

GEOCHEMICAL REPORT
ON THE
GIO 4 MINERAL CLAIM

for
John Keith Judd
Owner-Operator

NTS 93L/10E

FILMED

Omineca Mining Division
GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,833

Latitude 54°^{35.5'}~~36'~~'N Longitude 126°44'W

August 26, 1985

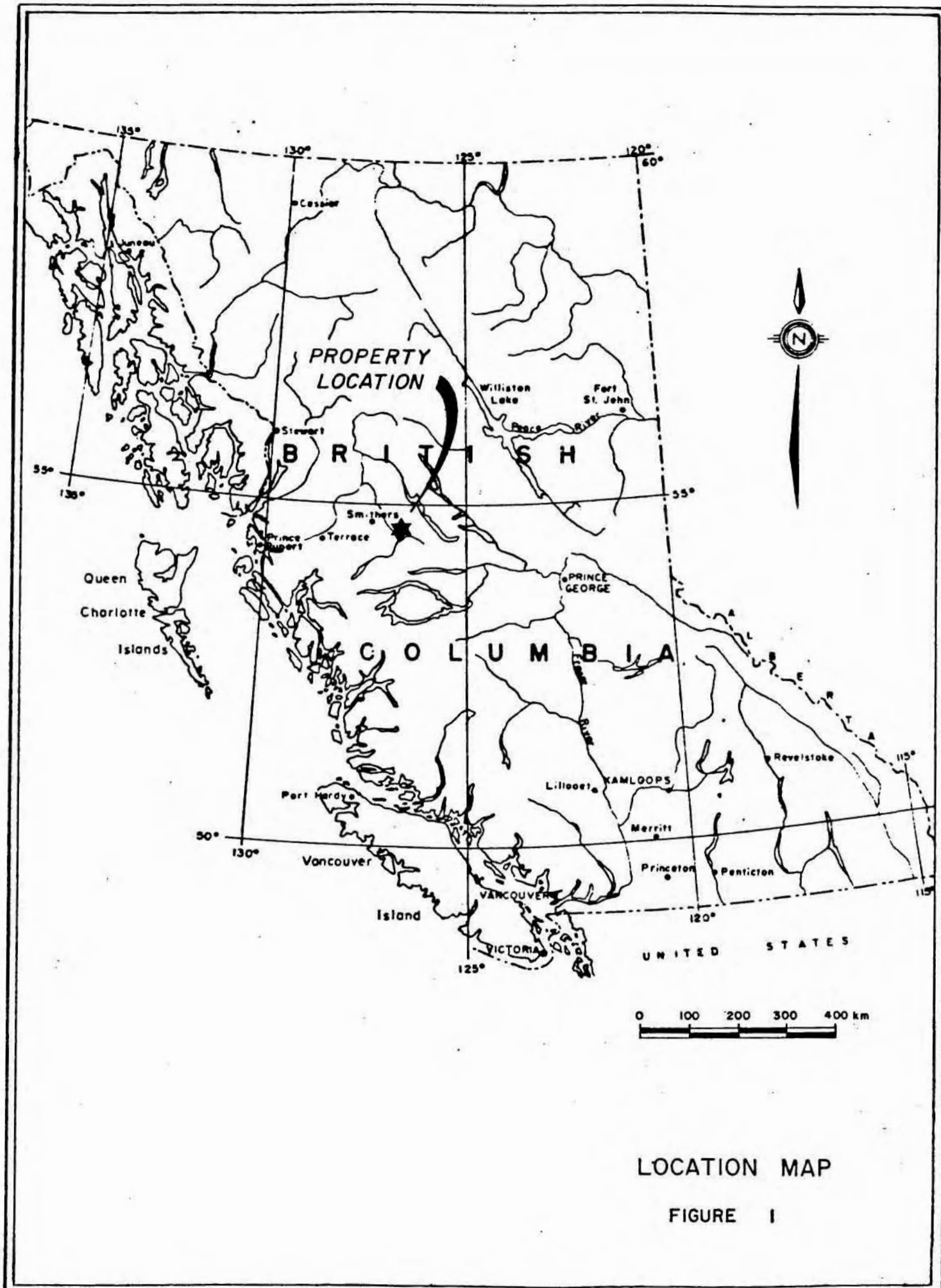
Robert Holland, B.Sc.
Holland Geoservices Ltd.

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LOCATION MAP

FIGURE I

SUMMARY AND CONCLUSIONS

The Gio 4 mineral claim, owned by John Keith Judd, lies on the northern flank of Grouse Mountain, adjoining to the north, the Chance high grade silver-copper-gold property belonging to Adriatic Resources Corp. The Copperhill zinc-copper-silver prospect, currently being developed by Ramm Ventures Ltd. and Teck Corp. lies within 2 kilometers to the south. Mineral reserves of 1,080,000 tonnes of low grade material have been outlined thus far by Ramm Ventures and current work indicates a good potential to substantially increase these reserves. Mineralization is widespread in the Grouse Mountain area south of the claim, extending in a 2 kilometer wide belt to within 350 meters of the claim boundary. This mineralization appears to be spatially related to numerous dykes and small stocks in the area, and is likely caused by a large scale hydrothermal event related to a larger parent intrusive mass at depth.

A program of reconnaissance soil geochemistry and geology was conducted in 1984, and results indicated numerous dykes and a small stock in the claim area, as well as a number of soil anomalies and a zone of silica-pyrite alteration. Follow up of soil anomalies in the southern claim area in 1985 outlined a number of weak copper-silver-zinc±arsenic±lead soil anomalies, the most significant being a single silver value of 34.3 ppm (approximately 1 oz/ton silver) in the southern part of the grid. Several of these anomalous zones are still open in one or more directions.

The presence of nearby mineralization as well as intrusive activity, soil geochemical responses and hydrothermal alteration within the property provide encouragement.

However, the property is largely intested, and insufficient work has been done to draw any effective conclusions as to the mineral potential of the claim. More detailed work is required and should include, as Phase 1, expanding the current soil grid as well as VLF electromagnetic, magnetometer and geological surveys at an estimated cost of \$16,500.00.

LOCATION AND ACCESS

The Gio 4 mineral claim is located on the northern flank of Grouse Mountain, 30 kilometers southeast of the town of Smithers and 22 kilometers north of the town of Houston, in north central British Columbia. The terrain is moderate to gently sloping with large swampy areas in the central part of the claim. Elevations range from 3400 to 4300 feet (1050 to 1310 meters). Rock outcroppings range from poor to good, with the best exposures in the southern half, northeast corner, and on a small central knoll. The claim is generally well timbered with balsam fir and minor spruce and pine.

The summit region of Grouse Mountain can be reached via a rough four wheel drive road, a branch of which ends within 1.2 kilometers of the property. Access to the Gio 4 claim can be made from this point, by foot, along cat roads and an old trail which extends northwest across the southwest quarter of the property. Access to the northwestern corner can be gained via a private road which extends east from the end of Wakefield Road, to within 600 meters of the property. The Yellowhead Highway, a major arterial route connecting Smithers and Houston with points east and west, also passes within 4 kilometers of the claim. Daily air service is available from Smithers to Vancouver, Prince George and Terrace, and major railway and helicopter facilities can be found in both Smithers and Houston.

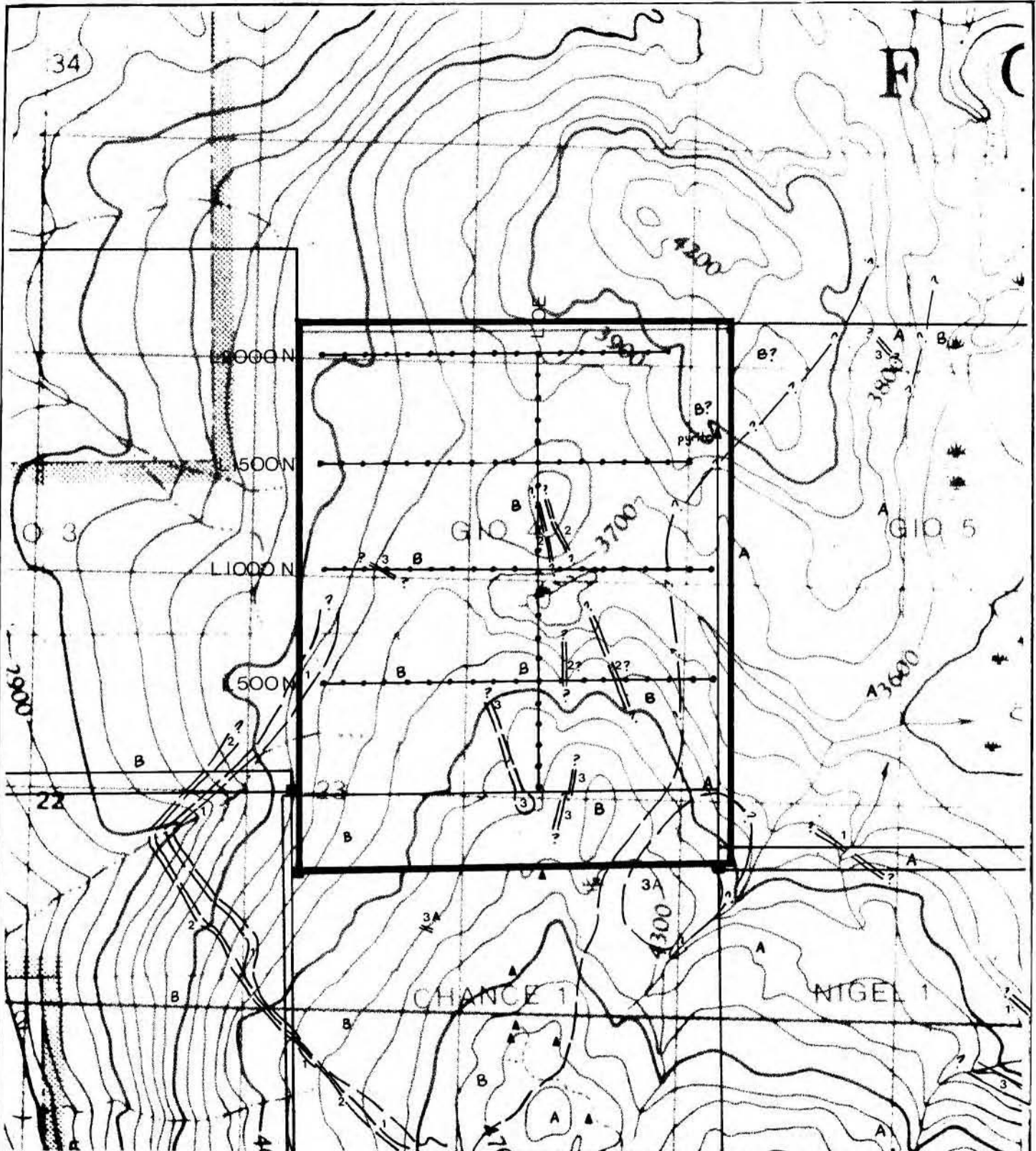
CLAIM STATUS

The Gio 4 mineral claim, record number 6178, consists of 20 claim units located within the Omineca mining division of British Columbia. The current expiry date is May 8, 1986.

INTRODUCTION

Interest in the Grouse Mountain area began in 1914 with the discovery of copper-zinc-silver mineralization at Coppermine Lake near the summit of Grouse Mountain. Since that time, the area has been worked intermittently, with the main focus being on and around the Ruby zone, about 500 meters southwest of Coppermine Lake and 3 kilometers south of the Gio 4 claim. This property, referred to as the Copperhill prospect, has seen extensive development work, with over 1100 meters of drifting and crosscutting and over 8400 meters of diamond drilling to 1983. Published mineral reserves from the Ruby zone are 360,000 tonnes of 0.38% copper, 4.23% zinc and 0.88 oz/ton silver, with an additional 720,000 tonnes of lower grade material in extensions to this zone. Current work, including extensive drilling, is being carried out by Teck Corp. under option agreement with Ramm Ventures Ltd. and recent reports suggest a good potential to substantially increase these reserves.

Work has also been recently conducted by Adriatic Resources Corp. on its Chance 1 high grade silver-copper prospect which adjoins the Copperhill prospect to the north and the Gio 4 claim to the south. Work during 1984 on the Chance group included detailed geological, soil geochemical, and VLF electromagnetic surveys with follow up diamond drilling. Noranda Explorations has also carried out investigations on the Mineral Hill property further to the



▲ mineral showing

- | | | | |
|---|--|---|---------------------------------------|
| 3 | Biotite - feldspar porphyry
A) altered & silicified | B | Polymictic tuff, greywacke, argillite |
| 2 | Crowded feldspar porphyry | A | Maroon tuff |
| 1 | Trachytoidal feldspar porphyry | | |



GIO 4 CLAIM	
GEOLOGY	
FIG. 2	
Date Nov. 1984	by R. Holland
Scale 1: 25,000	NTS 93L/10

south where significant silver-copper-lead-zinc-gold mineralization has been reported.

The Gio 4 claim was staked in May 1984, and subsequently acquired by Mr. John Keith Judd in August 1984. A program of reconnaissance geological mapping and soil geochemistry was carried out in September 1984 by Holland Geoservices Ltd. under contract. A more detailed follow up soil geochemistry program was completed in the southern claim area in August 1985, with a total of 141 samples collected.

GEOLOGY

The Grouse Mountain area is underlain mainly by tuffs, tuffaceous sediments and minor flow rocks of the lower Jurassic-aged Hazelton Group. These rocks are cut by numerous, generally north to northwest trending dykes ranging from a few meters to in excess of 200 meters wide. In addition to these dykes, a number of small granodiorite stocks have also been observed. Hornfelsing is common but extremely variable within the Hazelton Group adjacent to the dykes and stocks.

The geology of the Gio 4 claim is shown in figure 2. The claim is largely underlain by strongly fractured grey, green or maroon tuffs and tuffaceous greywackes with lesser argillites (unit B). Along the eastern and southeastern edge of the claim lies a wide belt of relatively uniform composition, consisting of massive to moderately fissile maroon tuffs containing abundant gritty to sandy white fragments (unit A).

Intruding the Hazelton rocks along the southeastern edge of the claim is a small stock (unit 3A) measuring at

least 700 meters by 450 meters. This stock is medium to coarse grained, and strongly silicified and altered to pale green (chlorite) and/or pink (hematite).

Numerous dykes also outcrop in the claim area. The most prominent of these is a 10 to 20 meter wide trachytoidal feldspar porphyry (unit 1) exposed in the western part of the property, and traceable to the south for at least 6000 meters. Cutting and paralleling unit 1 for most of its length, is a crowded feldspar porphyry dyke (unit 2) ranging from 10 to 20 meters wide in the vicinity of the claim. This dyke does not actually outcrop within the claim, however, two similar dykes, also 10 to 20 meters wide, are exposed trending south southeast on a small knoll in the center of the claim. Possible extensions of these dykes are exposed south of the small lake. At least three biotite-feldspar porphyry dykes were also noted in the claim area, ranging in width from 10 to 30 meters. Many of the dykes are recessive weathering and often coincide with topographical linears. It is likely that there are numerous other unexposed dykes in the area.

MINERALIZATION

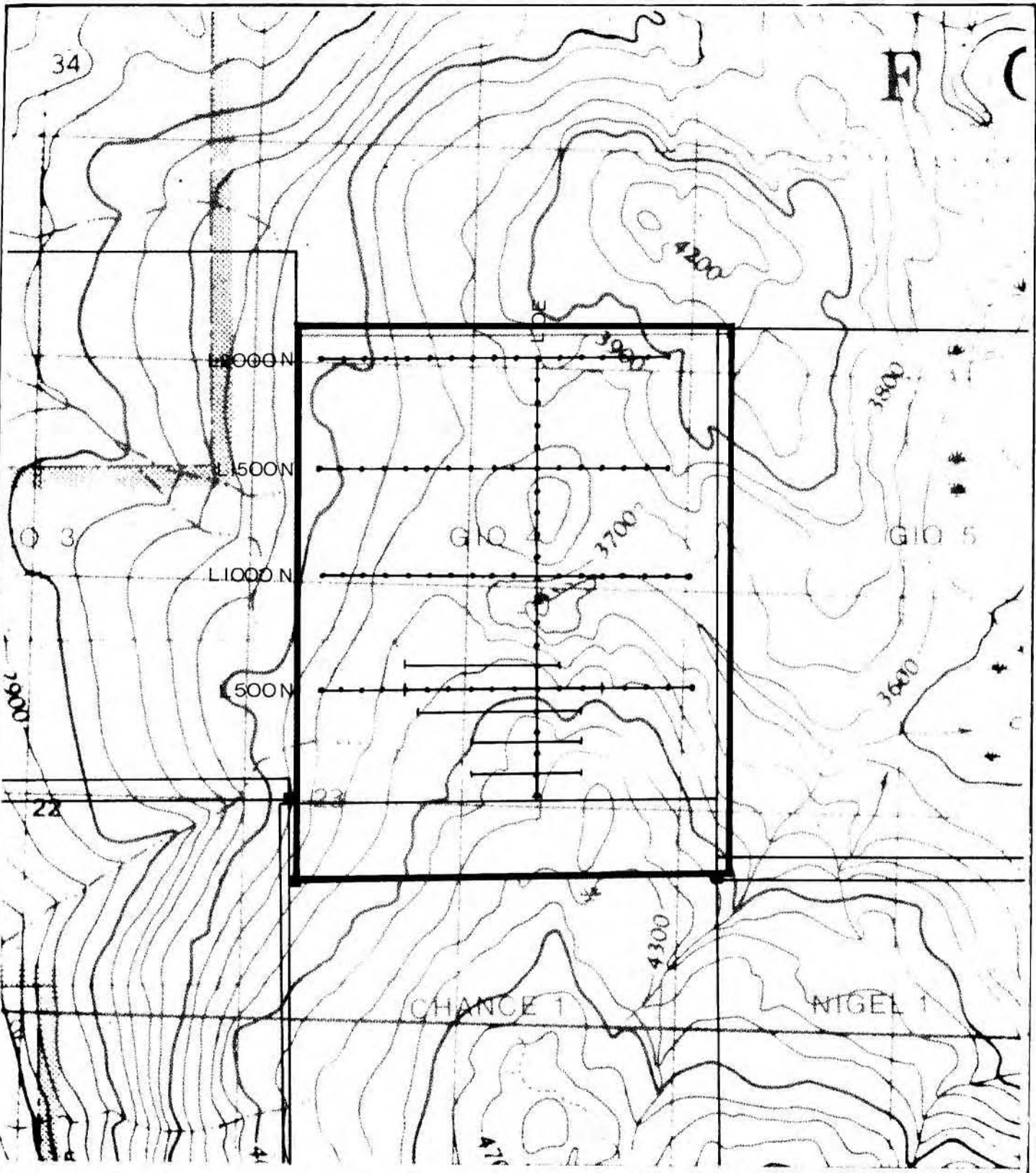
Mineralization is widespread in the relatively flat summit area of Grouse Mountain, south of the Gio 4 claim. These showings form a 2 kilometer wide, northwest trending belt, parallel to and containing most of the dykes in the area. Included in this belt are the important Copperhill and Chance mineral occurrences. This mineralization appears to be a result of a large scale hydrothermal system likely related to a large buried intrusive from which the dykes have originated.



Mineralization on the Chance 1 claim is mainly narrow high grade silver-copper-gold veins and silicified breccia zones consisting largely of tetrahedrite, with locally important sphalerite and galena in a quartz-carbonate gangue. One of these mineral zones, the Christina, lies within 350 meters of the Gio 4 claim and contains abundant sphalerite and galena, with silver values, in a silicified breccia zone. The Copperhill prospect occurrences are generally wider and consist of abundant to locally massive chalcopyrite-sphalerite-pyrite in quartz-carbonate rich zones. Values here are mainly copper-zinc with lower grade silver.

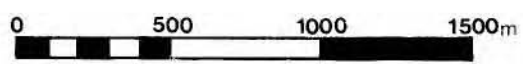
No mineral showings have as yet been found on the Gio 4 claim, however, a large outcrop of strongly silicified and altered tuff with abundant very fine grained disseminated pyrite was noted at the northeastern edge of the property. Two grab samples of this material failed to yield significant metal values, however, the presence of silicification and pyrite is encouraging. Several other silicified outcroppings were also noted in the area, suggesting some sort of hydrothermal activity.

GEOCHEMISTRY

A program of follow up reconnaissance soil geochemistry was completed over the southern part of the Gio 4 claim, in an area of previous silver-copper-zinc soil responses. A total of 141 samples were taken at intervals of 25 to 50 meters along east-west lines run at 100 to 150 meter intervals from a north-south baseline, which was also sampled. Samples were collected, using a prospector's 'grub hoe', as nearly as possible from the 'B' soil horizon (15 to 25cm depth) with an effort to avoid organic rich,



 1984 grid
 1985 grid



GIO 4 CLAIM	
SOIL GEOCHEMISTRY GRID LOCATION	
Fig. 3	
Date Nov. 1984	by R. Holland
Scale 1: 25,000	NTS 93L/10

disturbed, or leached material. Each sample was stored in a labelled kraft soil bag and shipped to Acme Analytical Labs in Vancouver, B.C., for analysis for copper, silver, lead, zinc and arsenic. Standard aqua regia digestion and I.C.P. analysis methods were employed on a -80 mesh size fraction. All results are reported in parts per million (ppm) and are tabulated by element in figures 4 to 8.

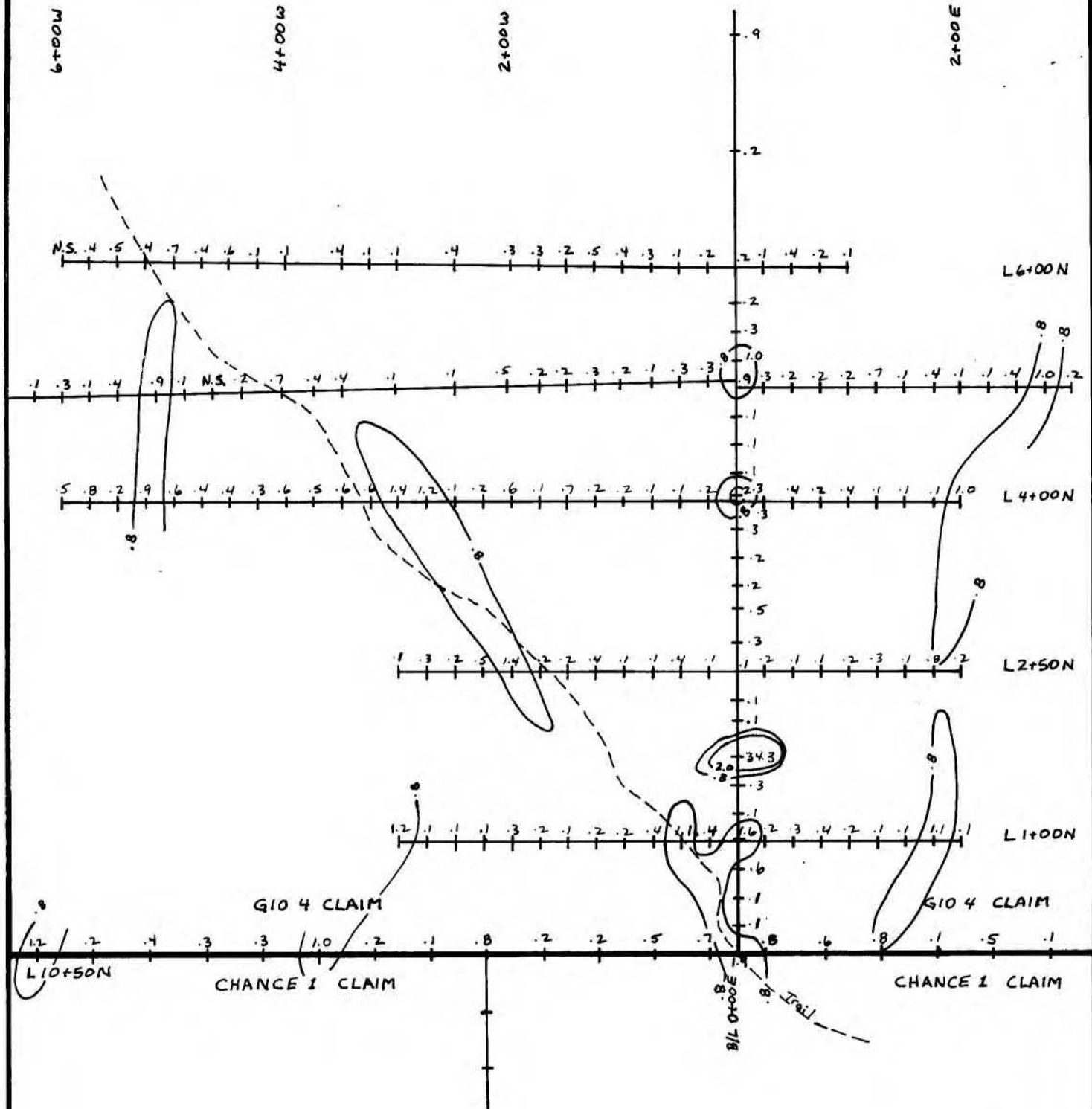
Careful visual examination of data and reference to numerous other geochemical surveys in the area were used to define background, anomalous and highly anomalous populations, as summarized below:

<u>Population</u>	<u>Silver</u>	<u>Copper</u>	<u>Arsenic</u>	<u>Zinc</u>	<u>Lead</u>
background	0-0.8	0-50	0-25	0-150	0-30
anomalous	0.9-2.0	51-100	26-60	151-250	+30
highly anomalous	+2.0	+100	+60	+250	--

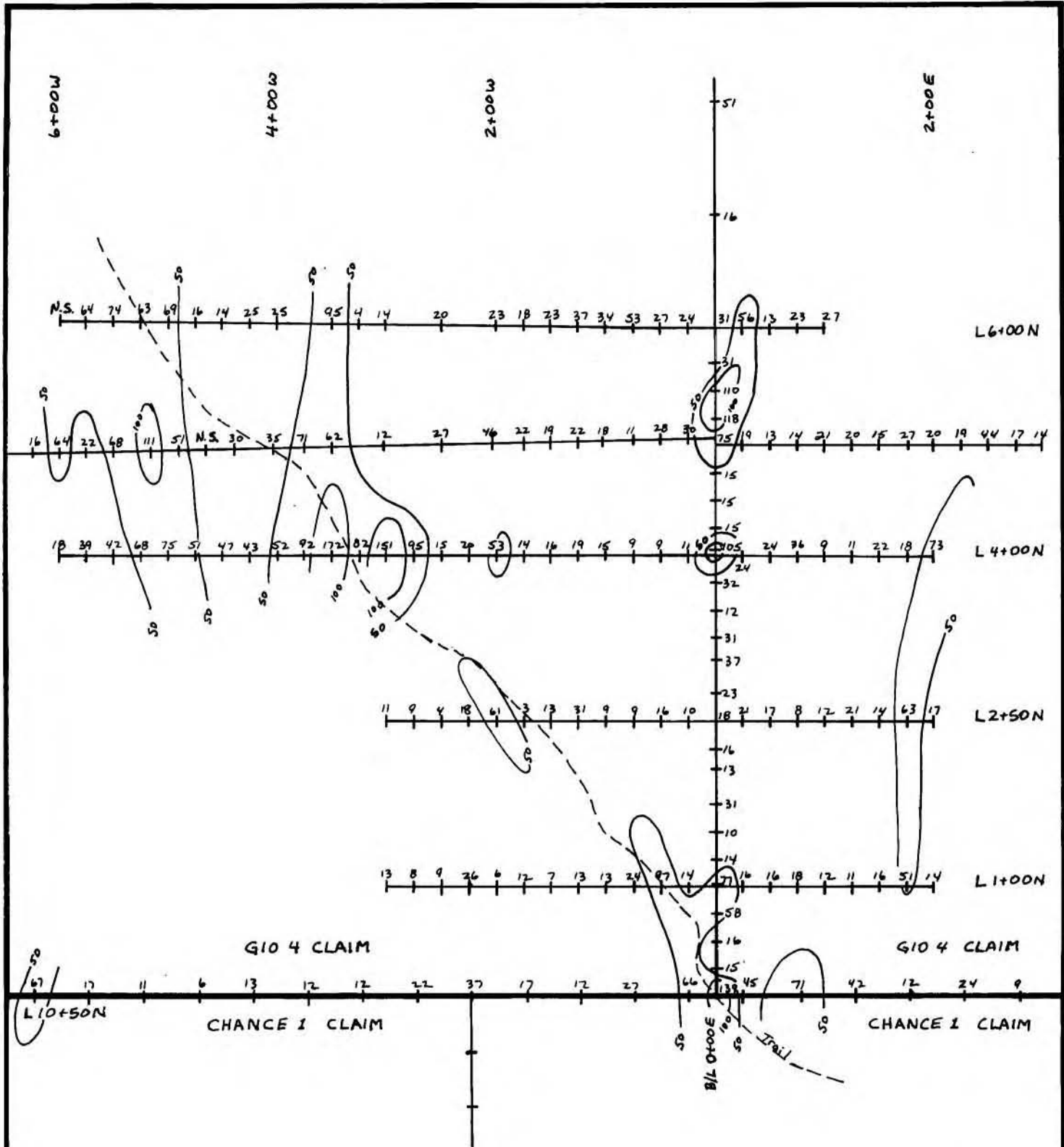
A reasonably good correlation exists between copper and silver values, with copper on the whole being stronger and more extensive. Arsenic shows weak correspondence with copper-silver in the southern grid area, while zinc is generally weak but coincidental with copper and, to a lesser extent, silver. Lead is generally weak with local correlations with copper-zinc in the west. A number of anomalous soil geochemistry zones were outlined within the follow up grid area, and the more important of these are summarized below:

1) a single silver value of 34.3 ppm at L0+00E, 1+50N

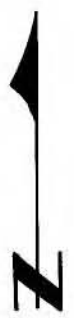
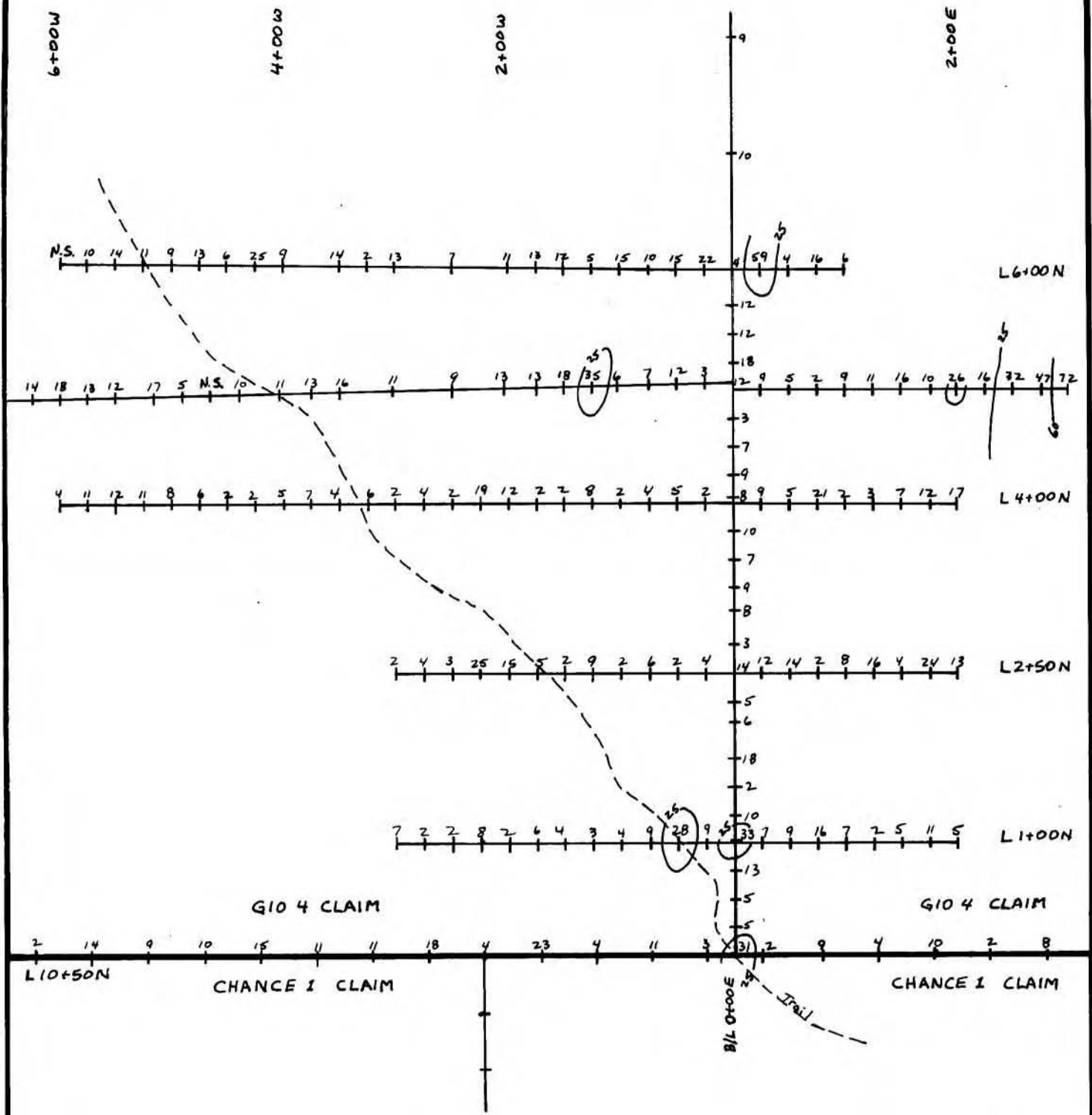
2) an irregularly shaped coincidental copper-silver-arsenic-zinc response, with weak to moderate values, located near the baseline in the southernmost grid area



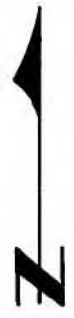
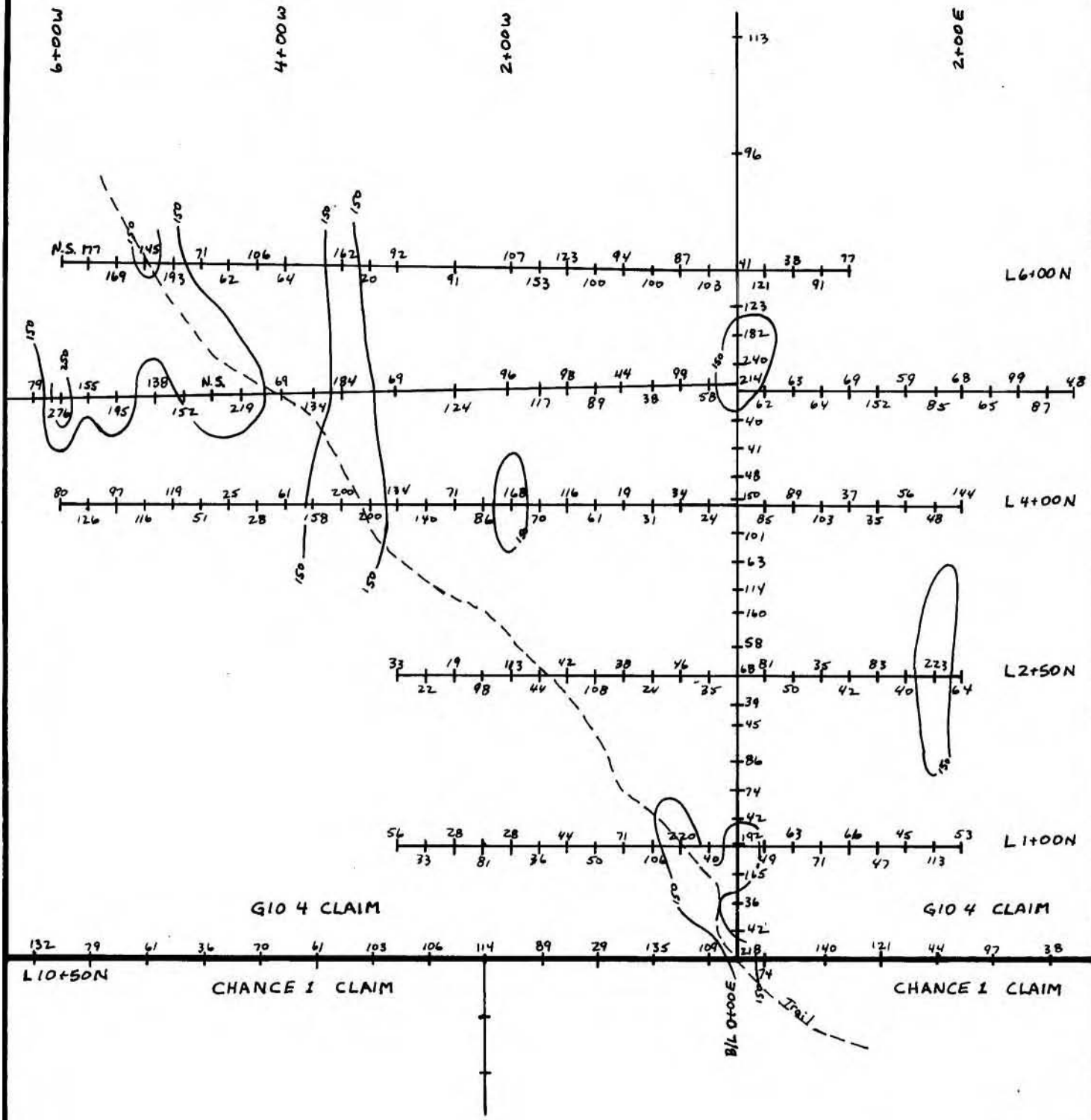
GIO 4 CLAIM	
SOIL GEOCHEMISTRY SILVER (ppm)	
Fig. 4	
Scale: 1:5000	
Date: August 1985	NTS 93L/10E



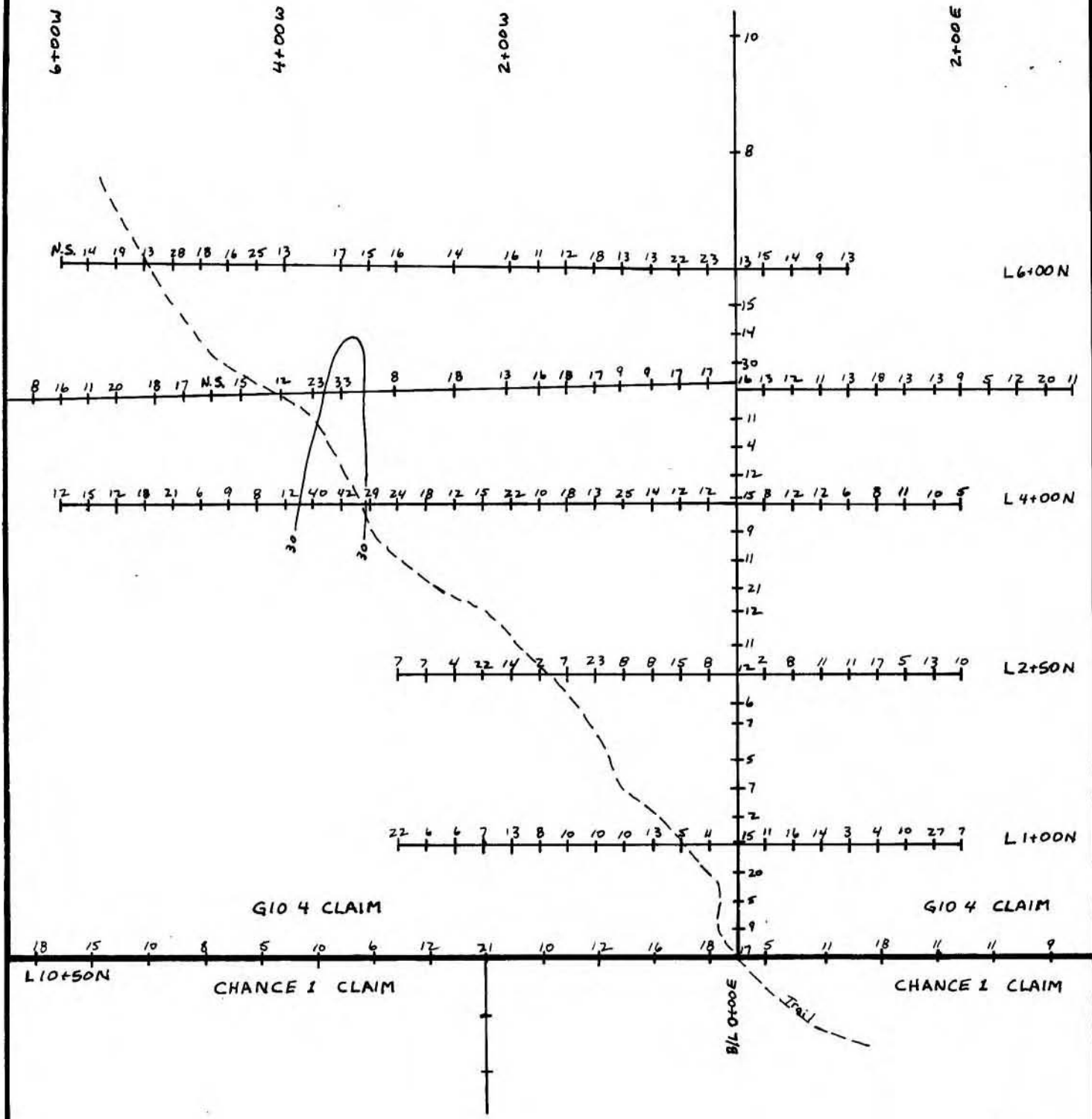
GIO 4 CLAIM	
SOIL GEOCHEMISTRY COPPER (PPM)	
Fig. 5	
Scale:	1:5000
Date:	August 1985
NTS 93L/10E	



GIO 4 CLAIM	
SOIL GEOCHEMISTRY ARSENIC (PPM)	
Fig. 6	
Scale: 1:5000	
Date: August 1985	NTS 93L/10E



GIO 4 CLAIM	
SOIL GEOCHEMISTRY	
ZINC	
(ppm)	
Fig. 7	
Scale: 1:5000	
Date: August 1985	NTS 93L/10E



GIO 4 CLAIM

GIO 4 CLAIM

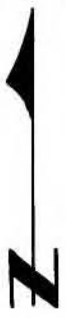
L10+50N

CHANCE 1 CLAIM

CHANCE 1 CLAIM

B/L 0+00E

Fall



GIO.4 CLAIM	
SOIL GEOCHEMISTRY LEAD (PPM) Fig. 8	
Scale: 1:5000	
Date: August 1985	NTS 93L/10E

3) a weak, narrow, linear silver-copper[±]zinc anomalous zone, northerly trending up to 600 meters long, along the eastern grid margin. The northern end of this zone is also anomalous for arsenic across a minimum width of 150 meters. This anomaly has not been fully closed off to the north or the east.

4) a small, weak copper-silver-zinc[±]arsenic[±]weak lead response on and near the baseline between 5+00N and 6+00N

5) a large, weak copper-zinc[±]silver anomaly in the northwestern part of the grid and open to the north, west and south

6) a large, north trending, copper-zinc[±]silver[±]lead response just east of the previous anomaly in the northwest grid area. This zone is open to the north and south, and possibly extends southeast to a small anomalous copper-silver response on L2+50N, 2_00W.

7) a single sample at 4+00N on the baseline with 2.3 ppm silver and 105 ppm copper

RECOMMENDATIONS

Work to date has been preliminary in nature and no firm conclusions can be drawn from results received. Certainly some encouraging results have been encountered and much of the property is virtually unexplored. The follow up grid area should be expanded to close off existing anomalies and to cover areas to the east which lie adjacent to known dykes and stocks. Follow up soil grids should also be established on two previously outlined reconnaissance copper-silver soil anomalies in the northern part of

the claim, as well as over the zone of silicification and alteration noted previously in the northeast. The grid areas should also be tested with VLF electromagnetic (EM) and magnetometer (mag) surveys, and more detailed geological follow up. The estimated cost of this work (Phase 1) is shown below.

Soil Survey	10 days @ \$150/day	\$1500.00
E.M. and Mag Surveys	15 days @ \$150/day	2250.00
Geological Survey	10 days @ \$250/day	2500.00
Geochemical Analysis		2000.00
Camp Costs	35 man-days @ \$50/day	1750.00
Equipment and Supplies		2000.00
Mobilization		1000.00
Report and Supervision		2000.00
Contingencies @ 10%		1500.00
	Total	<u>\$16500.00</u>

Phase 2 work would be contingent on favorable results from Phase 1 and would likely include an orientation induced polarization survey, bulldozer trenching and possibly a limited diamond drilling program. Costs of this work would be dependant on the number and locations of generated targets.

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STATEMENT OF COSTS

The following costs were incurred by Holland Geoservices Ltd. on behalf of Mr. Keith Judd for work conducted on his Gio 4 mineral claim. Work was carried out during the period July 2 to August 23, 1985.

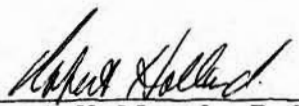
Camp Costs	
3 man-days @ \$15.00/day	\$45.00
Equipment and Supplies	126.55
Geochemical Analysis	
141 samples @ \$4.60 each	648.60
Mobilization	144.54
Labour	
R. Holland, field technician	
1 day @ \$150.00/day	
July 3	150.00
R. Wahl, field technician	
2 days @ \$150.00/day	
July 3, 4	300.00
R. Holland, geologist	
1.5 days @ \$250.00/day	
August 15, 21, 22	375.00
Truck Rental	
2 days @ \$30.00/day	60.00
	<hr/>
Total	\$1849.69

[Handwritten signature]

QUALIFICATIONS

I, Robert Holland, of 13451 - 112A Avenue, Surrey, British Columbia, hereby certify that:

1. I am a graduate of the University of British Columbia (1976) and hold a B.Sc. degree in geology.
2. I am currently employed as a consulting geologist with Holland Geoservices Ltd. of 13451 - 112A Avenue, Surrey, British Columbia.
3. I have been employed in my profession by various mining exploration companies for the past ten years.
4. The information contained in this report was obtained as a result of field work carried out under my supervision by Holland Geoservices Ltd, in 1984.
5. Neither Holland Geoservices Ltd. nor myself have any interest, direct or indirect, in the property described.



Robert Holland, B.Sc.
consulting geologist