property and consists of greenstone, basalt, chert, argillite and phyllite with minor limestone and serpentine. The sediments comprising this group are generally thinly bedded, strike at approximately 080° and dip moderately to the north.

At the centre of the property, intruding the Bridge River group, is a Rexmount porphyry stock. This stock is approximately 2.4 kilometers in diameter and very uniform in nature. The porphyry is light grey on both weathered and fresh surfaces, and consists of 2 - 3 millimeter white euhedral plagioclase phenocrysts in an aphanitic matrix.

ALTERATION AND MINERALIZATION

The most noteable form of alteration mapped on the property was varying degrees of silicification found in the Bridge River group in contact with the Rexmount porphyry stock. The silicification generally consists of minor quartz veining but at the northeast corner of the stock, located on Hog Creek, argillite has undergone extreme alteration. At the contact argillite has been totally silicified for distances of several meters. In the same vicinity of this alteration are areas of talc-chlorite schist which may be highly sheared Rexmount porphyry. Further from the stock, for distances of up to 200 meters, highly gossanous quartz veins as wide as 0.5 meters have been injected into the argillite parallel to the bedding. Although most of the quartz veins were gossanous and carried disseminated pyrite and pyrrhotite, none of the veins returned anomalous amounts of gold or silver. A few samples were however anomalous in copper and arsenic. An old adit is located on the west side of Hog Creek within the altered zone but its entrance is not accessible.

Mineralization elsewhere on the property was discouraging and normally found in locallized gossanous and commonly silicified patches and zones in the Bridge River group. Pyrite was the main sulphide present with occasional minor amounts of chalcopyrite and arsenopyrite. No mineralization was seen in either of the ultramafic or Rexmount porphyry units.

Rock samples collected on the property were sent to Chemex Labs and analysed for copper, arsenic, silver and gold. The results of the analyses are shown in Map 2.

SOIL GEOCHEMISTRY

Soil samples were collected at flagged stations in three restricted areas on the property (Map 3). Samples taken on the north and south grids tried to delineate the source of anomalous amounts of gold discovered in Hog Creek from earlier reconnaissance stream silt sampling. The central grid surrounds the old adit mentioned earlier in this report. Soil samples were collected from the "B" horizon and analysed at Chemex Labs in North Vancouver for gold, silver, copper and arsenic. The results of the analyses for the four elements are shown on Maps 4 thru 7, respectively.

On the north grid, the only anomaly found, was one consisting of three samples anomalous in copper and gold. This small anomaly lies near the northwest baseline of the grid that follows in close proximity to the trace of a major fault.

Soil samples taken on the central grid returned anomalous values in copper, arsenic and gold. Arsenic in the soil samples correlates strongly with gold while copper appears to have an inverse relationship. A crude form of zonation also exists on the grid in that copper values along a particular soil line tend to decrease towards the centre of the line. In contrast, most of the anomalous arsenic and gold samples are found along the centre of the grid striking in an east-west direction. The site of the old adit on this small grid falls at the centre of the grid at Hog Creek.

Soil samples collected on the south grid were anomalous in all of the four elements analysed. Most of the anomalies occur on the western side of the grid, however, the only location in which one or more elements were anomalous at a particular area was in the southwest corner of the grid. A small anomaly made up of four samples

was anomalous in copper, arsenic and silver. One sample was anomalous in gold near this anomaly but in general gold was not anomalous with any other element.

None of the anomalies found on the three grids have been investigated to date.

Heavy Stream Geochemistry

Seven heavy mineral samples were collected on Hog Creek to check the validity of stream silt samples taken earlier at the same locations. The sample location sites are shown on Map 3 while the analyses for gold, silver, copper and arsenic are shown on Maps 4 thru 7, respectively. Lead, zinc, manganese, mercury and antimony are shown on Map 8.

Of the seven heavy mineral samples taken on Hog Creek, none of the samples returned any anomalous values for the nine elements analysed. The greatest contrast between the heavy mineral and stream silt samples was with the element gold. Stream silt samples taken at sample location sites 2, 3 and 4 returned values in gold of 330, 80 and 40 ppb, respectively. In contrast the heavy mineral samples all ran less than 10 ppb gold. One possible explanation is that the gold is encapsulated in quartz such as in quartz veins which is the common mode of occurrence for the element in the Bridge River area. If gold in the creek occurred in this manner it would be detected in the stream silt samples but not in the heavy mineral fractions.

Another reason for the gold not being detected in the heavy mineral samples might be caused by very fine gold in the creek. The fine gold would be best detected in the stream silt samples but difficult to separate in the heavy mineral samples.

CONCLUSIONS

The limited amount of mapping and geochemistry completed on the Hog claims during 1983 outlined several areas that require further examination. The most significant of these is the area surrounding the old adit on the upper east fork of Hog Creek. Although rock samples taken near the adit did not contain anomalous quantities of gold, soil samples did contain sporadic anomalous gold, copper and arsenic. Soil samples taken along trenches above the adit on the east bank of the creek also contained anomalous gold values.

The adit is located near the contact of a porphyritic intrusion and highly altered argillites, phyllites and minor limestone. The contact is marked by severe silicification of the sediments, locally strong mineralization and zones of talc-chlorite schist which may represent shearing.

The small soil anomalies found on the north and south grids are also worth investigating due to the nearby presence of either faults or zones of shearing.

REFERENCES

B.C. Dept. of Mines 1925, Report of Activities on the Shulap Group of Claims, pp. A174 - A175.

1926, Report of Activities on the Shulap Group of Claims, p. A191.

Leech, G.B. 1953, Geology and Mineral Deposits of the Shulaps Range, Southwestern British Columbia, B.C. Department of Mines, Bulletin No. 32, p. 54.

Woodsworth, G.J. 1977, Geology of the Pemberton (92 J) Map Area, Open File 482.

APPENDIX I

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

The field work for this report was done by the following person whose qualifications are outlined below:

T. Pollock, Geologist for Utah Mines Ltd., Vancouver, British Columbia. Completed Hon. B.Sc. (geology) at Queen's University, Kingston, Ontario in 1977; completed M.Sc.A. at McGill University, Montreal, Quebec in 1980; employed by the Ontario Geological Survey as an assistant geologist during the 1974 and 1975 summer field seasons; employed by Inco Limited as a field geologist for the 1976, 1977 and 1978 summer field seasons; employed by the Geological Survey of Canada as a geologist, December 1977 to April 1978; employed by Kelvin Energy Ltd. during the 1979 field season as a field geologist; employed by Utah Mines Ltd. from May 1980 to date as a geologist under the supervision of John Deighton.

APPENDIX II

STATEMENT OF MAJOR COSTS

STATEMENT OF MAJOR COSTS

Chemex Labs		$ 2,977.12
White Saddle Helicopters		1,337.00
Salaries - T. Pollock	30 days @ $150/day = $4,500.	
J. Howe	15 days @ $132/day = $1,980.	
R. Gopal	7 days @ $110/day = $ 770.	
J. Deighton	2 days @ $176/day = $ 352.	
C. Robertson	2 days @ $88/day = $ 176.	7,778.00
G & H (Food)		511.18
Lodging		395.54
Field Support and Expendable Field Material		279.00
Gas and Oil		197.05
Communications		33.15
Reproduction Maps		11.43
TOTAL COSTS		$13,519.47

APPENDIX III

ANALYTICAL TECHNIQUES

ANALYTICAL TECHNIQUES

All geochemical analyses were performed by Chemex Labs Ltd. in North Vancouver. Soil samples were dryed at 80°C for a period of 12 to 24 hours then seived to the -80 mesh fraction. Rock samples were crushed, dried and pulverized to the -100 mesh.

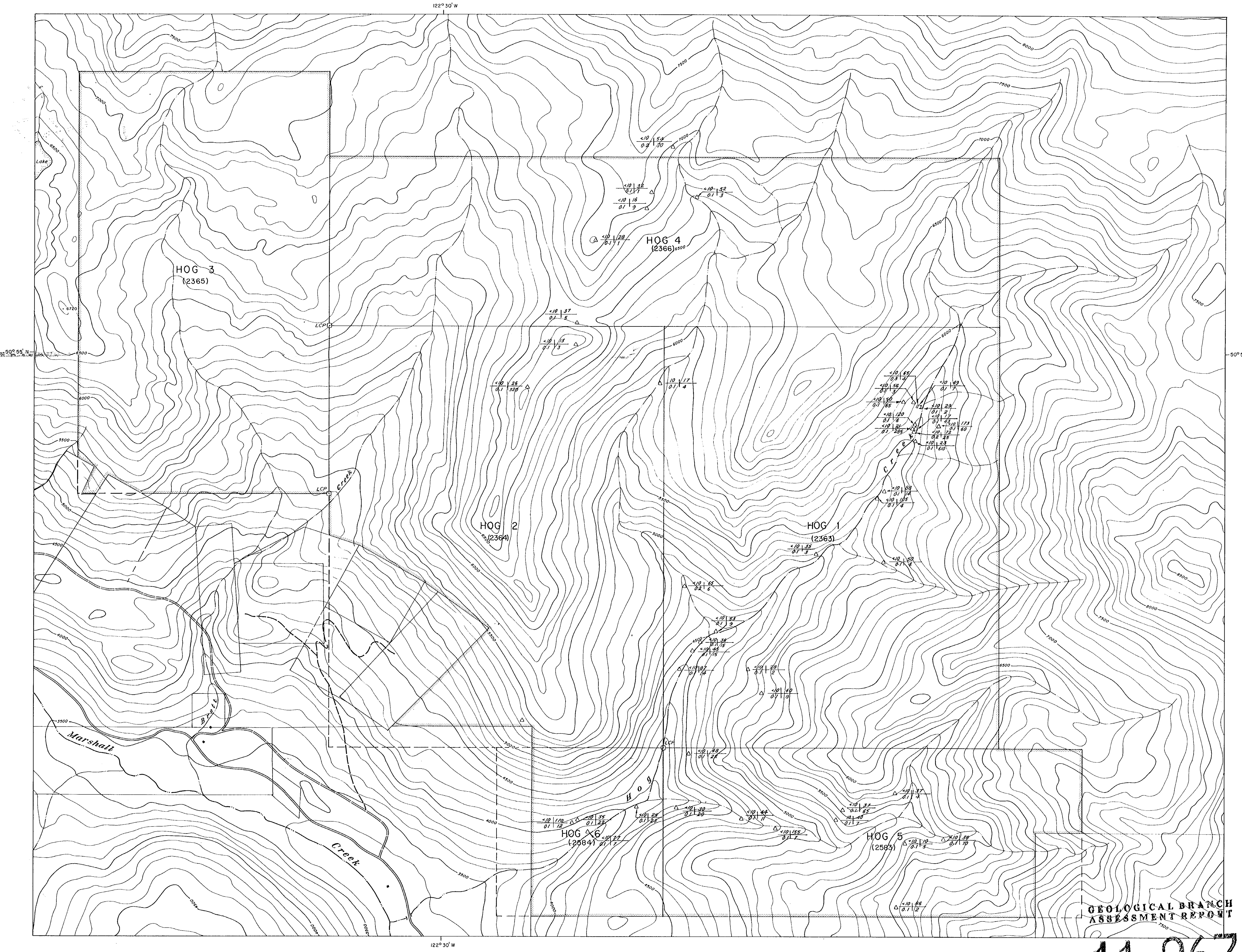
In analysing for copper, lead, zinc and silver the sample is digested using hot 70% $HClO_4$ and concentrated HNO_3. After the sample volume is adjusted using demineralized water the solutions are homogenized and allowed to settle before being analysed by atomic absorption procedures.

Gold was analysed by ashing 5 gm. samples at 800°C for one hour, digesting with aqua regia - twice to dryness - then by taking the sample up in 25% HCl. The gold was then extracted as the bromide complex into MIBK and analysed using atomic absorption.

In antimony analysis samples were digested with concentrated HCl followed by the reduction of the iron to the Fe^{t2} state and the complexing of Sb with I-. The complex is extracted with TOPO - MIBK and analysed using atomic absorption.

Mercury was analysed using the Hatt - Ott procedure and a closed cell atomic absorption determination.

Arsenic was analysed by taking an aliquot of the nitric digestion and acidifying, followed by reduction with Kl. A portion of the reduced solution is converted to arsine with $NaBH_4$ and the arsenic content is determined by atomic absorption.



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,967

△ .... *Rock sample location*

△ $\frac{<10}{0.2} \Big| \frac{65}{6}$ ...... *Au(ppb) | Cu(ppm)* / *Ag(ppm) | As(ppm)*

- Road (loose surface)
- Road (loose surface, dry weather)
- Cart track
- 5000 Contours (in feet)
- Creek
- Lake

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

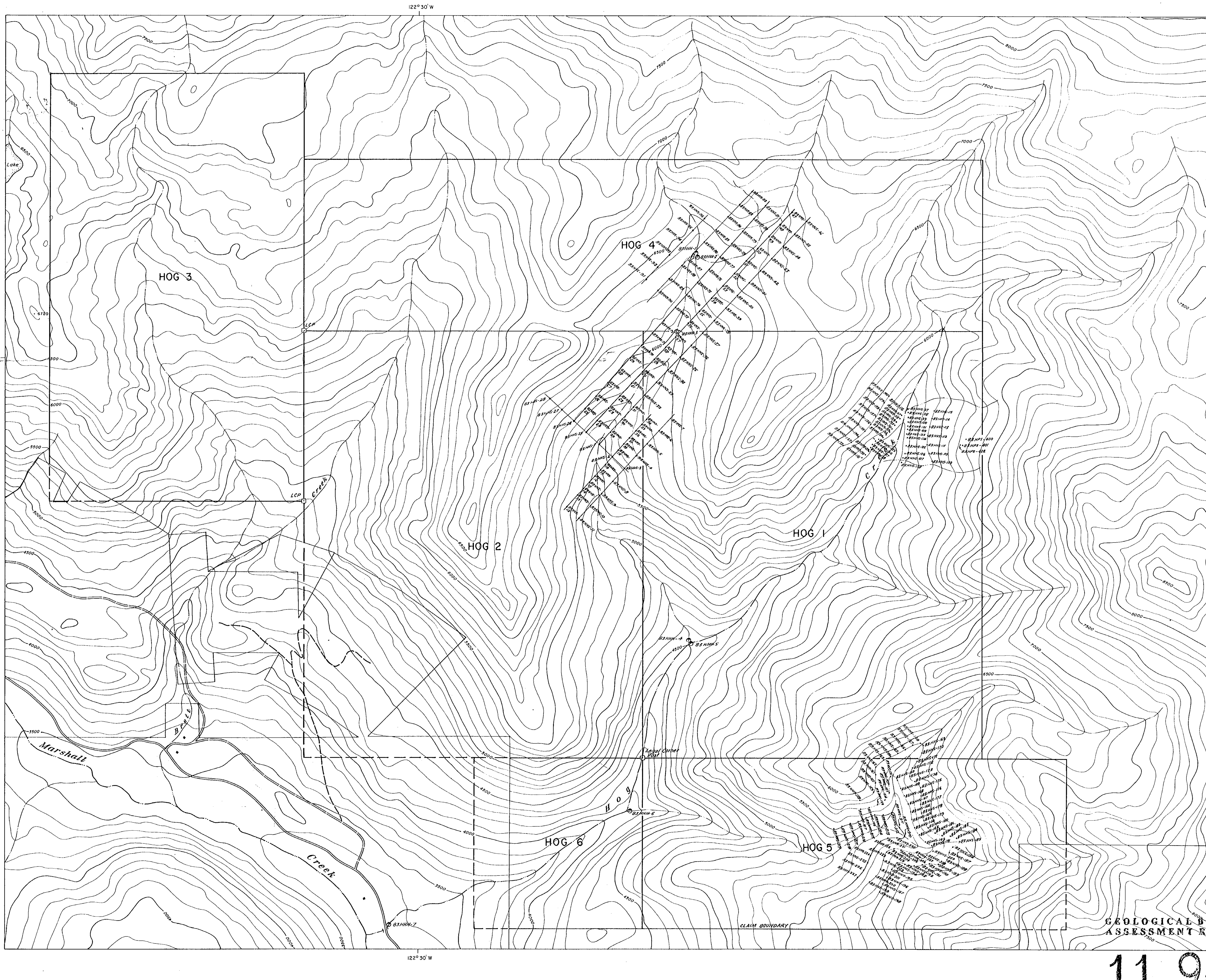
HOG CLAIM

ROCK GEOCHEMISTRY
GOLD, SILVER, COPPER & ARSENIC

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref. : 92-J/15, 16	REVISIONS
Work by : T. POLLOCK	Work by :
Drawn by : R.N. Gopal	Drawn by :
Date : FEB., '84	Date :

MAP 2



• 83HHS-6 .... Soil sample & number

83HHH-6... Heavy mineral sample & number

Road (loose surface)

Road (loose surface, dry weather)

Cart track

5000 Contours (in feet)

Creek

Lake

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

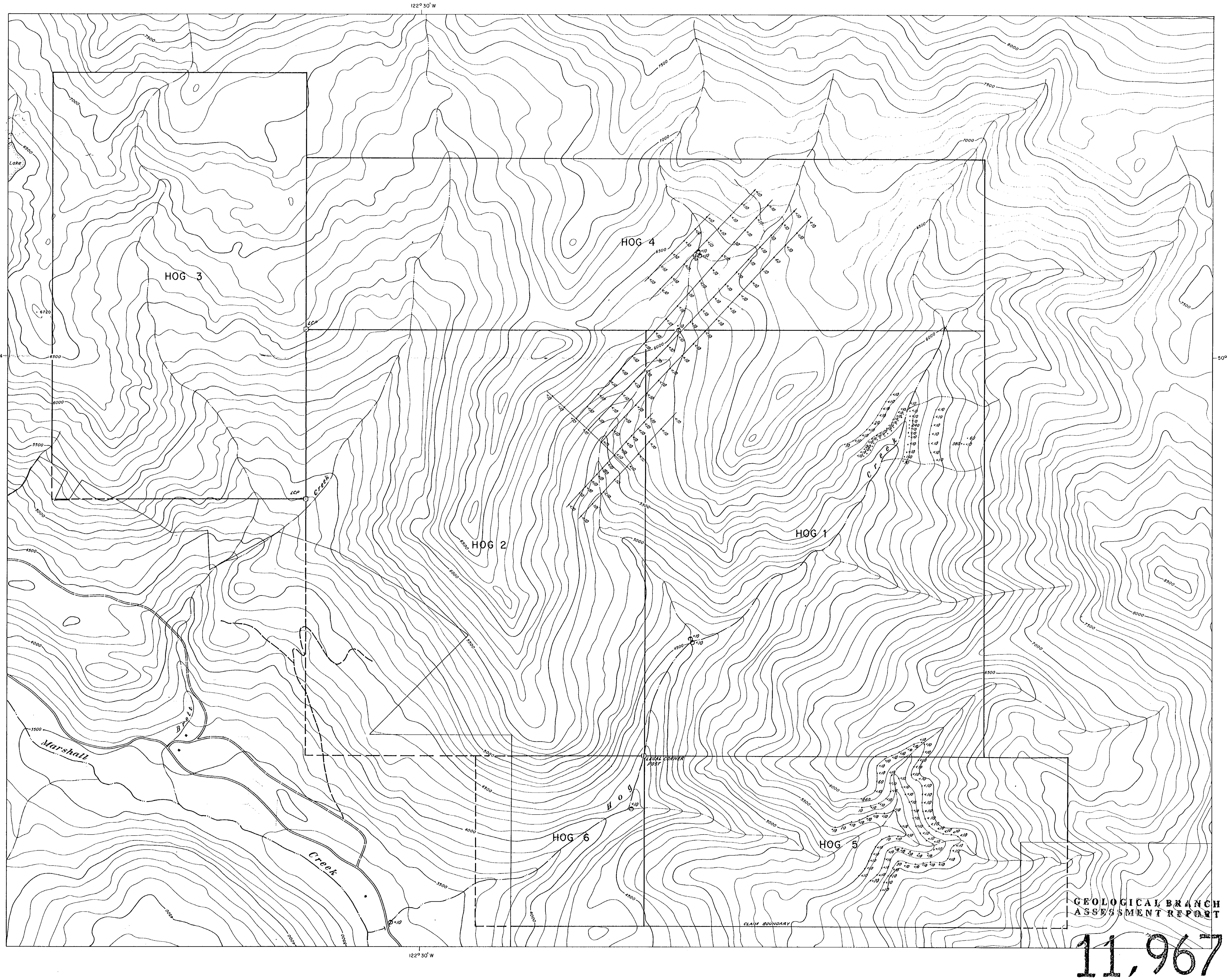
HOG CLAIM

SAMPLE LOCATIONS

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref.:	92-J/15, 16	REVISIONS	
Work by:	T. POLLOCK	Work by:	
Drawn by:	R.N. Gopal	Drawn by:	
Date:	FEB., 1984	Date:	

MAP 3



.20 ...... Au values in ppb

• .... Soil sample

○ .... Heavy mineral sample

Road (loose surface)

Road (loose surface, dry weather)

Cart track

Contours (in feet)

Creek

Lake

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

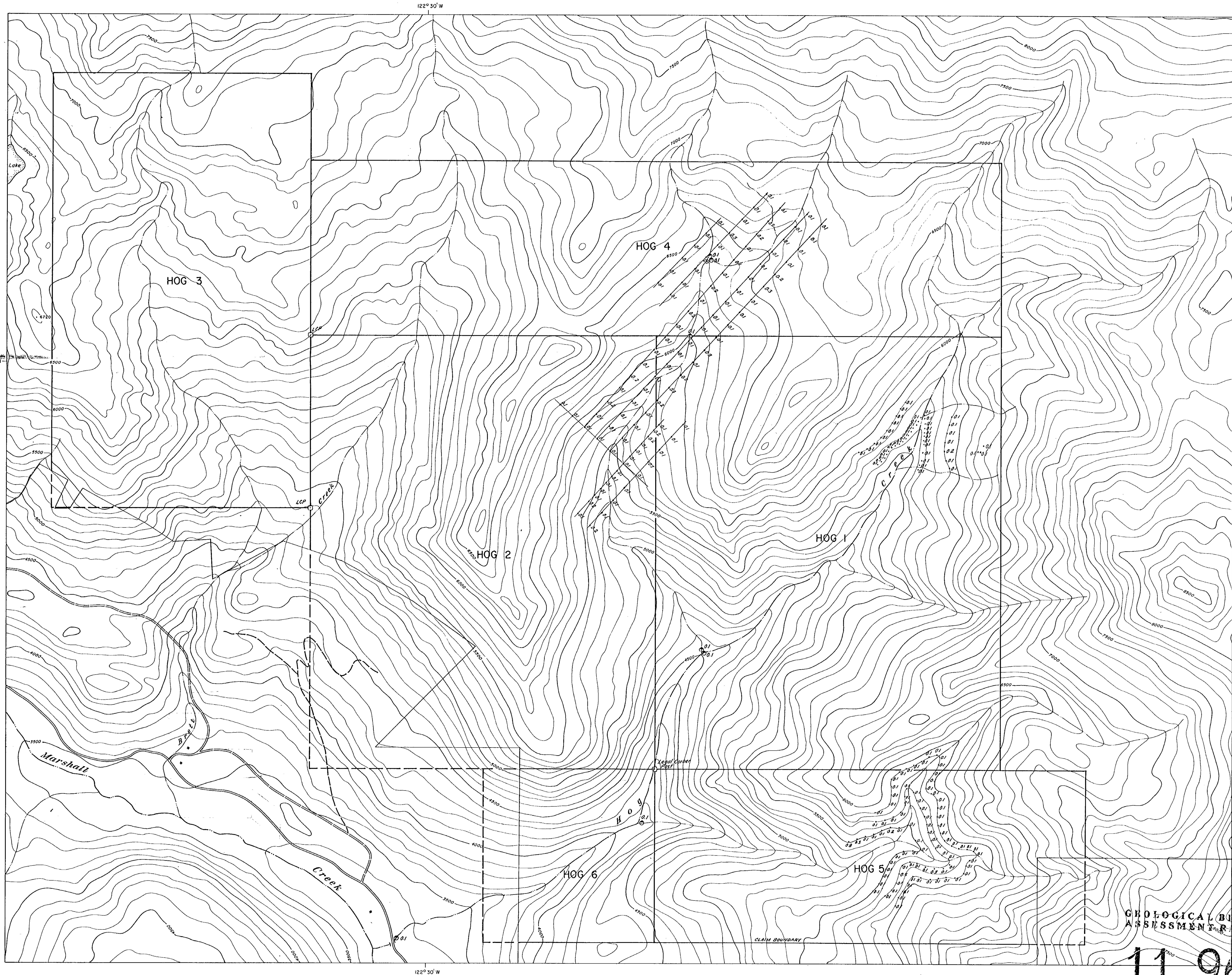
HOG CLAIM

GEOCHEMISTRY
GOLD

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref.:	92-J/15, 16	REVISIONS	
Work by:	T. POLLOCK	Work by:	
Drawn by:	R.N. Gopal	Drawn by:	
Date:	Feb. '84	Date:	

MAP 4



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,967

· Soil sample

○ Heavy mineral sample

.02 Ag in ppm

Road (loose surface)

Road (loose surface, dry weather)

Cart track

Contours (in feet)

Creek

Lake

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography —1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

HOG CLAIM

GEOCHEMISTRY
SILVER

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref. : 92-J/15,16	REVISIONS
Work by : T. POLLOCK	Work by :
Drawn by : R.N. Gopal	Drawn by :
Date : Feb. 1984	Date :

MAP 5

122° 30' W

50° 55' N

HOG 3

HOG 4

HOG 2

HOG 1

HOG 6

HOG 5

LCP

LCP

Legal Corner Post

Lake

Creek

Marshall

Creek

Creek

Creek

CLAIM BOUNDARY

122° 30' W

.79 Cu values in ppm

• Soil sample

Heavy mineral sample

Road (loose surface)

Road (loose surface, dry weather)

Cart track

5000 Contours (in feet)

Creek

Lake

N

Source : Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,967

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

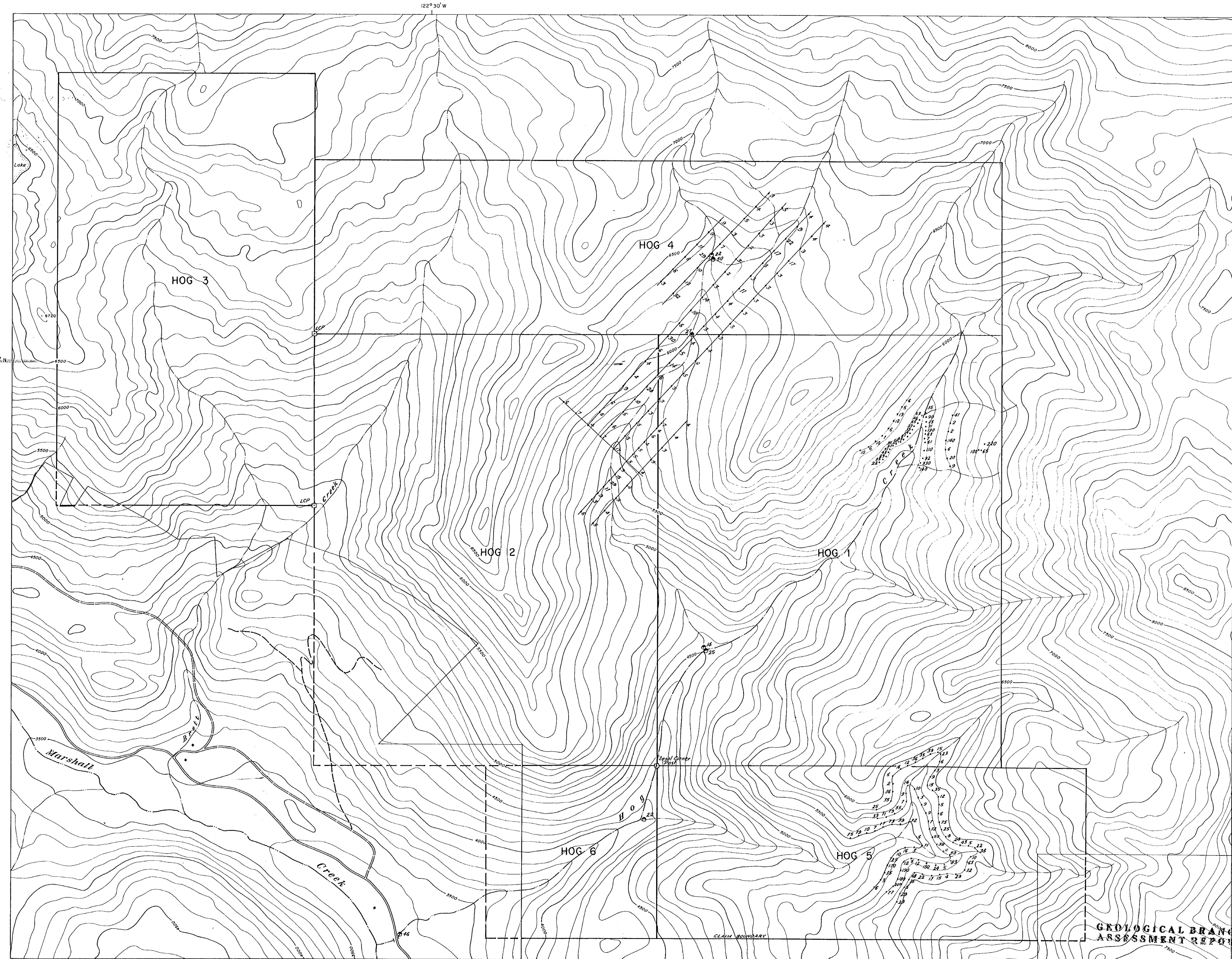
HOG CLAIM

GEOCHEMISTRY
COPPER

METRES 100 0 100 200 300 400 500 METRES
SCALE 1:10,000

NTS Ref. : 92-J/15, 16	REVISIONS
Work by : T. POLLOCK	Work by :
Drawn by : Ram N. Gopal	Drawn by :
Date : Feb. 1984	Date :

MAP 6



.25 As values in ppm

Soil sample

Heavy mineral sample

Road (loose surface)

Road (loose surface, dry weather)

Cart track

5000 Contours (in feet)

Creek

Lake

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

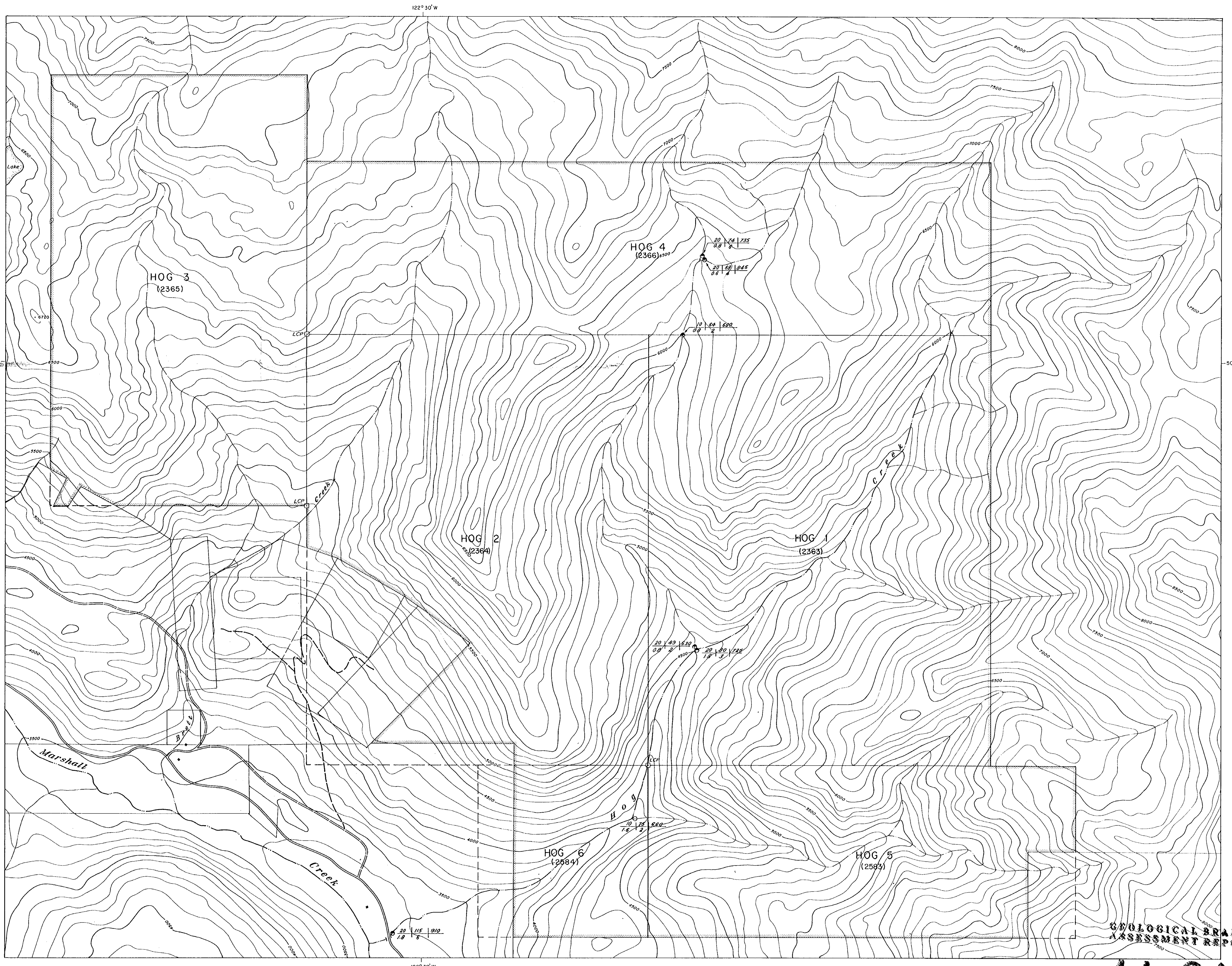
HOG CLAIM

GEOCHEMISTRY
ARSENIC

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref.: 92-J/15, 16	REVISIONS
Work by : T. POLLOCK	Work by :
Drawn by: R.N. Gopal	Drawn by:
Date : Feb. '84	Date :

MAP 7



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,967

HEAVY MINERAL SAMPLE ANALYSIS

20 / 0.8	49 / 2	530	....	Hg (ppb) / Sb (ppm	Zn (ppm) / Pb (ppm	Mn (ppm)

LCP ...... Legal Corner Post

Road (loose surface)

Road (loose surface, dry weather)

Cart track

5000 Contours (in feet)

Creek

Lake

LCP Legal Corner Post

N

Source: Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

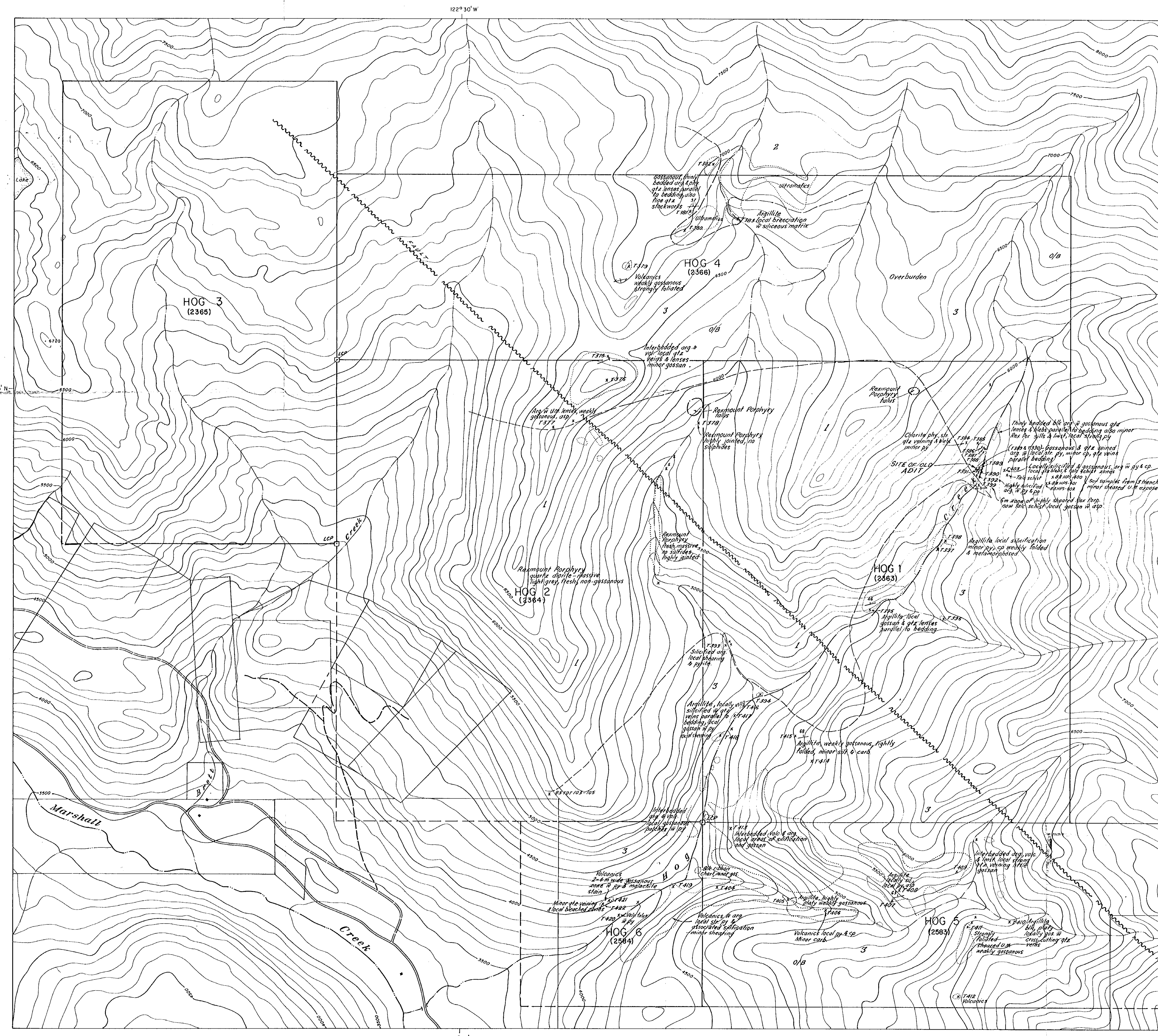
HOG CLAIM

GEOCHEMISTRY
MERCURY, ANTIMONY, ZINC
LEAD, MANGANESE

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref. :	92-J/15,16	REVISIONS	
Work by :	T. POLLOCK	Work by :	
Drawn by :	R.N.G.	Drawn by :	
Date :	Feb.'84	Date :	

MAP 8



LEGEND

1	Rexmount Porphyry : Quartz diorite (Dacite)
2	Shulaps Ultrabasic Rocks
3	Bridge River Group : Greenstone, basalt, chert, argillite, phyllite, minor limestone and serpentine

- Rock unit contact
- Talus outline
- Outcrop outline
- Fault
- Bedding (inclined)
- Joint (vertical)
- Foliation (vertical)
- Rock outcrop
- Rock sample location & number

py........pyrite
cp........chalcopyrite
asp........arsenopyrite
po........pyrrhotite
O/B........overburden

- Road (loose surface)
- Road (loose surface, dry weather)
- Cart track
- Contours (in feet)
- Creek
- Lake

LCP Legal Corner Post

N

Source : Enlarged from 1:50,000 series Topo maps
Date of photography — 1971

Base map drawn by Ram N. Gopal, (5th June, 1983)

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

HOG CLAIM

RECONNAISSANCE GEOLOGY

SCALE 1:10,000
METRES 100 0 100 200 300 400 500 METRES

NTS Ref. : 92-J/15, 16	REVISIONS
Work by : T. POLLOCK	Work by :
Drawn by : R.N. Gopal	Drawn by :
Date : Feb. '84	Date :

MAP 1